A Q-METHODOLOGICAL STUDY OF THE PERSPECTIVES OF AMERICAN AGRICULTURE CULTURE HELD BY STUDENTS AT A LAND-GRANT UNIVERSITY

By

JORGE EDUARDO GONZALEZ

Bachelor of Science in Interdisciplinary Agriculture

Sam Houston State University

Huntsville, Texas

2016

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
May, 2018

A Q-METHODOLOGICAL STUDY OF THE PERSPECTIVES OF AMERICAN AGRICULTURE CULTURE HELD BY STUDENTS AT A LAND-GRANT UNIVERSITY

Thesis Approved:

Dr. Marshall Baker

Thesis Adviser

Dr. Robert Terry, Jr.

Dr. Diane Montgomery

ACKNOWLEDGEMENTS

I would like to thank my parents, Israel and Vilma Gonzalez, for being my biggest supporters, and believing in me my entire life. I am fortunate to be able to call you my family. This thesis is dedicated to the culture and future generations striving for a better tomorrow.

Name: JORGE GONZALEZ

Date of Degree: MAY, 2018

Title of Study: THE CULTURE OF AGRICULTURE: A Q-STUDY OF THE PERSPECTIVES OF AMERICAN AGRICULTURE HELD BY STUDENTS AT OKLAHOMA STATE UNIVERSITY

Major Field: AGRICULTURAL EDUCATION

Abstract: This Q methodological study is an investigation on the subjective perspectives on the culture of American agriculture existing for students enrolled at a tier 2-research institution. Twenty-nine Students of various ethnicities and backgrounds sorted forty-two statements derived from a structured one by six concourse of communication (McKeown & Thomas, 2013). The concourse was developed using Hofstede's (2001) Six Dimensions of National Culture, which included: a) power distance, b) uncertainty avoidance, c) individualism vs. collectivism, d) masculinity vs. femininity, e) long- vs. Short-term orientation, and f) indulgence vs. restraint. The condition of instruction was: "In my opinion, American agriculture is…" and analysis was conducted through Q methodological procedures including correlation, factor analysis and standard score calculation for statements within factors (Watts & Stenner, 2012). Three perspectives were interpreted as: Progressive Agriculture, focused on a modern and future-oriented perspective on American agriculture, Conservative Agriculture deemed American agriculture as socially restrictive, and Traditional Agriculture provided a unique perspective viewing American agriculture as set in its ways. Conclusions, implications, and recommendations are offered for each subjective perspective described.

TABLE OF CONTENTS

LIST OF TABLES

Table Page

LIST OF FIGURES

CHAPTER I

INTRODUCTION

The United States began an educational shift in the 1980s focusing an increase in basic academic courses similar to the push felt during the space race and the Soviet launch of Sputnik in the late 1960s (Norris & Townsend, 1987). The main driver for this change was the publication of *A Nation at Risk*, which restored an emphasis on core academic subjects. This transition created a drop in enrollment for vocational courses and secondary agricultural education, a major concern for the longevity of the field (Knight, 1987). At the same time, Gibson (1998) stated "The children of immigrants now account for nearly one in five of all U.S. schoolchildren, and there is increasing public debate about how to educate these newest Americans" (p. 615). The National Center for Educational Statistics (1993) reported that the total enrollment of ethnic minorities in elementary and secondary schools reached 31.1% in 1990. Additional statistical data collected in 2013 has placed total minority enrollment in public schools at 50%, and a projected reach of 55% for total public school enrollment by 2025 (National Center for Educational Statistics, 2016).

Hofstede (1997) defined cultural learning as a process by which people carry patterns of thinking, feeling, and actions obtained through social environments and life experiences. The understanding of differences in culture between groups in a society is important in professional settings as the values and norms of one culture may not align with those of another (Hofstede, 1997). This study will focus on the perceptions students held by students of various ethnicities regarding the culture of American agriculture.

Background of the Study

In their national research agenda, the American Association for Agricultural Education (AAAE) established a diverse workforce as a priority for the field. Employment statistics from the Employment Opportunities for College Graduates in the U.S. Food, Agricultural, and Natural Resources system projected a shortfall of almost 3,000 agricultural graduates from 2005 to 2010 (Goecker, Gilmore, Smith, & Smith, 2005). More recent projections for agricultural careers for graduates with a postsecondary degree are expected to rise 5%, equating to 57,900 openings from 2015 to 2020, with only 35,400 of those to be filled with graduates with degrees in the agricultural field (Goecker, Smith, Fernandez, Ali, & Theller, 2015).

In a review of literature for the workforce research priority, the AAAE noted underrepresented student involvement in agriculture would be important to the agricultural sector of the United States of America (Roberts et al., 2016). Supporting this statement, the U.S. Census Bureau (2012) reported the percentage of Whites will decrease, while the percentage of Hispanic, African, Asian, and other multicultural Americans will increase. Finally, Roberts et al. (2016) stated "addressing the complex economic, social and environmental challenges related to agriculture is dependent upon our ability to prepare a sufficient scientific and professional workforce that understands the multidisciplinary nature of agriculture and is diverse, globally competent, and possesses 21st century skills" (p. 31).

Although current research priorities in agricultural education are placing emphasis on the need for a diverse and globally competent workforce, the profession has been researching the recruitment of diverse populations since the 1980s (Knight, 1987; Mallory & Sommer, 1986; Norris & Townsend, 1987). Over time, the conversation and literature moved toward the image, perceptions, and beliefs students have about agriculture and agricultural education (Conroy, Scanlon, & Kelsey, 1998; Talbert & Larke, 1995; Warren & Alston, 2007; Wiley, Bowen, Bowen, & Heinsohn, 1997). Recruitment and retention of various populations in American agriculture is tied to the beliefs, attitudes, and values held by the students and their families (Mallory & Sommer, 1986; Sutphin & Newsom-Stewart, 1995).

In line with research priorities of the AAAE, it is important to understand the perceptions students' hold about the culture of American agriculture as a career, occupation, and way of life in order to meet the needs of a sufficient 21st Century agricultural workforce. Krober and Parsons (1958) defined culture as "transmitted and created content and patterns of values, ideas, and other symbolic-meaningful systems as factors in the shaping of human behavior and the artifacts produced through behavior" (p. 583). Geert Hofstede's Cultural Dimensions (1980, 1997, 2001) outline six factors that drive a nation's culture, but can be applied to ethnicities, and occupations inside of the nation as subcultures.

Emphasizing the different cultures of students arriving to institutions of higher education and "knowledge of both students' cultures of origin and immersion can be critical to understanding their abilities to navigate their campus culture successfully" (Museus & Quaye, 2009, p. 81). Kuh and Love (2000) stated most researchers agree that in order for students to succeed in a college environment, they must learn to interact in a productive manner with strangers. Although Kuh and Love (2000) asserted this for all students, González (2002) maintained, "ample corroborating evidence suggests that culture or climate of predominantly White colleges and universities endures as an obstacle for Latino and other ethnic minority

students" (p. 195). The cultural dissonance stemming from institutions with a primarily White student population and students from minority cultural backgrounds can be stressors inhibiting success and increasing thoughts about leaving the institution (Museus & Quaye, 2009), such as agricultural majors.

Statement of the Problem

Educational institutions across the United States have emphasized the importance of a diverse workforce in agriculture for the future (Fraze, Wingenbach, Rutherford & Wolfskill, 2011; Newman & Newman, 1999; Rodriguez & Lamm, 2016; Warren & Alston, 2007): However, some students are perceive barriers to entry into the field of American agriculture, and choose not to enroll in secondary, or post-secondary institutions such as land grant universities (Fraze, et al., 2011; Talbert & Larke, 1995). Additionally, Kuh et al. (2006) assert "a students beliefs are affected by experiences with the institution, which then evolve into attitudes about the institution, which ultimately determine a student's sense of belonging or 'fit' with the institution" (p. 13). If those attitudes are influenced by discrimination or alienation, the student is not likely to continue his or her path of study (Kuh, 2001; Nora & Cabrera, 1996). Swindler (1986) stated "Culture influences action not by providing the ultimate values toward which action is oriented, but by shaping a repertoire or 'tool kit' of habits, skills, and styles from which people construct 'strategies of action'" (p. 273). Thus, understanding the perceived culture of American agriculture by the student is a key to a student success in institutions of higher education (Hofstede, 1980; Hurtado, 1992; Kuh, 2001; Muesus & Quaye, 2009).

Purpose of the Study

The purpose of this project is to identify the subjective opinions held by students at a land grant university on the culture of American agriculture. Understanding student perceptions is key to recruiting diverse populations into the field of agriculture. The study will focus on the

subjective opinions held by students by the implementation of Q sorting to distinguish the personal perceptions students at the land grant university hold concerning American agriculture.

Research Questions

Three research questions were developed to guide this study:

1. What are the subjective opinions held by students with agricultural majors and without agricultural majors?
2. What are the demographics of the sorters that define each subjective opinion on American agriculture?
3. How do Hofstede's Six Dimensions of National Culture describe each subjective opinion of American agriculture?

Significance of the Study

Beliefs, attitudes, and perceptions are predictors of a student's intentions to enter a career field (Sutphin & Newsom-Stewart, 1995). Further, studies on perceptions of agriculture suggest different ethnic populations see little advancement or prestige in an agricultural career (Mallory & Sommer, 1986). Wiley, Bowen, Bowen and Heinsohn (1997) stated these perceptions are being created without knowledge or experience in the field of agriculture. This study seeks to find students outside of a college of agricultural sciences in order to see an outside perspective of American agriculture, providing information on which stereotypes may exist.

Although there have been studies done on the perceptions on agriculture (Henry, Talbert, & Morris, 2014; Smith & Baggett, 2012 Warren & Alston, 2007), no research was found focusing on the perceptions of American agriculture's *overall* culture as defined by Krober and Parsons (1958) and its impact on enrollment in agricultural institutions of higher education.

The implementation of Q methodology in this study provided a research method capable of identifying the subjective opinion of the culture of American agriculture as perceived by the students of a land grant university. Examining the subjective opinions held by students through Q methodology added perspectives based on the participants own point of view, which may lead to better recruitment techniques and methods for agricultural majors.

Limitations of the Study

This is a Q methodological study; therefore, results of the study are aimed towards identifying viewpoints held by participants in the study, and are not generalizable to a wider population of people (Watts & Stenner, 2012). Rather, results are generalizable towards the general phenomenon of subjective opinions held on the perceptions of the culture of American agriculture (Watts & Stenner, 2012).

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 past involvement in agriculture.

CHAPTER II

REVIEW OF LITERATURE

This chapter provides a review of literature associated with the perceptions held about agriculture by students. The review covers topics such as understanding agriculture, agricultural literacy, the changing face of American agriculture, social pressures, role models, perceptions, and their relationship to career choice. The chapter also addresses campus culture, cultural agents, and the relevance of culture to the perceptions of American agriculture. Finally, the chapter discusses the theoretical framework for the study.

Understanding Agriculture

In 1988, The National Research Council (NRC) published *Understanding Agriculture: New Directions for Education*. The report developed an idea for a new form of agricultural education focused on agricultural literacy, in which students are taught *about* agriculture (NRC, 1988). This seminal piece of literature included a definition of an agriculturally literate individual understanding agricultures "history and current economic, social and environmental significance to all Americans" (p. 1). The committee that produced a report deemed agriculture "too important a topic to be taught only to the relatively small percentage of students considering careers in agriculture and pursuing vocational agriculture studies"(p. 8). Principal conclusions and recommendations of the report emphasized changing the focus of agricultural education, stating "Agricultural education is more than vocational agriculture" (NRC, 1988, p. 2).

At the time, agricultural educators were facing a reduction of departments, and complete eliminations of secondary education programs across the United States (Norris & Townsend, 1987). Additionally, Knight (1987) stated that the heavy focus on production and vocational aspects of agricultural education at the time hurt enrollment trends. This was especially true for non-traditional students disconnected from agriculture, who were becoming common in schools in the United States (Knight, 1987). Although negative views of agriculture were becoming more prevalent, they seemed to come from misconceptions about agriculture (Knight, 1987; Norris & Townsend, 1987). A factor contributing to inaccurate perceptions about agriculture was the fact that more than ninety percent of the American populations were two or three generations away from any hands-on agricultural production (Leising & Zilbert, 1994).

The NRC report created a new focus for researchers interested in creating a more informed public about the opportunities in agriculture (Kovar & Ball, 2013). As time moved forward, efforts in agricultural literacy changed from defining and explaining production methods in agriculture to the significance of agriculture on the environmental and global scale (Powell, Agnew & Trexler, 2008). Zurbrick (1990) stated that the implications of agricultural literacy in agricultural education created a need for a new focus on curriculum development toward teaching about agriculture and a new focus for researchers. More recently, the focus of agricultural literacy has moved to integrating content into the existing curriculum and public education policy (Powell et al., 2008).

Kovar and Ball (2013) cite the NRC report as the starting point of research on agricultural literacy. The said the document stressed the need for diversity in American agriculture and continues to guide research on agricultural literacy today. Concerning the need for diversity in American agriculture, The NRC (1988) asserted White males were the majority of the enrollment in agricultural education, with a disproportionate number of minorities in programs across the United States. The low percentage of ethnic minorities enrolled in agriculture, along

with the misconceptions pervasive of agricultural opportunities, intensifies the negative views underrepresented populations hold about American agriculture (Mallory & Sommer, 1986; NRC, 1988; Talbert & Larke, 1995). Agricultural literacy is important to this study because the level of agricultural literacy of an individual regarding agriculture has an impact on the views and subjective opinions about agriculture (Terry, Herring, & Larke, 1992; Valera & Bodzin, 2016).

Agricultural Literacy

While the NRC (1998) provided a definition of agricultural literacy, Frick, Kahler, and Miller (1991) provided one of the most widely used operational definitions of agricultural literacy in the profession from a Delphi study which included the thoughts of opinion leaders in the field of agricultural education. The definition proposed by Frick et al. (1991) was;

> Agricultural literacy can be defined as possessing knowledge and understanding of our food and fiber system. An individual possessing such knowledge would be able to synthesize, analyze, and communicate basic information about agriculture. Basic agricultural education includes: the production of plant and animal products, the economic impact of agriculture, its societal significance, agriculture's important relationship with natural resources and the environment, the marketing of agricultural products, public agricultural policies, the global significance of agriculture, and the distribution of agricultural products. (p. 52)

This definition was commonly used to define agricultural literacy in agricultural education research (Brandt, Forbes, & Keshwani, 2017; Pense, Leising, Portillo, & Igo, 2005; Powell et al., 2008; Trexler & Hess, 2004; Vallera & Bodzin, 2016).

Kovar and Ball (2013) synthesized two decades of agricultural literacy literature from agricultural education journals and found a majority of literature focused on students as participant groups, specifically on those in elementary school. Of the 45 relevant publications

identified in their review of literature, a large percentage focused on assessing the levels agricultural literacy present by participant groups, finding a number of populations either having incomplete levels of literacy, or being agriculturally illiterate (Kovar & Ball, 2013). For example, Pense et al. (2005), found that K-6 students in Arizona, Montana, Oklahoma and Utah were somewhat agriculturally literate in the field even after implementation of agricultural literacy workshops in their classrooms. Terry et al. (1992) surveyed elementary school teachers on their knowledge and perceptions of agriculture, and found that the educators had inaccurate perceptions of agriculture. Ninety percent of the teachers in their study viewed agriculture as farming and ranching only. Concerning views held by high school students, Pense and Leising (2004) discovered mean agricultural knowledge scores of 12th grade students in Oklahoma were below 50%, with rural students scoring lower than urban or suburban students.

Expanding on the finding the level of agricultural literacy of an individual has an impact on how someone perceives agriculture (Terry et al., 1992; Valera & Bodzin, 2016), Knobloch, Ball, and Allen (2007) stated before high school, agricultural education is very limited by the lack of knowledge on the subject of agriculture held by the instructors in the K-12 school systems. Although teachers may have moderate comfort levels with agricultural topics (Trexler & Suvedi, 1998), many teachers do not believe they have the necessary information needed to effectively teach lessons about agriculture (Balschweid, Thompson, & Cole, 1998). Concerning past efforts made to teach agricultural literacy, the NRC (1988) added most Americans know little about the significance of the field:

> Few systematic educational efforts are made to teach or otherwise develop agricultural literacy in students of any age. Although children are taught something about agriculture, the material tends to be fragmented, frequently outdated, usually only farm oriented, and often negative or condescending in tone. (p. 9)

In a an evaluation of a summer enrichment program on agricultural career exploration, Cannon, Broyles, Seibel, and Anderson (2009) found that participants perceptions of agriculture changed significantly. Thus, student beliefs, attitudes and intentions can be shaped through educational intervention on agricultural opportunities.

Of the peer-reviewed publications concerning agricultural literacy, only three published articles focused on college students and their views on agriculture (Kovar & Ball, 2013). Dale, Robinson, and Edwards (2017) studied the levels of agricultural literacy of incoming freshmen at Oklahoma State University, finding that the average mean score for all freshmen was 56%, increasing only to 61.2% for students enrolled in the College of Agricultural Sciences and Natural Resources at the university. Birkenholz, Harris, and Pry (1994) conducted a study on students from Southeast Missouri State University, and found that college students from larger population centers were less knowledgeable about agriculture, but held generally positive views of agriculture, when not accounting for race.

Agricultural Literacy and Culture

Society and history are important to the levels of agricultural literacy seen in a culture, as "in the past, a close identification with a common agrarian culture and heritage resulted in a shared sense of agricultural literacy, arising from intimate familiarity with the production, distribution, and use of agricultural products" (Powell et al., 2008, p. 87). Trexler (2000) believed that if agricultural education wished to increase agricultural literacy, the profession must look at the policies and values held by those stakeholders in agriculture. Meischen and Trexler (2003) further connect literacy to culture, stating, "as one becomes literate, he or she masters the ability to make judgments based on culturally based norms that reify or reshape the culture and its institutions" and "agriculture is a culture unto itself" (p. 43). This new cultural aspect of agricultural literacy prompted Meischen and Trexler (2003) to propose this new definition:

> Agricultural literacy entails knowledge and understanding of agricultural related scientific and technologically-based concepts and processes required for personal decision making, participation in civic and cultural affairs, and economic productivity. At a minimum, if a person were literate about agriculture, food, fiber, and natural resource systems, he or she would be able to, a) engage in social conversation, b) evaluate the validity of media, c) identify local, national, and international issues, and d) pose and evaluate arguments based on scientific evidence. Because agriculture is a unique culture, an understanding of beliefs and values inherent in agriculture should be included in a definition of agricultural literacy so people can become engaged in the system. (p. 44).

Understanding the connection of agricultural literacy and culture is important, as an informed individual is more likely to perceive and seek opportunities in agriculture (Cannon et. al., 2009; Terry, 1992; Vallera & Bodzin, 2016). Agricultural illiteracy and subjective opinions of the culture of American agriculture may be sociological and historical barriers among different populations inhibiting the entry of minorities into the field of agriculture (Birkenholz et al., 1994).

At the collegiate level, Colbath and Morrish (2010) found that students from a central Texas institution knew little about the agricultural, food and fiber sciences. Both Birkenholz et al. (1994) and Colbath and Morrish (2010) included that higher education institutions should implement some form of agricultural lessons in order to further close the gap in college student agricultural illiteracy. Further, more work should be done in assessing college student's views on agriculture (Colbath & Morrish, 2010).

Perceptions of Agriculture

Agricultural literacy and the overall perception of agriculture are tied together, often guiding the student to enter or avoid the field due to their subjective views (Birkenholz et al.,

1994). Researchers in agricultural education began to look at the views students had of agriculture and careers related to the field (Anderson, 2006; Cannon et. al., 2009; Wiley et al., 1997), and reasons which individuals decided to enter or stay away from agriculture (Dyer et. al., 2003; Esters & Bowen, 2005; Talbert & Larke, 1995). The image of agricultural education in public secondary schools was found to be a detriment to future enrollment of students (Dyer et. al., 2003; Mallory & Sommer, 1986; Knight, 1987; Hoover & Scanlon, 1991; Jones, Bowen, & Rumberger, 1998). Students believed agricultural careers to be blue-collar, boring, hard work, and it held no potential for a stable and bright career in the future (Mallory et al., 1986; Norris et al., 1987; Hoover et al., 1991), which is attributed to the disconnect between the school program and the communities they serve, such as agricultural education programs in diverse neighborhoods (Spindler, 1997).

The lack of positive perceptions of agriculture and advocacy for careers in the field in the lives of minority students stems from the cultural models formed by groups through their past lived experiences, such as agriculture and career opportunities within its education (Ogbu & Simons, 1998). Ogbu (2004) expands on cultural models by categorizing the collective identity as attitudes and beliefs formed through cultural models. In a study with Central American high school students, Suarez-Orozco (1987) noted that immigrant parents believed "schooling was the single most significant avenue for status mobility" (p. 291). So while education is important in Central American culture, the cultural models and collective identity created by "hard physical labor at an early age to contribute to the family income" (p. 291) by the parents of Central American students influences students to push away from agricultural education, often seen as intensive in manual labor (Knight, 1987).

Students believed that secondary agricultural education would hinder college preparedness and failed to see agricultural degrees as viable (Hoover et al., 1991). Furthermore, students believed that agricultural education was primarily for white males who have had farm

experience in their life (Knight, 1987; Hoover et al., 1991; Wiley, Bowen, Bowen, & Hiensohn, 1997). These findings, along with the growing number of ethnic minorities entering public secondary education schools created a need to change the face of agriculture to meet the demand of qualified employees in the agricultural sector (Knight, 1987).

The Changing Face of American Agriculture

As the percentages of ethnic minorities in the U.S. public school system increases, American agriculture will need to actively recruit these students to maintain the needs of the nation (Newman & Newman, 1999; Talbert et al., 1999). Ethnic minorities will become an important source of human capital in the field of agriculture but negative opinions toward the career path are creating a disconnection between ethnic minorities and agricultural opportunities available to them (Talbert & Larke, 1995). While the literature found students in general believed agriculture to be a white male dominated field with no future career opportunities, these beliefs are even more prominent in studies accounting for race and ethnicity (Talbert et al., 1995; Jones et al., 1998). Luft (1996) proposed the idea of creating materials to promote minority involvement in agriculture to prevent ethnic minority class decision-making processes off of stereotypes held by the student.

Willerman and Swanson (1953) attest the reputation of an organization impacts whether or not an individual decides to join the group. As such, the image that agriculture is primarily for white males may deter anyone else to enter courses on agriculture (Dyer & Breja, 2003). Talbert et al. (1995) conducted a study on factors influencing ethnic minorities enrollment into secondary agricultural education courses found that non-minorities were more likely to see opportunities in the field of agriculture compared to ethnic minorities. Gibson (1998) attributes the views held by minorities and immigrants about the dominant culture and the changes deemed necessary to succeed in the influential society as *acculturation.* Identity is key to the attitudes and beliefs of a

culture on any given subject (Ogbu & Simons, 1998; Ogbu, 2004), and is created by both the individual and those of the previous generation (Suarez-Orozco & Suarez-Orozco, 2002). Gibson (1998) goes further to say that acculturation can lead to the rejection of 'old' culture in favor of the dominant, but studies on enrollment trends and barriers perceived by minorities concerning agriculture as a career tend to retain their culture's negative beliefs on traditional agricultural pursuits (Mallory & Sommer, 1986; Talbert & Larke, 1995).

Social Pressure and Agricultural Pursuits

Social pressures and stereotypes are important in considering the perceptions held by students in the field of agriculture (Henry, Talbert, & Morris, 2014; Mallory et al., 1986). Henry et al (2014) found once enrolled in an agricultural education course, negative stereotypes tend to be broken. In a study on high school images of agriculture, Mallory et al. (1986) noted ethnic minorities were specifically told not to pursue or enroll in secondary agricultural courses by parents due to the perceived lack of prestige or advancement for their child. More recently, Anderson (2006) noted the importance of the attainment of parental support of life decisions such as career choice.

Of course, support within the environment that the student is being raised is important for all students, regardless of race or ethnicity (Anderson, 2006; Esters & Bowen, 2005; Rawls, 1980), but may not receive full parental support if the goals of the family and the choices of the student do not align (Hodge & Mellin, 2011). Additionally, underrepresented students tend to join and create positive attitudes toward activities that earn the support of the family unit (Anderson, 2006), highlighting the importance of the social aspect of recruiting and retaining minorities into the field of agriculture. Talbert and Larke (1995) studied factors influencing minorities to enroll into a secondary agricultural education course and found that peer pressure from other students in the school was a significant barrier to minorities entering one of the agricultural classes offered.

In a similar study focusing on factors influencing urban students decisions in enrolling in agricultural courses, Esters and Bowen (2005) found friends had a greater influence on the individual student's choice in careers than male parental figures.

Role Models and Perceptions

Role models are a major factor in the enrollment and retention of minority students and are in short supply in agricultural programs (Mallory & Sommer, 1986; Knight, 1987; Talbert et al., 1995). Knight (1987) stressed that role models are the "single most important recruiting device…" in recruiting non-traditional agricultural education students (p. 10). Talbert et al. (1999) qualitative study over the role of role models and mentors for students interested in a career in agriculture at the post-secondary level suggested that students with support from peers and faculty that look like them led to higher rates of success in their field.

Esters and Bowen (2005) found results that imply that the lack of minority representation in agricultural education is a significant variable in students' choice to enroll in agricultural courses. Echoing both Talbert et al. (1999) and Esters and Bowen (2005), Anderson (2006) created several insights on the recruitment of underrepresented individuals, one of which being that "underrepresented minorities tend to struggle to find instructors, classmates, and programs with which they feel a connection," and added "an increase in the presence of minorities and individuals from urban areas into roles of leadership on the secondary and post-secondary levels will encourage an increase in enrollment of minorities and urban students" (p. 11). Agricultural education has historically been seen as purely production oriented (Knight, 1987), and all about "sows, cows and plows" (Norris & Townsend, 1987, p. 7).

Connecting Perceptions and Agricultural Literacy

Along with this misconception, agricultural literacy is dropping in the nation, specifically in urban areas where many diverse populations go to school (Henry et al., 2014). Ethnic

minorities tend to have a lack of agricultural experience leading to a barrier in involvement to secondary agriculture courses (Esters & Bowen, 2005). Providing opportunities to oppose the view that agriculture is purely about production and increasing agricultural literacy of minority populations will be a major factor in the future workforce of American agriculture. Vincent and Torres (2015) assert stakeholders in the field will have to work to incorporate multicultural practices to ensure this.

Multiple suggestions have been offered to increase the number of minorities enrolling in secondary and post-secondary agricultural pursuits. Increasing the number of role models has been a consistent recommendation to secondary agricultural educators wanting to increase the enrollment of underrepresented populations (Mallory & Sommer, 1986; Knight, 1987; Talbert & Larke, 1995; Jones et al., 1998; Talbert et al., 1999; Anderson, 2006). Support groups for students involved in the program have also been common recommendations to retain students beginning their involvement in American agriculture (Mallory & Sommer, 1986; Knight, 1987; Talbert et al., 1999).

Introducing multicultural education into agricultural programs at the college level to prepare teachers for underrepresented students in their classrooms have been proposed to create a feeling of inclusion (Luft, 1996; Jones et al., 1998; Vincent & Torres, 2015; Rodriguez & Lamm, 2016). Across the literature ethnic minorities have been found to have more negative views on opportunities and careers in agriculture, often believing it only involves production (Knight, 1987; Hoover & Scanlon, 1991; Talbert & Larke, 1995). Hoover and Scanlon (1991) suggested a complete overhaul in secondary agricultural education curriculum to better fit the shift in American educational philosophies and decrease the perception that American agriculture is purely a vocational pursuit (Hoover & Scanlon, 1991).

Campus Culture

In his research on student persistence towards attaining a post-secondary degree, Kuh (2001) referenced his previous work on institutional culture, Kuh and Whitt (1988), which defined the culture of institutions of higher education as:

> The collective, mutually shaping patterns of institutional history, mission, physical settings, norms, traditions, values, practices, beliefs, and assumptions that guide the behavior of individuals and groups in an institution of higher education and which provide a frame of reference for interpreting the meanings of events and actions on and off campus. (p. 25).

Further, Kuh (2001) explained that the institutions cultural aspects such as norms and traditions, influence the perceptions of the campus by the students, and affects almost everything that occurs at the college or university. Within a large institutions such as land grant universities, subcultures are created that have norms and values unique to the group (Kuh, 2001), such as a college within the university. Both culture and subculture are important to keep in consideration when considering students' perceptions and experiences concerning the focus of this study, American agriculture, during their time at an institution of higher education (Museus & Quaye, 2009).

Museus and Quaye (2009) state, "as colleges and universities experience rapid structural diversification, researchers should consider how campus culture will differently shape the experiences of students from increasingly diverse cultural backgrounds" (p. 79). Additionally, Hurtado (1992) conducted research on campus racial climate in which characteristics such as group relations and institutionalized ideas were highlighted as areas that require multicultural values in order to create an environment promoting development for all students. In a study concerning the effects of campus cultural climates Nora and Cabrera (1996) found that minorities

were more prone to experience prejudice and report negative in-class experiences than Caucasian students at the institution.

Perceptions of a negative culture, such as discrimination or alienation by peers has a significant effect on the social integration of a student at the institution (Nora & Cabrera, 1996), and social integration is correlated to the commitment of a students persistence towards completing their degree (Museus & Quaye, 2009). Kuh (2001) asserts that a campus' cultural elements influence student satisfaction, achievement, and ultimately whether a student persists and graduates. In order to change the perceptions of campus culture, institutions must create "a web of interlocking initiatives", that "can over time shape an institutional culture that promotes student success" (Kuh, 2001). In a commissioned report by the National Symposium on Postsecondary Student Success, Kuh et al (2006) provided eight principles for strengthening precollege preparation, one of which being to "Embrace social, cultural, and learning style differences in developing learning environments and activities for underserved students" (p. 90), which would entail affirming cultural backgrounds, and creating environments which support diversity and group relations.

In the context of this study, the subjective opinions students' hold on the subject of American agriculture may be impacted by the perceptions they have of the campus culture of land grant universities (Kuh, 2001). The traditions, values and beliefs a campus hold are important to keep in mind as students express their subjective opinions on American agriculture. Kuh and Whitt (1988) explain these values provide the reference of which students base their meanings and opinions.

Cultural Agents

Research on institutional higher education focused on the importance of cultural agents, who provide minority students validation as models, and provide knowledge on navigating the

campus culture (Museus & Quaye, 2009; Rendón, Jalomo, & Nora, 2000). Cultural agents are similar to role models discussed earlier, as both can be an individual providing support for the student (Anderson, 2006; Knight, 1987; Museus & Quaye, 2009). The difference between a role model and cultural agents lies in the grander scale of agents, which can be networks such as student associations or enclaves, instead of an individual (Museus & Quaye, 2009). Students of difference cultures may be asked to deviate from their home culture once they reach their institution and the cultural agent lessens the cultural dissonance, closing the gap between the institutional and home culture (Museus & Quaye, 2009; Nora & Cabrera, 1996). As an example Nora and Cabrera (1996) found that minorities that reported higher levels of positive experiences with their faculty and staff were more persistent and committed to their program of study at the institution.

The Relevance of Culture

Mead (2015) asserts that culture is the ways that given groups of people see the world, and at a smaller level, how individuals see each other. Institutional cultures are socially constructed (González, 2002), and define the patterns of behavior, values, assumptions and beliefs that members share (Peterson & Spencer, 1990). Kuh et al. (2006) stated, "Institutional mission and culture shape campus environments and influence student outcomes to varying degrees' (p. 80). Along with the institutions own-formed culture, the students' cultural origins help shape student perceptions once they are enrolled at an institution of higher education and understanding the cultural background of the student at the institution is a key to professional and social success (Kuh, 2001; Museus & Quaye, 2009). Additionally, if ethnic disparities in educational attainment continue, the United States will not have the needed amount of college educated citizens in the workforce (Carnevale & Derochers, 2003; Kelly, 2005). This disparity and lack of educational attainment has especially been highlighted in American agriculture with various publications highlighting the need for a diverse workforce (Anderson, 2006; Esters &

Bowen, 2005; Jones, Bowen, & Rumberger, 1998; Knight, 1987; Mallory & Sommer, 1986 Norris & Townsend, 1987).

Theoretical Framework

This study was framed by Geert Hofstede's (1980, 2001) Six Dimensions of National Culture. In *Cultures and Organizations: Software of the Mind* (1997), Hofstede asserted, "Every person carries with him or herself patterns of thinking, feeling, and potential acting which were learned throughout their lifetime" (p. 4). These learned patterns are termed, *mental programs*, which are acquired from childhood and the individual's life experiences (Hofstede, 1997; Sergiu, 2011). Mental programs are specific to an individual, and Hofstede (1997) defines culture as "the collective programming of the mind which distinguishes the members of one group or category of people from another" (p. 5). Hofstede asserts culture is not inherited, it is learned, and ones social environment is important in the development of that mental program (Hofstede, 1997; Minkov & Hofstede, 2012). This study was interested in identifying the subjective opinions of the mentally programmed culture present in American agriculture as perceived by students enrolled at a land grant university.

Culture and Values

Hofstede (2001) defines values as "feelings with arrows attached to them: Each has a plus and a minus pole" (p. 6). Going further in his explanation concerning values, "Values have both *intensity* and *direction*" (p. 6). "If we 'hold' a value, this means that the issue involved has some relevance for us (intensity) and that we identify some outcomes as 'good' and others as 'bad' (direction)" (Hofstede, 2001, p. 6). In a list, Hofstede gives the following as examples:

- Dangerous versus safe
- Unnatural versus natural
- Moral versus immoral

- Decent versus indecent (p. 6)

Values, just as cultures, are mentally programmed throughout our lives (Hofstede, 2001). From these values attached with intensity and direction, collective norms are formed (Hofstede, 2001). Culture, the collective mental programming, is shaped by the values, or collective norms, of a group (Hofstede, 2001; Dobson & Gelade, 2012).

Hofstede's Six Dimensions of National Culture

After Hofstede (2001) defines culture and values, the actual study behind the dimensions of culture are explained. Hofstede (1980) developed an instrument to measure the intensity and direction of the beliefs of individuals from forty different countries. After analyzing the data, Hofstede (1980), defines four dimensions of cultural values. These four original dimensions included; Power Distance, Uncertainty Avoidance, Individualism, and Masculinity (Hofstede, 1980). In the second edition of Cultures Consequences (2001), the original four dimensions are named Power Distance, Uncertainty Avoidance, Individualism and Collectivism, and Masculinity and Femininity. Hofstede and Michael Harris Bond named a fifth dimension in 1985 by including values based on those from Chinese scholars such as Confucius (Hofstede, 2001). The new dimension was named long- versus short-term orientation (Hofstede & Bond, 1988). The sixth dimension was formed by Hofstede, Hofstede, and Minkov (2010), and is named indulgence versus restraint. Each of the dimensions will be explained in detail.

Power Distance

Power distance is concerned with how different cultures deal with human inequality (Hofstede, 2001). According to Hofstede (2001), inequality in societies can take many forms, ranging from wealth, power, social status, and prestige. Expanding on the concept of power distance, Hofstede (2001) stated "culture sets the level of power distance at which the tendency of the powerful to maintain or increase power distances and the tendency of the less powerful to

reduce them will find their equilibrium" (p. 83). The acceptable level of power distance is supported by the social environment and is a part of the national culture (Hofstede, 2001). Cultural norms in countries with low power distances consider inequality a necessary evil, but strive to minimize it, while countries with high power distances see inequality as the basis for order in the society (Hofstede, 2001). Both low and high power distance cultures contain hierarchies, but the nature of each are different, with low power distance cultures seeing it as a convenience, and high power distance cultures seeing it as natural superiority over other individuals (Hofstede, 2001).

Uncertainty Avoidance

The second dimension of culture found by Hofstede (2001) is uncertainty avoidance. According to Hofstede (2001), "uncertainty about the future is a basic fact of human life with which we try to cope through the domains of technology, law and religion" (p. 145). It is important to note that uncertainty avoidance is not risk avoidance. Uncertainty deals with intangibles, such as anxiety, while risk deals with the probabilities of events occurring (Hofstede, 2001). In differentiating uncertainty and risk, Hofstede (2001) asserts:

> "As soon as uncertainty is expressed as risk, it ceases to be a source of anxiety. It may become a source of fear, but it may also be accepted as routine, such as risks involved in driving a car or practicing a dangerous sport" (p. 148).

This differentiation is important, as uncertainty avoidance is primarily focused on removing ambiguity from daily life (Hofstede, 2001). Countries with weaker levels of uncertainty avoidance tend to have lower feelings of urgency and stress, higher openness to new ideas, acceptance of unfamiliarity, and are generally happier than those countries with strong uncertainty avoidance (Hofstede, 2001). Social systems with stronger levels of uncertainty

avoidance seek predictable situations, are intolerant of deviations from the cultural norm and have individuals with high levels of anxiety and stress (Hofstede, 2001).

Individualism and Collectivism

Originally named individualism, Hofstede (2001) added collectivism to this cultural dimension in order to highlight both ends of this of these cultural values' intensity and direction. Expanding on each side of the spectrum, Hofstede (2001) states this dimensions is "reflected in the way people live together-for example, in nuclear families, extended families, or tribes-and it has many implications for values and behaviors" (p. 209). Hofstede (2001) provides a concrete definition of the cultural dimension as follows;

> "Individualism stands for a society in which the ties between individuals are loose: Everyone is expected to look after him/herself and her/his immediate family only. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty" (p. 225)

In other words, the dimension of individualism and collectivism is based on "the degree to which people in a society are integrated into groups" (Hofstede, 2011, p. 11).

Collectivist societies integrate their relationships vertically and horizontally, meaning friends, the individual's nuclear family, and multiple generations are close to each other (Hofstede, 2001). Additionally, collectivist groups have a "we" mentality, when considering the decisions throughout life (Hofstede, 2001). On the other end of the dimensional spectrum, individualist societies have an "I" mentality, often developing distinct personal identities (Hofstede, 2001). Instead of integrating relationships regardless of the closeness to their immediate family, individualist cultures are expected to make decisions without a collective

conscience or dependence on others, even the immediate family, after the individual reaches maturity (Hofstede, 2001).

Masculinity and Femininity

Similar to the individualist dimension, masculinity had femininity added to the name to describe the two opposite poles of the cultural dimensions (Hofstede, 2001). According to Hofstede (2001), "Part of our mental programming depends on whether we were born as girls or boys" (p. 286). Going further, "on average, men have been programmed with tougher values and women with more tender values, but that the gap between the genders varies by country" (p. 288). The more clear the divide between the gender roles, the more masculine the culture (Hofstede, 2001). Hofstede (2001) provided the following definition for the dimension;

> "Masculinity stands for a society in which social gender roles are clearly distinct: Men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. Femininity stands for a society in which gender roles overlap: Both men and women are supposed to be modest, tender, and concerned with the quality of life" (p. 297).

In masculine cultures, work is more important than family, men fight, and women may or may not be assertive (Hofstede, 2011). On the other end of the dimensional spectrum, feminine cultures have blurred lines between the gender roles, men are allowed to express feelings, and place importance on work and family balance (Hofstede, 2011).

Long- versus Short-Term Orientation

The fifth dimension of national cultures is long-versus short-term orientation. The dimension was created based on the work of Michael Harris Bond and the Chinese Value Survey developed by a team of researchers under the name of The Chinese Culture Connection (Bond,

1987). Instead of developing this instrument with Western influences in mind, Bond created it by focusing on Eastern philosophers. The value survey was based on the teachings of Confucius, on both the short and long term sides of the spectrum (Hofstede, 2001). With permission of Bond, the dimension was added to Hofstede's cultural dimensions and published in 1991 (Hofstede, 2011). The new dimension was defined by Bond and Hofstede (2001) in the second edition of Cultures Consequences;

> "Long Term Orientation stands for the fostering of virtues towards future rewards, in particular, perseverance and thrift. Its opposite pole, Short Term Orientation, stands for the fostering of virtues related to the past and present, in particular, respect for tradition, preservation of 'face' and fulfilling social obligations" (p. 359).

Some of the defining characteristics of short-term orientation include an importance on past and present events, national pride, traditions, and service to others (Hofstede, 2011). Cultures exhibiting long-term orientations are characterized by goals set for the future, persevering through tough times, and funding availability for investments (Hofstede, 2011).

Indulgence versus Restraint

The newest dimension of Hofstede's national cultures, indulgence and restraint, was added in the third edition of Cultures Consequences (2010). Michael Minkov developed the dimension in his own research on cross-cultural examination based on the work of Hofstede (Minkov, 2007). Following correspondence with Geert and Gert Jan Hofstede, the dimension was adopted into Hofstede's cultural dimensions (Hofstede, 2011). According to Hofstede (2011):

> "Indulgence stands for a society that allows relatively free gratification of basic and natural human desires related to enjoying life and having fun. Restraint stands for a society that controls gratification of needs and regurgitates it by means of strict social norms" (p. 15).

Hofstede (2011) provides distinguishing factors for both the indulgence and restraint sides of the spectrum. Indulgent societies are generally happier, with lower restrictions on sexual desires, higher levels of obesity, and national order is a low priority. On the other hand, restrained cultures have fewer happy people, lower birthrates, strict sexual norms, and high populations of officers of the law (Hofstede, 2011).

National Culture and American Agriculture

Hofstede's National Cultural Dimensions are primarily focused on cross-examination of various countries and their specific cultures (Hofstede, 2010). It is important to reiterate that Hofstede et al (2010) defined national culture as the mental programming of an individual and the *values* that make up that programming. According to Meischen and Trexler (2003), agriculture is a culture. Specifically, agriculture has a set of values unique to itself (Meischen & Trexler, 2003). The purpose of this study is to identify the perceived culture of American agriculture. Through the values proposed through Hofstede's Six Dimensions of National Culture, a theoretical frame is available to gauge the values perceived by American agriculture.

CHAPTER III

METHODOLOGY

This chapter explains the rationale for selecting Q methodology as the research method for this study, and provides information about procedures, limitations and Q set development associated with the method. The chapter also addresses the development of the participants, or P-set.

Q Methodology

Physicist and psychologist William Stephenson established Q methodology in 1935 (Watts & Stenner, 2012). According to McKeown and Thomas (2013), the primary reason for creating a Q study is to "discern people's perceptions of their world from the vantage point of self-reference" (McKeown & Thomas, 2013, p. 1). The personal vantage point and perceptions held by an individual is understood as subjectivity (McKeown & Thomas, 2013). Q methodology was determined as the best research approach because of its inherent ability to reveal subjectivity as the participant decides what is meaningful and assigns value to the statements provided from their own perspective (Watts & Stenner, 2012). Concerning operant subjectivity and its relation to Q-methodology, Brown (1980) states "Q methodology provides flexible procedures for the examination of subjectivity within an operant framework" (p. 6). Brown (1980) added, "A Q sort is such a picture, being an individual's conception of the way things stand. As such, it is subjective and self-referent. It is operant in that it is in no way dependent on constructed effects" (Brown, 1980, p. 6). As a result, Q-methodological studies human subjectivity using a systematic

format (McKeown & Thomas, 2012). The perceptions held about agriculture are important to researchers in agricultural education and the agricultural industry (Jones et al., 1998; Newman & Newman, 1999, Talbert et al., 1995). Q-methodology provided the most systematic way to understand the subjective perspectives and opinions held by individuals, in this case, people inside and outside of the field of agriculture (Brown, 1980).

According to McKeown and Thomas (2013), Q methodology is generally done in five steps. Concourse/Q set development, P set development, Q sorting, data analysis, and factor interpretation. In Q method, the P set, or participants and Q set derived by sampling a concourse of opinions on the phenomenon being studied are tailored toward the requirements of the study and the questions the researcher seeks to answer (Watts & Stenner, 2012). During Q sorting, Q technique is used to rank statements (Brown, 1980). During data analysis through factor analysis, the distribution of the statements along the parameters set by the researcher by each of the participant sorts is considered the variable for the study as opposed to each individual statement being a variable (Watts & Stenner, 2005). Factor interpretation is then done in order to give each analyzed viewpoint a name, an identity, and to provide a distinction of that specific subjective perspective on the subject of the Q study (Watts & Stenner, 2012).

Concourse and Q Sample

In order to begin this Q-methodological study, a concourse of all available thoughts and opinions on American agriculture was created (Watts & Stenner, 2012). These statements provided both adequate coverage of subject, and were shaped to give a un biased, balanced view of the opinions and perspectives on American agriculture (Watts & Stenner, 2012). The collection of statements then formulate the concourse, of which a Q sample is taken in order to adequately present all perspectives on American agriculture. Additionally, “A Q sample approximates the total commentary on a given issue; its purpose is to provide a comprehensive but manageable

representation of the concourse from which it is taken" (McKeown & Thomas, 2013, p.23). Out of a concourse of 87 statements related to American agriculture, 42 were selected for the Q set.

The statements selected for the Q set were structured, meaning that they are "systematically composed and, given a sufficiently comprehensive and theoretically elaborate experimental design" according to Hofstede's Dimensions of National Culture (McKeown & Thomas, 2013, p. 23). A structured method of Q sample development was implemented in order to prevent any doubt on the representativeness of the concourse of communication in the Q set (McKeown & Thomas, 2013). The statements selected were placed in the final sample to reveal six homogeneous groups of concepts (Brown, 1980) in Hofstede's (2001) Six Dimensions of National Culture, and different ways of approaching each concept was found by selecting heterogeneous statements (Brown, 1980) within each of the theoretical concepts.

Participants

The study used a small number of respondents as commonly recommended for Q methodological studies (McKeown & Thomas, 2013). This study originally consisted of 21 students sorted through purposive snowball sampling and stayed within the acceptable range of participants based on the number of statements presented to the respondent, which Watts and Stenner (2012) state to be one respondent for every pair of statements in the study. In order to stabilize factors discovered during the initial data analysis, eight more students were recruited, ending data collection at twenty-nine total respondents. Although this study did not stay within the original ratio, Watts and Stenner (2012) state that going above the ratio is acceptable as long as the number of sorts does not exceed the number of statements.

Procedure

It is important to note that the Q sample has no meaning until sorted by the participants in their agreement or disagreement with said statements during the application of Q technique

(McKeown & Thomas, 2013). The participants sorted a 42-statement Q set. This study created a normal, forced-choice 11 point distribution ranging from -5 to +5, styled as 1 to 11 on the sorting boards in order to prevent any negative connotations towards statements during ranking. The participants were then tasked to rank the statements at the rank that best represented their individual viewpoints. Watts and Stenner (2012) asserted that a fixed distribution of statements allows for the most convenient and pragmatic method of item ranking. The distribution was made platykurtic, in order to get more discriminated selections from the participants during the Q sample item ranking process (Watts & Stenner, 2012).

Participants were given instructions from a script outlining the steps of Q technique to complete the Q sort. The responders were given the condition of instruction "In my opinion, American agriculture is…" and asked to create three initial piles from the 42-statement Q sample, most like me, most unlike me, and in the middle. After completing this step, the participants were tasked with working between their most like me and most unlike me piles to begin filling their sort board, beginning at the +5 and -5, and moving inward. Once out of statements in either pile, the participants were told to begin using their 'in the middle' pile to complete the form board. After the Q sort was completed, participants were allowed to rearrange any statements placement before the researcher noted the final sort distribution.

Apart from the Q sort itself, field notes were taken during the sorting from each of the sorters and their comments throughout the item sorting process. After the sort, the participants were asked to fill out a demographics sheet, asking them about their past experiences in agriculture, agricultural education, and the National FFA organization. Additionally, the respondents were asked how likely they were to work in agriculture in the future, on a 1 to 10 scale, ranging from *Never* to *Definitely*, and provided any thoughts they had on the statements they had sorted. Watts and Stenner (2012) explained that field notes and demographic information concerning relevant information to the Q study could enhance the richness of the

interpretation of the data. The demographic sheet gave the participants the option to provide a code name and phone number to possibly participate in a telephone post-sort interview. The post-sort interviews seek to add context and provide a more detailed understanding of each array (Watts & Stenner, 2012).

Data Analysis

The data, along with other valuable information such as z-scores for each statement and Q-sort values from -5 to +5 for each array were critical in the interpretation and naming of the arrays. Q methodology implements only a few elements of traditional factor analysis, or R method to analyze data (Brown, 1980). Traditional factor analysis focuses on the "relationship between traits, with scores being expressions of individual differences for the various traits in a sample of persons" (Brown, 1980, p. 12). Q methodology however, "is more gestalt and wholistic, rather than analytic and atomistic, and reflects functional relatedness" (Brown, 1980, p.14). This difference leads to the method of analyzing the data collected for this specific Q methodological study. Q methodological statistical method techniques do not aim to measure objective differences in the traits or statements of the individuals sorting, but to understand the individual's subjective choice and value given to the Q sample statements over each other (Brown, 1980). So while R factor analysis focuses on separate components to correlate, Q factor analysis correlates the sorters themselves, instead of the individual items present in the Q sample (Brown, 1980).

Data analysis was conducted using the PQMethod statistical package, developed by John Atkinson and is currently maintained by Peter Schmolck (Schmolck, 2014). Data input to the PQMethod statistical program was factor analyzed through principal component analysis, which extracts dominant patterns in a factor matrix and provides initial factor loadings (Wold, Esbensen & Geladi, 1987). The factors were then rotated analytically through varimax, which maximized

the amount of study variance and highlights the majority viewpoints of a group (Watts & Stenner, 2012). Defining sorts from the factor loadings were flagged at a .45 significance level in one factor in order to catch the most significant sorters for each of the varimax-rotated factors. Additionally, a higher significant and defining load on one factor identified exemplar sorts.

After analysis, PQMethod analysis report offered data on three stable arrays. Factor scores, or the positioning of statements on each of the individual sorts, were analyzed in order to create three arrays. The final PQMethod report provided defining statements, defined as those statements in a Q sample that distinguish one array from another (Watts & Stenner, 2012). Consensus statements include those that do no distinguish arrays (Watts & Stenner, 2012).

Factor Interpretation

Arrays are the Q-sort representation of the views held by the sorters whose sorts define a factor (Watts & Stenner, 2012). The array must be analyzed as a whole, in line with Q-methodological principles (Watts & Stenner, 2012). A full profile of all data sources for each array was used in order to interpret all arrays, which provides a consistent and holistic approach to Q-method interpretation. The profile method created a better understanding of the defining and consensus statements in each array by aligning the items in order from -5 to +5 for each of the arrays and highlighting item placement for each of array. Demographic data were used in order to better explain and name the arrays, as well as to lead the researcher away from speculative interpretations.

CHAPTER IV

A Q-METHODOLOGICAL STUDY OF THE PERSPECTIVES OF AMERICAN AGRICULTURE CULTURE HELD BY STUDENTS AT A LAND-GRANT UNIVERSITY

Jorge Gonzalez

Oklahoma State University

Abstract

This Q methodological study is an investigation on the subjective perspectives on the culture of American agriculture existing for students enrolled at a tier 2 research institution. Twenty-nine Students of various ethnicities and backgrounds sorted forty-two statements derived from a structured one by six concourse of communication (McKeown & Thomas, 2013). The concourse was developed using Hofstede's (2001) Six Dimensions of National Culture, which included: a) power distance, b) uncertainty avoidance, c) individualism vs. collectivism, d) masculinity vs. femininity, e) long- vs. Short-term orientation, and f) indulgence vs. restraint. The condition of instruction was: "In my opinion, American agriculture is…" and analysis was conducted through Q methodological procedures including correlation, factor analysis and standard score calculation for statements within factor arrays (Watts & Stenner, 2012). Three perspectives were interpreted as: Progressive Agriculture, focused on a modern and future-oriented perspective on American agriculture, Conservative Agriculture deemed American agriculture as socially restrictive, and Traditional Agriculture provided a unique perspective viewing American agriculture as set in its ways. Conclusions, implications, and recommendations are offered for each subjective perspective described.

Keywords: Culture, Ethnic Minorities, Perceptions, College Students

The United States began an educational shift in the 1980s focusing on an increase in basic academic courses similar to the push felt during the space race after the launch of Sputnik by the Soviet Union (Norris & Townsend, 1987). The main driver for this change was the publication of *A Nation at Risk*, which pushed for an emphasis on core academic subjects and created a drop in enrollment for vocational and secondary agricultural education. This shift in educational priorities was a major concern for the longevity of the field (Knight, 1987).

Another cause of concern for leaders in agricultural education at all levels was demographic shifts in American public schools. In 1993, The National Center for Educational Statistics (2016) reported that the total enrollment of ethnic minorities in elementary and secondary schools was over a quarter than the population. Statistical data collected in 2013 placed total minority enrollment in public schools at 50%, and a projected reach of 55% for total public school enrollment by 2025. Meanwhile, educational institutions across the United States have emphasized the importance of a diverse workforce for the future (Fraze, Wingenbach, Rutherford & Wolfskill, 2011; Newman & Newman, 1999; Roberts, Harder, & Brashears, 2016; Rodriguez & Lamm, 2016; Warren & Alston, 2007).

Nonetheless, some students perceive barriers to entry into the field of American agriculture, and choose not to enroll in secondary or post-secondary agricultural education (Talbert & Larke, 1995; Fraze, et. al., 2011). The cultural dissonance stemming from a primarily White institution, and the enrollment of students with ethnic cultural backgrounds can be stressors inhibiting success and increasing thoughts about leaving institutions such as land grant universities (Museus & Quaye, 2009).

Literature Review

In the 1980s negative views about agriculture became more prevalent. However, these perspectives were considered to come from misconceptions about what agriculture entails as a

career and way of life (Knight, 1987; Norris & Townsend, 1987). As a result, The National Research Council (NRC) (1988), published a report entitled, *Understanding Agriculture: New Directions for Education*. In the document, the NRC proposed a new form of agricultural education focused on agricultural literacy in order to teach students *about* agriculture (NRC, 1988).

The level of agricultural literacy an individual possesses has an impact on the views and subjective opinions a person holds in connection to agriculture (Terry, Herring, & Larke, 1992; Valera & Bodzin, 2016). Of the 45 relevant publications identified in the review of literature by Kovar and Ball (2013), most populations either had incomplete levels of literacy or were agriculturally illiterate. However, in a study grounded by a summer enrichment program on agricultural career exploration, Cannon, Broyles, Seibel, and Anderson (2009) found participants in their study had their perceptions of agriculture changed significantly, demonstrating that student beliefs, attitudes, and intentions can be shaped through highlighting agricultural opportunities.

Common agrarian culture and heritage result in a shared sense of agricultural literacy arising from intimate familiarity agriculture (Powell et al., 2008). Trexler (2000) believed that if agricultural educators wished to change views toward agriculture, the profession needed to look at the policies and values held by those stakeholders in the field. This cultural aspect of agricultural literacy prompted Meischen and Trexler (2003) to propose a new view of agriculture and literacy in a cultural context, "Because agriculture is a unique culture, an understanding of beliefs and values inherent in agriculture should be included in a definition of agricultural literacy so people can become engaged in the system" (p. 44).

Understanding the connection of agriculture and culture is critical, as an informed individual is more likely to perceive and seek opportunities in agriculture for themselves (Cannon

et al., 2009; Terry et al., 1992; Vallera & Bodzin, 2016). Literacy of agriculture today shapes the subjective perceptions of the culture of American agriculture and is a result of sociological and historical barriers among different populations inhibiting the entry of minorities into the field of agriculture (Birkenholz et al., 1994).

The lack of positive perceptions of agriculture and advocacy for careers in the field in the lives of minority students stems from the cultural models formed by groups through their past lived experiences such as agriculture and opportunities within the field (Ogbu & Simons, 1998). Ogbu (2004) expands on cultural models by categorizing the collective identity as attitudes and beliefs formed through cultural models. In a study conducted with Central American secondary education students, Suarez-Orozco (1987) noted that immigrant parents believe school to be paramount in social mobility, but the cultural models and collective identity created by hard labor in their country of origin influences students to push away from agriculture, often seen as intensive in manual labor (Knight, 1987; Suarez-Orozco, 1987). The findings of Suarez-Orozco (1987) are seconded in the literature as negative beliefs on the opportunities in agriculture are even more prominent in studies accounting for race and ethnicity (Jones et al., 1998; Talbert et al., 1995).

Social pressures and stereotypes are important in considering the perceptions held by students in the field of agriculture (Henry, Talbert, & Morris, 2014; Mallory et al., 1986). Henry et al. (2014) found that once enrolled in an agricultural education course, negative stereotypes tend to be lessened (Henry et al., 2014). Anderson (2006) created several insights on the recruitment of underrepresented individuals, including that underrepresented minorities fail to find role models and added that the presence of other minorities assists in developing positive outlooks towards agriculture. In his research on student persistence towards attaining a post-secondary degree, Kuh and Whitt (1988), defined the culture of institutions of higher education as:

> The collective, mutually shaping patterns of institutional history, mission, physical settings, norms, traditions, values, practices, beliefs, and assumptions that guide the behavior of individuals and groups in an institution of higher education and which provide a frame of reference for interpreting the meanings of events and actions on and off campus. (p. 25)

Building on his past work, Kuh (2001) explained that cultural aspects, such as norms and traditions, influence the perceptions of the campus by the students and affects almost everything that occurs at the college or university. Within large institutions such as land grant universities, subcultures are created that have norms and values unique to the group (Kuh, 2001), such as colleges of agricultural sciences or departments within the college. Culture is in consideration for studying students' perceptions and experiences concerning a specific context, such as American agriculture (Museus & Quaye, 2009).

Manifestations of an unwelcoming culture such as discrimination or alienation by peers have a significant effect on the social integration of a student at the institution (Nora & Cabrera, 1996). Social integration is correlated to the commitment of a student's persistence towards completing their degree (Museus & Quaye, 2009). Kuh (2001) asserts that a campus' cultural elements influence student satisfaction, achievement, and ultimately whether a student persists and graduates.

Mead (2015) asserted that culture is composed of ways given groups of people see the world, and at a smaller level, how individuals see each other. Institutional cultures are socially constructed (González, 2002) and define the patterns of behavior, values, assumptions, and beliefs that members share. Kuh et al. (2006) stated, "Institutional mission and culture shape campus environments and influence student outcomes to varying degrees' (p. 87).

If ethic disparities in educational attainment continue, the United States will not have the needed amount of college-educated citizens in the workforce (Carnevale & Derochers, 2003). This disparity and lack of educational attainment has especially been highlighted in American agriculture with various publications highlighting the need for a diverse workforce (Anderson, 2006; Esters & Bowen, 2005; Jones, Bowen, & Rumberger, 1998; Knight, 1987; Mallory & Sommer, 1986 Norris & Townsend, 1987). Kuh and Whitt (1988), Meischen and Trexler (2003), and Krober and Parsons (1958) all assert cultural values as a key to understanding the perceptions and views of a culture.

Statement of the Problem, Purpose and Research Questions

Krober and Parsons (1958) defined culture as "transmitted and created content and patterns of values, ideas, and other symbolic-meaningful systems as factors in the shaping of human behavior and the artifacts produced through behavior" (p. 583). In line with the priorities of the American Association of Agricultural Educators (AAAE) to create a proficient and professional workforce for the 21st century (Roberts, et al., 2016), it is important to understand the perceptions that students hold about the culture of American agriculture as a career, occupation and way of life in order to meet the needs of an efficient agricultural workforce.

The purpose of this study was to identify and analyze perceptions held by students enrolled in a land grant university on the culture of American agriculture. Understanding student perceptions is key to recruiting diverse populations into the field of agriculture. Three research questions were developed to guide this study;

1. What are the subjective opinions held by students with agricultural majors and without agricultural majors?
2. What are the demographics of the sorters that define each subjective opinion on American agriculture?

3. How do Hofstede's Six Dimensions of National Culture describe each subjective opinion of American agriculture?

Theoretical Framework

This study was framed in Geert Hofstede's (1980, 2001) Six Dimensions of National Culture (see Table 1). In *Cultures and Organizations: Software of the Mind* (1997), Hofstede asserts that, "Every person carries with him or herself patterns of thinking, feeling, and potential acting which were learned throughout their lifetime" (Hofstede, 1997, p. 4). These learned patterns are termed *mental programs*, which are acquired from childhood and the individual's life experiences (Hofstede, 1997). Hofstede (1997) draws from mental models in defining culture as "the collective programming of the mind which distinguishes the members of one group or category of people from another" (p. 5). He contended culture is not inherited, it is learned, and one's social environment is important in the development of that mental program (Hofstede, 1997). This study used Hofstede's theory to frame the mentally programmed culture present in American agriculture as perceived by students. There are six dimensions in Hofstede's theory, four developed originally, and two developed as the literature on culture grew.

Table 1
Hofstede's Six Dimensions of National Culture

Dimension of Culture	Description	Citation
Power Distance	Concerned with how different cultures deal with human inequality between members.	(Hofstede, 2001)
Uncertainty Avoidance	How people in a culture deal with the uncertainty of human life, pertaining to coping strategies such as technology, law, and religion.	(Hofstede, 2001)
Masculinity vs. Femininity	Two poles of the same dimension. The more clear the divide in gender roles in a culture, the more masculine it is considered.	(Hofstede, 2001)
Individualism vs. Collectivism	Reflected in the degree in which members of a society are integrated into groups. Ties within members of an individualist culture are loose outside of immediate family, while collectivist cultures form strong in and out groups.	(Hofstede, 2001)

Dimension of Culture	Description	Citation
Long- vs. Short-Term Orientation	Long-term cultures allow change in their traditions and focus on economic investment, while short-term culture see tradition as sacrosanct with few economic investments.	(Hofstede, 2001; Bond, 1987)
Indulgence vs. Restraint	Indulgent cultures view freedom of speech as paramount, with lower restrictions on sexual desires. While restrained cultures place an emphasis on national order and strict sexual norms.	Hofstede, 2011; Minkov, 2007)

Hofstede's National Cultural Dimensions are primarily focused on cross-examination of various countries and their specific cultures (Hofstede, 2001). It is important to reiterate that Hofstede (2001) defined national culture as the mental programming of an individual and the *values* that make up that programming. According to Meischen and Trexler (2003), agriculture is a culture with values unique to itself. The purpose of this study was to identify the perceived culture of American agriculture. Through the values proposed through Hofstede's Six Dimensions of National Culture, a theoretical frame is available to gauge the values perceived by American agriculture.

Methodology

This study applied Q-methodology to identify the subjective perspectives of students about the culture of American agriculture. According to McKeown and Thomas (2013), the primary reason for creating a Q study is to "discern people's perceptions of their world from the vantage point of self-reference" (p. 1), which is further understood as subjectivity. A Q study is inherently subjective, as the participant decides what is meaningful and assigns value to the statements provided from their own perspective (Watts & Stenner, 2005). Concerning operant subjectivity, and its relation to Q methodology, Brown (1980) states "Q methodology provides flexible procedures for the examination of subjectivity within an operant framework", going further, Brown (1980) adds that "A Q sort is such a picture, being an individual's conception of

the way things stand. As such, it is subjective and self-referent. It is operant in that it is in no way dependent on constructed effects" (p. 6). As a result, Q methodology studies human subjectivity using a systematic format (McKeown & Thomas, 2013).

Concourse and Q Sample

In a Q-methodological study, a concourse of all available thoughts and opinions on a subject such as American agriculture is created (Watts & Stenner, 2012). These statements must provide both adequate coverage of subject matter and an un-biased, balanced view of the opinions and perspectives related to any research questions asked by the researcher (Watts & Stenner, 2012). In other words, the concourse is "to the Q set what population is to person sample (or P set)" (p.34). McKeown and Thomas (2013) assert that of this population of subjective opinions, the Q sample is selected to create a representative set of statements for the Q study. Additionally, they state that "A Q sample approximates the total commentary on a given issue; its purpose is to provide a comprehensive but manageable representation of the concourse from which it is taken" (p.23). Yet it is important to note that the statements have no meaning until sorted by the P-set in their agreement or disagreement with the Q set during the application of Q technique (McKeown & Thomas, 2013).

Participants, Procedure, Data Collection, and Analyses

In line with the methodological principles of Q, this study stayed within the acceptable range of participants based on the number of statements presented to the respondent not exceeding the number of statements (Watts & Stenner, 2012). This Q study consisted of a 42-statement Q sample. 21 students with or without agricultural majors at a land grant university were recruited through purposive and snowball sampling. In order to stabilize factors during the initial data analysis, eight more students were recruited, ending data collection with 29 total respondents.

The participants sorted a 42-statement Q sample. A normal, forced-choice, eleven point distribution ranging from -5 to +5 (see Figure 1) was applied, styled as 1 to 11 on the sorting boards in order to prevent any negative connotations towards statements during ranking. The participants were tasked to choose the specific number of items that best represented their individual viewpoints at each of the ranking values. Watts and Stenner (2012) asserted that a fixed distribution of statements allows for the most convenient and pragmatic method of item ranking. The distribution was made platykurtic in order to get more discriminated selections from the participants during the Q sample item ranking process (Watts & Stenner, 2012).

Participants were given instructions from a researchers script that outlined the steps of Q technique to complete the Q sort. The responders were given the condition of instruction "In my opinion, American agriculture is…" and asked to create three initial piles from the 42-statement Q sample, (a) most like me, (b) most unlike me, and (c) in the middle. After completing this step, the participants were tasked with working between their (a) most like me and (b) most unlike me piles to begin filling their sort board, beginning at the 1 and 11, and moving inward. Once statements from either piles (a) or (b) were completely sorted onto the board, the participants were told to begin using their (c) pile to complete the form board. After the Q sort was completed, participants were allowed to rearrange any statements they gave before the researcher noted the final sort distribution.

Apart from the Q sort itself, field notes were taken on each of the sorters and their thoughts throughout the item sorting process. After the sort, the participants were asked to fill out a demographics sheet about their past experiences in agriculture, agricultural education, the National FFA Organization, and their ethnicity (see Table 1). Additionally, the respondents were asked how likely they were to work in agriculture in the future, on a 1 to 10 scale, ranging from Never to Definitely, and provide any thoughts they had on the statements they had sorted. Watts and Stenner (2012) explain that field notes and demographic information concerning relevant

information to the Q study can enhance the richness of the data and help during interpretation. Finally, the demographic sheet gave the participants the option to provide a code name and phone number to possibly participate in a telephone post-sort interview. Again, the post-sort interviews seek to add a fuller and more detailed understanding of each array (Watts & Stenner, 2012).

The PQMethod statistical package originally developed by John Atkinson, and currently maintained by Peter Schmolck (Schmolck, 2014) was utilized to analyze the sorts. Data were input to the PQMethod and factor analyzed through the principal component method, rotated through varimax. It is important to note that unlike traditional factor analysis, Q factor analysis correlates the entire sort, instead of the individual items present in the Q sample (Brown, 1980). Defining sorts were flagged at a .45 significance level in order to capture the exemplar sorts for each factor (Watts & Stenner, 2005), and the final Q factor analysis reported three stable factors. The standardized factor z-scores were analyzed in order to create an array for each of the three factors. The final PQMethod report also provided distinguishing statements defined as those statements in a Q sample that are differentiate one array from another (Watts & Stenner, 2012), and consensus statements which include those that do no distinguish arrays (Watts & Stenner, 2012). Z-scores, along with other valuable information such as demographic data and Q-sort values for each array were critical in the interpretation of the arrays.

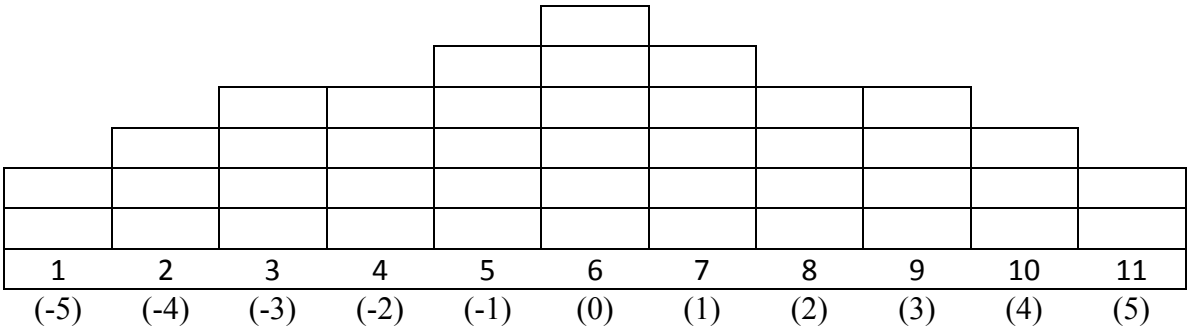


Figure 1. Q-sort form board

Results

Twenty-five of the 29 students enrolled at a land grant university with and without agricultural majors defined one of the three arrays: *Progressive Agriculture, Conservative Industrial Agriculture,* or *Traditional Agriculture*. These arrays provided a unique perception on the culture of American agriculture, each with a set of distinguishing statements setting their beliefs apart from the other arrays. The following sections will serve to answer the first two questions of the research study. The following paragraph aims to answer the second research question for this study.

In total, there were 14 defining sorters for first array, Progressive Agriculture (see Table 2). Students in holding this perception were predominantly white, and are currently agricultural majors with agricultural experiences. Six students defined the second array, Conservative Industrial Agricultur*e*. These participants were predominantly African American with the exception of two white respondents, and none of them are enrolled in an agricultural major or have agricultural experience. Four students define the final array, Traditional Agriculture. One sorter was an agricultural major and the other three are not. All of the participants holding this perception identified as white females, and only two had agricultural experience or involvement in agricultural education. The following sections will answer the first research question of the study by providing the themes and concepts leading the three perceptions of American agriculture. The second half of the results section will answer the third question by applying Hofstede's Six Dimensions of National Culture to the arrays.

Table 2
Factor Matrix by Participants

Sort	Gender	Ethnicity	Ag Major?	Yrs. In AG	AGED/FFA?	Factor Loadings		
						1	2	3
1	Female	W	Yes	3	Yes	**0.7448**	0.2071	0.1715
2	Male	W	Yes	8	Yes	**0.7192**	0.2856	0.1727
4	Female	H/L	Yes	0	No	**0.6655**	0.4393	-0.0494
6	Female	W	Yes	4	Yes	**0.7689**	-0.0708	0.3819
8	Female	AA	Yes	0	Yes	**0.6514**	0.1791	0.1115
9	Male	H/L	Yes	2.5	No	**0.6790**	0.4362	-0.1856
11	Female	W	Yes	6	Yes	**0.8384**	0.0772	0.2481
13	Male	W	No	0	No	**0.4836**	-0.3877	-0.3480
14	Female	W	No	0	Yes	**0.4811**	0.2725	0.3693
17	Female	AI	Yes	0	No	**0.5105**	0.2222	-0.1052
20	Female	W	No	0	No	**0.6427**	0.3398	0.2869
22	Female	AA	No	0	No	**0.7989**	-0.0253	0.0636
23	Female	W	Yes	0	Yes	**0.7468**	-0.0464	0.3706
28	Female	W	Yes	16	Yes	**0.8277**	0.1313	0.1691
3	Male	AA	No	0	No	0.2024	**0.5728**	-0.0589
12	Female	AI	No	0	No	0.2150	**0.4518**	0.3721
16	Female	AA	No	0	No	0.1425	**0.7125**	0.2022
18	Male	AA	No	0	No	0.3336	**0.6076**	0.3036
25	Female	W	No	0	No	0.2390	**0.6042**	0.4329
29	Male	AA	No	0	No	-0.3690	**0.4799**	-0.1754
5	Female	W	Yes	4	Yes	0.3393	-0.1606	**0.7650**
10	Female	W	No	0	No	-0.0846	0.1664	**0.6255**
19	Female	W	No	3	No	0.3005	0.4400	**0.5238**
27	Female	W	No	0	No	0.0274	0.0659	**0.6253**
7	Female	H/L	Yes	3	Yes	0.5205	-0.0974	0.5055
15	Male	W	No	1	No	0.5183	0.1528	0.5178
21	Female	W	No	11	Yes	0.5715	0.3314	0.4991
24	Female	W	No	0	No	0.0188	0.5301	0.5886
26	Female	W	No	0	No	0.5424	0.3345	0.5742

Note. Defining sorts are bolded. W = White, H/L = Hispanic or Latino, AA = African American, AI = American Indian

Results Associated with Q Sort Arrays

Progressive Agriculture. Three major concepts arose from the interpretation of the arrays, supporting a perceptual name of Progressive Agriculture. Students that held the Progressive Agricultural perception believed that American agriculture is innovative, ranking

statements on technology highly (35, +5; 13; +4; 10,+3). At the same time, these individuals disagreed with statements that would disparage the idea of American agriculture being hesitant to apply new technologies (8, -3; 21, -5). One participant stated, “The most highly educated people I know are rural farmers. It’s a business. You have to know what you’re doing. Not everyone can do it”.

Progressive Agriculturalists saw American agriculture as shifting towards a level playing field for men and women in the field alike. The second concept emerging through the interpretation of the array supports the nature of changing gender roles in American agriculture. Statements on the masculine nature of American agriculture were placed near the center of the Q-sort (24, -2), but arose as distinguishing statements (22, -1; 26, -2). While the placement of the statements in the array seem to point towards indifference, field notes taken during sorting provide context to the central placement of gender specific statements. For example, one participant explained that statements covering male dominance and respect as a female in the industry are changing. After sorting, the individual said, “20 years ago (statements 22 and 26) would be over there (+5), but now there are role models and movies” indicating greater gender role fluidity and representation in American agriculture.

The third concept arising from Progressive Agriculture was based in the familial ties present in the perception of innovative, modern American agriculture. This concept painted a picture of the close-knit and connecting nature of American agriculture (1, +2; 18, +2). These ideas were strengthened by the belief that balancing work with family is possible in the field (25, -5). In post sort interviews, participants believed “Most ag is a family business”, which was echoed by another participant who said “I can see why people say that (it is hard to balance work and family life in agriculture), but it’s family run businesses”.

Table 3
Array Position for Progressive Agriculture Statements

No.	Statement	Array Position
32	A profession that requires hard work.	+5
35	Innovative and creative.	+5
13	At the cutting edge of harvesting technology.	+4
15	Stronger when farmers and ranchers stick together.	+4
33	A major reason why the U.S. is such a huge world power.	+4
40	Full of overweight people.	-4
19	Awful at accepting people that don't fit the mold.	-4
6	Definitely more about money than "feeding the world".	-4
21	Not a career path for intellectuals.	+5
25	A terrible career path if you want to balance your work and your family life.	+5
	Important Distinguishing Statements	
35	Innovative and creative.	+5
13	At the cutting edge of harvesting technology.	+4
36	Very satisfying to be involved in.	+3
10	Accepting of genetically modified organisms.	+3
22	A male dominated field.	-1
26	Hard to be respected in as a woman.	-1
4	Controlled by giant corporations.	-2
8	Based on more tradition than science.	-3
25	A terrible career path if you want to balance your work and your family life.	-5

Conservative Industrial Agriculture. The second perception of American agriculture was named Conservative Industrial Agriculture. Social conservatives concepts were found in this perception. Sorters perceived that American agriculture was generally politically conservative (2, +5). Socially, Conservative Industrial Agriculturalists saw American agriculture as against social movements in the LGBTQ and activist areas apparent in today's American domestic affairs (37, -5). A post sort interview conducted on this array brought these perceptions to light. One respondent believed that "People in ag are definitely not for Black Lives Matter. They're more conservative", and added that "Agriculture is predominantly in the south, which tends to be more

racist". Another sorter added, "You think of ag, and you think of the south. It doesn't make you think of a radical political liberal movement".

An idea of masculinity arose in the Conservative Industrial perception of American agriculture. The arrangement of the array supported the idea of a strong male presence in American agriculture (22, +4; 7, +4). At the same time, Conservative Industrial Agriculturalists did not believe in traditional gender roles for American agriculture (24, -1). Finally, the Conservative Agriculturalists had a theme of intellectual agriculture. The array pointed towards individuals holding this perception believing that the American agriculture is advancing technologically (21, -4; 13, +2) and is scientifically driven (8, -4) in the industry.

Table 4
Array Positions for Conservative Industrial Agriculture Statements

No.	Statement	Array Position
32	A profession that requires hard work.	+5
2	Full of political conservatives.	+5
7	Full of good ol' boys.	+4
22	A male dominated field.	+4
31	Patriotic, like apple pie and the flag.	+4
21	Not a career path for intellectuals.	-4
8	Based on more tradition than science.	-4
30	Will not be affected by politics in the long run.	-4
1	A way to connect to my family.	+5
37	Supportive of modern rights movements like Black Lives Matter.	+5
	Important Distinguishing Statements	
2	Full of political conservatives.	+5
7	Full of good ol' boys.	+4
41	Against Pro-LGBTQ Legislation	+2
1	A way to connect to my family.	-5
37	Supportive of modern rights movements like Black Lives Matter.	-5

Traditional Agriculture. The final perception of American agriculture was named Traditional Agriculture. A major concept in Traditional Agriculturalists perception of American agriculture was a patriarchal view of the field. American agriculture was seen as male dominated (22, +4), and difficult for a woman to be respected in (26, +1). For the Traditional Agriculturalist,

American agriculture is set in its ways. This perception includes specific old school stances on gender roles, social issues and technology (24, +4; 8, +2; 38, +1; 35, -2; 41, -2; 37, -3; 10, -3). Concerning these views, one participant stated statement positions on current events and issues such as gender roles, Black Lives Matter and LGBTQ legislation were indicative of the "stereotypical of the old hick cowboy, but those stereotypes exist for a reason".

Finally, Traditional Agriculturalists placed an emphasis on the family-owned nature of the American agriculture. Field notes on one of the sorters provided insight on this theme. During sorting, one participant stated, "giant corporations don't necessarily control everything because family is important in agriculture". The participants sorted statements concerning family and the collective nature of American agriculture highly (18, +3; 15, +3; 1, +3), and ranked corporate influence negatively (4, -4).

Table 5
Array Position for Traditional Agriculture Statements

No.	Statement	Array Position
31	Patriotic, like apple pie and the flag.	+5
32	A profession that requires hard work.	+5
22	A male dominated field.	+4
24	Old school about gender roles.	+4
20	Focused on getting the job done at all costs – no excuses.	+4
14	Politically incompetent.	-4
40	Full of overweight people.	-4
4	Controlled by giant corporations.	-4
6	Definitely more about money than "feeding the world".	-5
30	Will not be affected by politics in the long run.	-5
	Important Distinguishing Statements	
24	Old school about gender roles.	+4
20	Focused on getting the job done at all costs.	+4
8	Based on more tradition than science.	+2
35	Innovative and creative.	-2
10	Accepting of Genetically Modified Organisms.	-3
37	Supportive of modern rights movements like Black Lives Matter.	-3
4	Controlled by giant corporations.	-4

Consensus Statement "A profession that requires hard work" was a statement placed at (+5) in all three of the arrays, but had different interpretations based on the perception of American agriculture. In the context of Progressive Agriculture, the array placed importance on self-discipline (39, +3) and attaining work goals (20, +1). Along with the other themes present in the array for Progressive Agriculture, hard work was interpreted as working towards a better future. During post sort interviews on the array position for the theme of hard work, a distinguishing sorter stated, "In ag, we have to work hard because no one knows what we do. There is so much that goes into it that people don't see". Another sorter added, "It doesn't matter if its genetic design or manual labor. Ag is hard work".

Along with self-discipline and goal completion (39, +5; 20, -3), Conservative Industrial Agriculturalists see hard work as labor intensive (27, -2). A post sort interview brought more light to this interpretation. When asked about the nature of hard work in agriculture, the participant saw American agriculture as "Stereotypical farming. Crops and animals. Labor. Not 8 to 5". In field notes taken during the sorting, one participant stated that agricultural work today consisted of more automated work, speaking to the innovative theme, "but its still manual and hard labor".

For the Traditional Agricultural perception, hard work was perceived as manual labor (16, +3), in line with traditional agricultural practices. In field notes taken during sorting, one sorter stated, "I can definitely relate to (Statement) 16. AGED isn't like any other teaching career. You have to do a lot of actual agricultural work".

Hofstede's Dimensions on the Arrays

The third research question for this study aims to understand the arrays present after data analysis in terms of Hofstede's Six Dimensions of National Culture. Theoretically relevant statements were selected and displayed in Tables 6, 7 and 8. Statement no. 42 is not related to any

of the national cultural dimensions, but relates to animal rights, which are always subject to the perceptions of American agriculture.

Progressive Agriculture and Hofstede. The Progressive Agriculture array showed strong feelings on the short-term/long-term orientation perceived of American agriculture. The array agreed most with statements that aligned with the long-term side of the spectrum for this dimension of culture. Statements on hard work (32, +5) and innovation (35, +5) were ranked the most like participants sorting in this cultural perception of American agriculture. With that being said, the Progressive Agriculturalists did imply short-term values of the spectrum, such as national pride (31, +2; 33, +4). Uncertainty avoidance was the next most polarized dimension of national culture present in this view of American agriculture. Statements concerning governmental regulation (12, -3; 11, +3), and acceptance of new ideas or technology (8, -3; 10, +3; 13, +4) support the notion that American agriculture has low uncertainty avoidance, and is generally comfortable with ambiguity, albeit understanding of the stress which ambiguity in agriculture may cause in the field (9; +2).

Progressive Agriculture only placed one statement regarding power distance in the outer regions of the array, but generally disagreed with statements indicative of large power distances in the field of American agriculture (6, -4; 4, -2; 3, -2; 1, +2). On the individualist/collectivist dimension, Progressive Agriculture perceives American agriculture to be a collectivist culture, which gains its strength from the communal bonds of working together (15, +4; 18, +2; 19; -4). The masculine/feminine dimension was placed largely in the center of the array, with work and family balance being the only statement that pointed to a feminine culture (25, -5). During post sort interviews, several participants noted that while American agriculture had a tendency to be masculine in nature, which is changing in this generation, as one participant stated, “Things are changing so rapidly that newer generations are the cookie cutter straight white male”.

Finally, Progressive Agriculture placed the statements concerning indulgence and restraint in a way that points towards moderate levels of cultural restraint in American agriculture. While the field may be satisfying to work in (36, +3), the array points mostly supports statements that promote discipline (39, +3) and disagrees with statements over social liberties (41, -3) and physical attributes of an indulgent culture (40, -4).

Table 6
Theoretical Array Positions for Progressive Agriculture

No.	Statement	Theoretical Indication	Array Position
Power Distance			
1	A way to connect to my family.	Low PD	+2
3	Exploiting farm laborers.	Low PD	-2
4	Controlled by giant corporations.	Low PD	-2
6	Definitely more about money than "feeding the world".	Low PD	-4
Uncertainty Avoidance			
13	At the cutting edge of harvesting technology.	Low UA	+4
10	Accepting of Genetically Modified Organisms.	Low UA	+3
11	Big on safety.	High UA	+3
9	Extremely stressful for farmers and ranchers.	High UA	+2
8	Based on more tradition than science.	Low UA	-3
12	Against government regulation.	Low UA	-3
Individualism vs. Collectivism			
15	Stronger when farmers and ranchers stick together.	Collectivist	+4
18	Full of really close-knit families looking out for each other.	Collectivist	+2
19	Awful at accepting people that don't fit the mold.	Individualist	-4
Masculine vs. Feminine			
25	A terrible career path if you want to balance your work and your family life	Feminine	-5
Short-Term vs. Long-Term Orientation			
32	A profession that requires hard work.	Long-Term	+5
35	Innovative and creative.	Long-Term	+5
31	Patriotic, like apple pie and the flag.	Short-Term	+4
33	A major reason why the U.S. is such a huge world power.	Short-Term	+2
Indulgence vs. Restraint			
39	Tough if you aren't self-disciplined.	Restraint	+3
41	Against Pro-LGBTQ legislation.	Restraint	-3
40	Full of overweight people.	Restraint	-4

Conservative Industrial Agriculture and Hofstede. The Conservative Industrial Agriculture array provided a different view of American agriculture. Social issues leaned heavily towards a restrained viewpoint in American agriculture (37, -5; 41, +2). Statements aligned with activism and reforms indicative of an indulgent culture were sorted in a manner indicative of the perception of a restrained culture (37, -5; 41, +2). Other statements chosen to represent the indulgent/restraint dimension, such as self-discipline (39, +3), physical attributes (40, -3), and cultural satisfaction (36, -2) were also strongly indicative of a highly restrained culture. The array placed self-discipline and physical attributes of restraint highly in the array (40, -3; 39, +3). Conservative Industrial Agriculture also differed in their perception of power distance in American agriculture, placing statements on the conservative nature (2, +5) and importance of family (1, -5) in a configuration indicative of high power distance and inequality. When asked about the restrictive nature found in the array, one of the respondents stated, "Thinking of the people that I know in it are white. It's a white industry". Conservative Industrial Agriculture also viewed American agriculture as a masculine culture. This is indicated by the placement of statements concerning the amount of males in the field (22, +4), but there are elements of the cultural femininity through the perceptions of family and work balance in the field of American agriculture (25, +3).

Conservative Industrial Agriculture viewed American agriculture to have low uncertainty avoidance, placing statements on science (8, -4) and political involvement (14, -3) in accordance to low uncertainty avoidance, but also acknowledged the risk of American agriculture and stress of the uncertainty in the field (9, +3). This perception also generally pointed to an individualist culture, with most of the array aligned against statements promoting collectivist in and out groups and an importance placed on task completion (21, -4; 20, -3; 19, -2). In terms of long-term/short-term orientation, Conservative Industrial Agriculture placed statements promoting nationalistic values (32, +4; 33, +3) in a manner consistent with short-term orientations.

Table 7
Theoretical Array Positions for Conservative Industrial Agriculture

No.	Statement	Theoretical Indication	Array Position
Power Distance			
2	Full of political conservatives.	High PD	+5
1	A way to connect to my family.	High PD	-5
Uncertainty Avoidance			
9	Extremely stressful for farmers and ranchers.	High UA	+3
14	Politically incompetent.	Low UA	-3
8	Based on more tradition than science.	High UA	-4
Individualism vs. Collectivism			
19	Awful at accepting people that don't fit the mold.	Individualist	-2
20	Focused on getting the job done at all cost – no excuses.	Individualist	-3
21	Not a career path for intellectuals.	Individualist	-4
Masculine vs. Feminine			
22	A male dominated field.	Masculine	+4
25	A terrible career path if you want to balance your work and your family life.	Feminine	-3
Short-Term vs. Long-Term Orientation			
32	A profession that requires hard work.	Short-Term	+3
33	A major reason why the U.S. is such a huge world power.	Short-Term	+4
Indulgence vs. Restraint			
39	Tough if you aren't self-disciplined.	Restraint	+3
41	Against Pro-LGBTQ Legislation.	Restraint	+2
36	Very satisfying to be involved in.	Restraint	-2
40	Full of overweight people.	Restraint	-3
37	Supportive of modern rights movements like Black Lives Matter.	Restraint	-5

Traditional Agriculture and Hofstede. The Traditional Agriculture array placed statements regarding power distance in a manner consistent with low distances. Statements in support of close families (1, +3) and against corporate structure and profits (6, -5; 4, -4) were arranged supporting low power distances in American agriculture. The third array perceived American agriculture to be a short-term oriented culture, being nationalistic (31, +5), not innovative (35, -2) and hard working (32, +5). Traditional Agriculture did place one long-term orientation statement on politic highly (30, -5). Field notes were taken when asked to explain why

the statement was placed in the (-5) column. The participant stated, “Ag policy is always changing”. Concerning uncertainty avoidance, Traditional Agriculture supported statements indicative of stress (9, +2) and traditions over scientific advancement (8, +2; 10, -3). Traditional Agriculture was indicative of a collectivist culture, placing bonds (18, +3; 15; +3) and working with your hands (16, +3). Yet, there are some individualistic leanings in the importance of task completion (20, +4) and rejecting the notion of in-groups and out-groups (19, -3).

This array configuration perceives a masculine tilt to American agriculture (24, +4), yet believes in a work and family balance indicative of a feminine culture (25, -3). Statements along the center of the array are also mixed, with some agreeance on masculine traits such as gender roles (26, +1; 23, +1) and the rejection of other cultural traits related to masculinity such as welfare and machismo (28, -1; 27, -1). Short-term orientations were again seen in the perceptions of American agriculture as traditions superseded science and technology (10, -3; 8, +2; 9, +2). Elements of a restrained culture were apparent in the array for Traditional Agriculture. Physical restraint (40, -4), and social restraint were seen in the placement of statements concerning current issues (37, -3; 41, -2). During a post sort interview, a respondent explained the restrictive culture of American agriculture as “set in stone”, and that “its hard for people to go to the other side (of an issue)”.

Table 8
Theoretical Array Positions for Traditional Agriculture

No.	Statement	Theoretical Indication	Array Position
Power Distance			
1	A way to connect to my family.	Low PD	+3
4	Controlled by giant corporations.	Low PD	-4
6	Definitely more about money than “feeding the world”	Low PD	-5
Uncertainty Avoidance			
8	Based on more tradition than science.	High UA	+2
9	Extremely stressful for farmers and ranchers.	High UA	+2
10	Accepting of Genetically Modified Organisms.	High UA	-3

No.	Statement	Theoretical Indication	Array Position
Individualism vs. Collectivism			
20	Focused on getting the job done at all costs – no excuses.	Individualist	+4
18	Full of really close-knit families looking out for each other.	Collectivist	+3
15	Stronger when farmers and ranchers stick together.	Collectivist	+3
16	Better for people wanting to work with their hands.	Collectivist	+3
19	Awful at accepting people that don't fit the mold.	Individualist	-3
Masculine vs. Feminine			
24	Old school about gender roles.	Masculine	+4
26	Hard to be respected in as a woman.	Masculine	+1
23	Not for sissies.	Masculine	+1
27	All about muscle and grit.	Feminine	-1
28	Critical of anyone that asks for handouts.	Feminine	-1
25	A terrible career path if you want to balance your work and your family life.	Feminine	-3
Short-Term vs. Long-Term Orientation			
31	Patriotic, like apple pie and the flag.	Short-Term	+5
32	A profession that requires hard work.	Short-Term	+5
35	Innovative and creative.	Short-Term	-2
20	Focused on getting the job done at all costs – no excuses.	Short-Term	-5
Indulgence vs. Restraint			
37	Supportive of modern rights movements like Black Lives Matter.	Restraint	-3
40	Full of overweight people.	Restraint	-4

Conclusions

The purpose of this study was to identify the subjective opinions held by students at a land grant university on the culture of American agriculture. Three distinct perceptions of American agriculture were discovered in the study: (a) *Progressive Agriculture*, (b) *Conservative Industrial Agriculture*, and (c) *Traditional Agriculture*.

Progressive Agriculture presented a view of American agriculture as a result of experience in the field. This perception believed that American agriculture was innovative,

inclusive towards both genders, and perceived familial ties to be important. Per Hofstede's dimensions, the Progressive Agriculturalist cultural view of American agriculture held was at the low end of the uncertainty avoidance dimension, being accepting of new technologies and accepting change. Additionally, the perceived shift from a masculine culture, to that of a feminine one is indicative of more social mobility for students of various cultural and ethnic backgrounds. The Progressive Agricultural view of American agriculture aligned with existing literature focusing on the effects of school based agricultural education programs and experiences in agriculture (Cannon et al., 2006; Mallory & Sommer, 1986; Warren & Alston, 2007). Defining sorters for this perception had the most amount of experience in American agriculture, and was consistent with research findings that experience in the field leads to positive attitudes toward agriculture (Fraze et al., 2011).

An ethnic minority perspective of American agriculture exists within Conservative Industrial Agriculture. These sorters viewed American agriculture as White, socially conservative, and against black activism. Conservative Industrial Agriculture saw the field as male dominated, but not prescribed to gender roles and viewed American agriculture as scientifically driven. In the lens of Hofstede's dimensions, American agriculture was perceived as masculine and restrictive. This perception was tied to past literature on students with little to no agricultural literacy or experiences in American agriculture (Fraze, et al., 2011; Henry, et al., 2014; Jones, et al., 1998). Additionally, the social concepts of the Conservative Industrial Agriculture perception echoes research of ethnic minorities feeling unwelcome in American agriculture (Jordan, 2014; Vincent & Torres, 2015).

Traditional Agriculture viewed American agriculture in an old-fashioned, stereotypical manner. The concepts that highlighted this point of view believed American agriculture to be set in its ways, and resistant to change. Additionally, the perception pointed towards a patriarchal culture, where males are in charge and being a woman can be difficult, as opposed to other

perceptions where a male presence does not mean strict gender roles. Traditional Agriculture was also perceived as family-owned, rejecting ideas of corporations controlling American agriculture. Placing the statements in the theoretical frame paints American agriculture as high in uncertainty avoidance, rejecting technology and masculine per Hofstede's dimensions. Sorters holding this perception posed an alternative view of American agriculture than those pushing for more opportunities to highlight Science, Technology, Engineering and Math (STEM) (Knight, 1987; Norris & Townsend, 1987; Smith & Baggett, 2012), instead supporting the idea that American agriculture is largely manual labor (Knight, 1987).

Implications, Discussion, and Recommendations

The perceptions found in this study echo the results of seminal studies on the image of agriculture such as Mallory and Sommer (1986). Each of the interpretations provides a distinct viewpoint held by students at a land grant university. Additionally, each of the arrays represented an existing phenomenon of beliefs on American agriculture present in the literature, a good predictor of intentions to participate in any given field (Sutphin & Newsom-Stewart, 1995).

Progressive Agriculture is indicative of the results of increased agricultural literacy and experience in the field of agriculture pushed by the literature. The perceptions of the Progressive Agricultural support the literature concerning agricultural involvement at the secondary level, with demographic information for the perception indicating involvement in agricultural education or agricultural experiences (Talbert & Larke, 1995; Warren & Alston, 2007; Wiley et al., 1997). The demographics and views in this perception also push against past beliefs that American agriculture is primarily for white males (Knight, 1987). The interpretation of Progressive Agriculture reinforced the findings of Fraze et al. (2011), which asserts that the level of agricultural literacy held by an individual has a positive relationship with the attitudes held concerning agriculture. Sorters spoke to the breadth of career opportunities in American

agriculture ranging from farm to laboratory. This perception is seen in literature focused on recruiting various populations into American agriculture, especially for non-traditional and minority students (Dyer & Breja, 2003; Smith & Baggett, 2012). As Hofstede's Six Dimensions of National Culture are interpreted in the array, Progressive Agriculture is the most inclusive for students of all ethnicities and genders to enter. Low uncertainty avoidance, a shift from masculine to feminine culture, and a collectivist natured career may appeal to minority students that aim to enter an inclusive field that stakeholders in the individuals life would approve of and encourage for social mobility within their own cultural values.

The Conservative Industrial Agriculture perspective was mostly comprised of ethnic minorities with no agricultural experience, providing a stark view of American agriculture. The interpretation of this viewpoint is consistent with literature on minorities' perceptions of barriers for enrollment in agricultural education. The masculine nature of the field and the views of hard work in both conceptual and theoretical interpretations reinforce past research on the belief that agriculture is mostly manual labor with little to no opportunity for career growth (Henry, et al., 2014; Hoover et al., 1991; Jones et al., 1998; NRC, 1988; Talbert & Larke, 1995; Warren & Alston, 2007). The perception that American agriculture is socially conservative and restrictive per Hofstede's dimensions is an alarming finding. Ethnic minorities that make up this perception believe that American agriculture not inclusive, racist, and close-minded to the struggles of activism for minority struggles. This perception must be addressed if ethnic minorities and underrepresented students are truly a population needed to fill a growing workforce gap within American agriculture and keep the sufficient workforce for the 21st century according to the NRC (1988) and the AAAE (Roberts, et al., 2016).

Traditional Agriculture provided a unique perspective on American agriculture. This view perceived American agriculture in a way indicative of placing the old way of life in agriculture over the modern. Themes of being set in its ways, a patriarchal society and the family-

owned nature of the field point to a rejection of advancing American agriculture. When interpreted within the theoretical frame, high uncertainty avoidance implies the priority of tradition over transformation of American agriculture. The interpretation of this perception leads to a rejection of new ideas such as STEM and the restrictive nature of American agriculture per Hofstede's dimensions point to placing order over free speech (Hofstede, 2001).

Progressive Agriculture seems to be the result of agricultural literacy on students before reaching the post-secondary level. With that being said, two of the perspectives of American agriculture believed that the field was largely manual labor. It is recommended that the practice place an emphasis on agricultural literacy to promote the broad range of available opportunities for all in American agriculture. The profession should also open discourse on certain perceptions of American agriculture. If a diverse workforce is truly a research priority for agricultural education, the male dominated, patriarchal, and restricted subjective opinions found in the Conservative Industrial Agriculture and Traditional Agriculture perceptions should be acknowledged. These perceptions should be addressed through implementing representation for ethnic, female, and LGBTQ groups in agriculture through media, role model development, and peer support groups.

Additional Q methodological studies should be conducted in order to continue the study of subjective opinions on agriculture before students reach the post-secondary level. The participants of this study have already chosen a career path. Identifying the perceptions students' hold before secondary education may provide findings related to the views held about agriculture as a career and way of life. Further research should be conducted on cultural perspectives of agriculture, and the cultural backgrounds of the students themselves. Culture is tied to the past-lived experiences of the student and the stakeholders in the student's life that imparts cultural knowledge at home (Suarez-Orozco, 1987). Anderson (2006) asserts that parents are a large part of the decision making process for the future careers of student. Research should be conducted to

understand the cultural values of the student and the parental influences in their lives. Along with the institutions own-formed culture, the students' cultural origins help shape student perceptions once they are enrolled at an institution of higher education (Museus & Quaye, 2009). Understanding the cultural background of the student at the institution is a key to professional and social success (Kuh, 2001; Museus & Quaye, 2009). Research should be conducted in order to identify the cultural leanings of students themselves, and any dissonance between their cultural upbringing and the perceptions held about American agriculture.

REFERENCES

Anderson, J. C. (2006). Insights for recruiting underrepresented individuals into careers in agriculture, food and natural resources. *The Agricultural Education Magazine,78*(5), 11-13.

Balschweid, A. M., Thompson, W. G., & Cole, L. R. (1998). The effects of an agricultural literacy treatment on participating K-12 teachers and their curricula. *Journal of Agricultural Education, 39*(4), 1-10. doi: 10.5032/jae.1998.04001

Birkenholz, J. R., Harris, R. C., & Pry, W. H. (1994). A pilot study: Assessment of agricultural literacy among college students. *NACTA Journal, 38*(1)*,* 63-66. Retrieved from http://www.jstor.org/stable/43764991

Brandt, M., Forbes, C., & Keshwani, J. (2017). Exploring elementary students' scientific knowledge of agriculture using evidence-centered design. *Journal of Agricultural Education, 58*(3), 134-149. doi: 10.5032/jae.2017.03134

Brown, S. R. (1980). *Political subjectivity: Applications of Q methodology in political science.* London: Yale University Press.

Cannon, G. J., Broyles, W. T., Seibel, G. A., & Anderson, R. (2009). Summer enrichment programs: Providing agricultural literacy and career exploration to gifted and talents students. *Journal of Agricultural Education, 50*(2), 26-37. doi: 10.5032/jae.2009.02026

Carnevale, A. P., & Desrochers, D. M. (2003). Preparing students for the knowledge economy: What school counselors need to know. *Professional School Counseling*, *6*(4), 228-236.

Chinese Culture Connection. (1987). Chinese values and the search for culture-free dimensions of culture. *Journal of cross-cultural psychology*, *18*(2), 143-164.

Colbath, A. S., & Morrish, G. D. (2010). What do college freshmen know about agriculture? An evaluation of agricultural literacy. *NACTA Journal, 54*(3)*,* 14-17. Retrieved from http://www.jstor.org/stable/nactajournal.54.3.14

Conroy, C. A., Scanlon, D. C., & Kelsey, K. D. (1998). Influences on adolescent job choice: Implications for teaching career awareness in agricultural education. *Journal of Agricultural Education,39*(2), 30-38. doi: 10.5032/jae.1998.02030

Dale, C., Robinson, J. S., & Edwards, M. C. (2017). An assessment of the agricultural literacy of incoming freshmen at a land-grant university. *NACTA Journal, 61*(1), 7-13. Retrieved from https://www.nactateachers.org/index.php/volume-61-number-1-march2017

Dobson, P., & Gelade, A. G. (2012). Exploring the roots of culture using spatial autocorrelation. *Cross-Cultural Research, 46*(2), 160-187. doi: 10.1177/1069397111430460

Dyer, E. J., & Breja, M. L., (2003). Problems in recruiting students into agricultural education programs: A delphi study of agriculture teacher perceptions. *Journal of Agricultural Education, 44*(2), 75-85. doi: 10.5032/jae.2003.02075

Dyer, E. J., Breja, M. L., & Ball, L. A. (2003) A delphi study of agriculture teacher perceptions of problems in student retention. *Journal of Agricultural Education, 44*(2), 86-95. doi: 10.5032/jae.2003.02086

Esters, T. L., & Bowen, E. B. (2005). Factors influencing career choices of urban agricultural education students. *Journal of Agricultural Education, 46*(2), 24-35. doi: 10.5032/jae.2005.02024

Fraze, L. B., Wingenbach, G., Rutherford, T., & Wolfskill, L. A. (2011). Effects of a recruitment workshop on selected urban high school students' self-efficacy and attitudes toward agriculture as a subject, college major, and career. *Journal of Agricultural Education,52*(4), 123-135. doi: 10.5032/jae.2011.04123

Frick, J. M., Kahler, A. A., & Miller, W. W. (1991). A definition and the concepts of agricultural literacy. *Journal of Agricultural Education, 32*(2), 49-57. doi: 10.5032/jae.1991.02049

Gibson, M. M. (1998). Promoting Academic Success Among Immigrant Students: Is Acculturation the Issue. *Educational Policy,12*(6), 615-633. doi: 10.1177/0895904898012006002

Goecker, A. D., Smith, E., Fernandez, J. M., Ali, R., & Theller, R. G. (2015). Employment opportunities for college graduates in food, agriculture, renewable natural resources, and the environment, United States, 2015-2020. Retrieved from https://www.purdue.edu/usda/employment/

Goecker, A.D., Gilmore J.L., Smith E., & Smith P.G. (2005). *Employment opportunities for college graduates in the U.S. food, agricultural, and natural resources system: 2005 2010*. West Lafayette: United States Department of Agriculture's Cooperative State Research, Education, and Extension Service and Purdue University.

González, P. K. (2002). Campus culture and the experiences of Chicano students in a predominantly white university. *Urban Education, 37*(2), 193-218. doi: 10.1177/0042085902372003

Henry, K. A., Talbert, B. A., & Morris, P. V. (2014). Agricultural education in an urban charter school: Perspectives and challenges. *Journal of Agricultural Education,55*(3), 89-102. doi: 10.5032/jae.2014.03089

Hodge, E. A., & Mellin, A. E. (2011). First-generation college students: The influence of family on the college experience. *The Penn State McNair Journal*, 7, 120-134. Retrieved from http://forms.gradsch.psu.edu/diversity/mcnair/mcnair_jrnl2010/files/Hodge.pdf

Hoover, T. S., & Scanlon, D. C. (1991). Enrollment issues in agricultural education programs and FFA membership. *Journal of Agricultural Education,32*(4), 2-10. doi: 10.5032/jae.1991.04002

Hofstede, G. (1980). *Culture's consequences.* London: SAGE Publications Ltd.

Hofstede, G. (1997). *Cultures and organizations: Software of the mind.* (2nd ed.). New York: The McGraw Hill.

Hofstede, G. (2001). *Cultures consequences*. (2nd ed.) London: Sage.

Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings In Psychology and Culture, 2*(1). doi: 10.9707/2307-0919.1014

Hofstede, G., & Hofstede, G. J. M. Minkov (2010). *Cultures and organizations: Software of the mind.* New York: McGraw-Hill.

Hofstede, G., & Bond, M. H. (1988). The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics, 16*(4), 5-21. doi: 10.1016/0090-2616(88)90009-5

Hurtado, S. (1992). The campus racial climate: Context of conflict. *The Journal of Higher Education, 63*(5), 539-569. doi: http://www.jstor.org/stable/1982093

Jones, K. R., Bowen, B. E., & Rumberger, C. L. (1998). Influence of student and school factors on African American enrollment in agricultural science courses. *Journal of Agricultural Education,39*(2), 39-49. doi: 10.5032/jae.1998.02019

Jordan, C. P. (2014). Examining the african-american perception of agriculture: Views of students attending an 1862 land-grant institution (Order No. 1600416). Available from Dissertations & Theses @ Oklahoma State University - Stillwater; ProQuest Dissertations & Theses Global. (1732168741). Retrieved from http://argo.library.okstate.edu/login?url=https://search.proquest.com/docview/1732168741?accountid=4117

Knight, J. A. (1987). Recruiting and retaining students: A challenge for vocational agriculture. *The Agricultural Education Magazine,60*(1), 9-10.

Knobloch, A. N., Ball, L. A., & Allen, C. (2007). The benefits of teaching and leaerning about agriculture in elementary and junior high schools. *Journal of Agricultural Education, 48*(3), 25-36. doi: 10.5032/jae.2007.03025

Kovar, A. K., & Ball, L. A. (2013). Two decades of agricultural literacy research: A synthesis of the literature. *Journal of Agricultural Education, 54*(1), 167-178. doi: 10.5032/jae.2013.01167

Kroeber, A. L., & Parsons, T. (1958). The concepts of culture and of system. *American Sociological Review, 23, 582-583.* Retrieved from http://www.jstor.org/stable/2088917

Kuh, D. G. (2001). Organizational culture and student persistence: Prospects and puzzles. *Journal of College Student Retention, 3*(1), 23-29. doi: 10.2190/U1RN-C0UU-WXRV-0E3M

Kuh. G. D., and Love, P.G. (2000). A Cultural Perspective on Student Departure. In *Reworking the Student Departure Puzzle*, 196-212. Nashville, TN: Vanderbilt University Press.

Kuh, D. G., Kinzie, J., Buckley, A. J., Bridges, K. B., & Hayek, C. J. (2006). What matters to student success: A review of the literature. *Commissioned Report for the National Symposium on Postsecondary Student Success: Spearheading a Dialog on Student Success,* 1-151.

Kuh, D. G. & Whitt, E. J. (1988). *The Invisible Tapestry: Culture in American Colleges and Universities.* Washington D. C.: Association for the Study of Higher Education.

Leising, J. G., & Zilbert, E. E. (1994). Validation of the California agriculture literacy framework. *Proceedings of the National Agricultural Education Research Meeting*, USA, 21, 112-119.

Luft, V. D. (1996). Extent to which cultural diversity is addressed in secondary agricultural education. *Journal of Agricultural Education,37*(3), 67-75. doi: 10.5032/jae.1996.03067

Mallory, M. E., & Sommer, R. (1986). Student images of agriculture: Survey highlights and recommendations. *Journal of the American Association of Teacher Educators in Agriculture,27*(4), 15-17. doi: 10.5032/jaatea.1986.04015

McKeown, B., & Thomas, B. D. (2013). *Q methodology* (2nd ed.). Los Angeles: Sage.

Mead, M. L. (2015). The primary contest: Why culture matters. *Society*, *52*(6), 527-532. doi: 10.1007/s12115-015-9943-x

Meischen, L. D., & Trexler, J. C. (2003). Rural elementary students' understandings of science and agricultural education benchmarks related to meat and livestock. *Journal of Agricultural Education, 44*(1), 43-55. doi: 10.5032/jae.2003.01043

Minkov, M. (2007). What makes us different and similar: A new interpretation of the world values survey and other cross-cultural data. Bulgaria: Klasika i Stil.

Minkov, M., & Hofstede, G. (2012). Is national culture a meaningful concept? Cultural values delineate homogeneous national cultures of in-country regions. *Cross-Cultural Research, 46*(2), 133-159. doi: 10.1177/1069397111427262

Museus, D. S., & Quaye, J. S. (2009). Toward an intercultural perspective of racial and ethnic minority college student persistence. *The Review of Higher Education, 33*(1), 67-94. doi: 10.1353/rhe.0.0107

National Center for Educational Statistics. (1993). *The condition of education,* Washington DC: U.S. Department of Education.

National Center for Educational Statistics. (2016). *The condition of education,* Washington DC: U.S. Department of Education.

National Research Council (1988). Understanding agriculture: New directions for education.

Newman, R. P., & Newman, M. B. (1999). What does it take to have positive impact on minority students' college retention? *Adolescence, 34*(135). 483-492. Retrieved from https://search.proquest.com/docview/195945050/fulltext/10A7144EBF18475CPQ/1?accountid=4117

Nora, A., & Cabrera, F. A. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. *The Journal of Higher Education, 67*(2), 119-148. Retrieved from http://www.jstor.org/stable/pdf/2943977

Norris, R. J., & Townsend, J. (1987). Coping with declining enrollment. *The Agricultural Education Magazine,60*(1), 7-8.

Ogbu, J. U. (2004). Collective identity and the burden of "acting white" in black history, community, and education. *The Urban Review,36*(1), 1-35. Retrieved from 10.1023/B:URRE.0000042734.83194.f6

Ogbu, J. U., & Simons, H. D. (1998). Voluntary and involuntary minorities: A cultural ecological theory of school performance with some implications for education. *Anthropology & Education Quarterly,29*(2), 155-187. Retrieved from https://faculty.washington.edu/rsoder/EDUC305/OgbuSimonsvoluntaryinvoluntary.pdf

Peterson, M. W., & Spencer, M. G. (1990). Understanding academic culture and climate. *New directions for institutional research*, *1990*(68), 3-18.

Pense, L. S., & Leising, G. J. (2004). An assessment of food and fiber systems knowledge in selected Oklahoma high schools. *Journal of Agricultural Education, 45*(3), 86-96. doi: 10.5032/jae.2004.03086

Pense, L. S., Leising, G. J., Portillo, T. M., & Igo, G. C. (2005). Comparative assessment of student agricultural literacy in selected agriculture in the classroom programs. *Journal of Agricultural Education, 46*(3), 107-118. doi: 10.5032/jae.2005.03107

Powell, D., Agnew, D., Trexler, C. (2008). Agricultural literacy: Clarifying a vision for practical application. *Journal of Agricultural Education, 49*(1), 85-98. doi:10.5032/jae.2008.01085

Racial/ethnic enrollment in public schools. (2016). *The Condition of Education,* 1-3.

Rawls, J. W. (1980). Parental perceptions of the benefits vocational agriculture students derive from supervised occupational experience. *Journal of the American Association of Teacher Educators in Agriculture, 21*(3), 14-17. doi: 10.5032/jaatea.1980.03014

Rendon, L. I., Jalomo, R. E., & Nora, A. (2000). Theoretical considerations in the study of minority student retention in higher education. *Reworking the student departure puzzle, 1,* 127-156.

Roberts, T. G., Harder, A., & Brashears, M. T. (Eds). (2016). American Association for Agricultural Education national research agenda: 2016-2020. Gainesville, FL: Department of Agricultural Education and Communication.

Rodriguez, M. T., & Lamm, A. J. (2016). Identifying student cultural awareness and perceptions of different cultures. *Journal of Agricultural Education,57*(2), 106-118. doi: 10.5032/jae.2016.02106

Smith, S. S., & Baggett, D. C. (2012). Perceptions of agriculture and perceived enrollment barriers to agricultural programs of select southern new jersey high school students. *NACTA Journal, 56*(1), 48-56. Retrieved from https://www.nactateachers.org/index.php/vol-56-num-1-mar-2012

Sergiu, I. P. (2011). Specific approaches in cross cultural management research in Geert Hofstede's studies. *Communicatio, 5*(1), 33-39. Retrieved from http://journals.univ-danubius.ro/index.php/communicatio/article/view/1069/862

Schmolck, P. (2014). The QMethod Page. Retrieved from http://schmolck.userweb.mwn.de/qmethod/

Spindler, G. D. (1997). Why have minority groups in north america been disadvantaged by their schools? In *Education and Cultural Process* (3rd ed., pp. 96-109). Long Grove, IL: Waveland Press Inc.

Stubbs, E. A., & Myers, B. E. (2015). Multiple case study of STEM in school-based agricultural education. *Journal of Agricultural Education,56*(2), 188-203. doi: 10.5032/jae.2015.02188

Suarez-Orozco, C., & Suarez-Orozco, M. (2002). Rethinking immigration. In *Children of Immigration* (1st ed., pp. 36-57). Harvard University Press.

Suarez-Orozco, M. M. (1987). "Becoming Somebody": Central american immigrants in inner city schools. *Anthropology & Education Quarterly,18*(4), 287-299. Retrieved from http://www.jstor.org/stable/pdf/3216658

Sutphin, H. D., & Newsom-Stewart, M. (1995). Student's rationale for selection of agriculturally related courses in high school by gender and ethnicity. *Journal of Agricultural Education, 36*(2). 54-61. doi: 10.5032/jae.1995.02054

Swidler, A. (1986). Culture in action: Symbols and strategies. *American Sociological Review, 51*(2), 273-286. Retrieved from http://www.jstor.org/stable/2095521

Talbert, A., Larke, A., & Jones, W. (1999). Using a Student Organization to Increase Participation and Success of Minorities in Agricultural Disciplines. *Peabody Journal of Education,74*(2), 90-104. Retrieved from http://www.jstor.org/stable/1493078

Talbert, B. A., & Larke, A., Jr. (1995). Factors influencing minority and non-minority students to enroll in an introductory agriscience course in Texas. *Journal of Agricultural Education,36*(1), 38-45. doi: 10.5032/jae.1995.01038

Terry, R., Herring, R. D., & Larke, A. (1992). *The Journal of Agricultural Education, 33*(2), 51-60. doi: 10.5032/jae.1992.02051

Trexler, C. (2000). Conversational literacy: A moving target that has yet to be defined. *The Agricultural Education Magazine, 73*(1).

Trexler, C. J., & Hess, A. J. (2004). 15 years of agricultural literacy research: Has the profession only focused on a particular picture of what it means to be literate? *Proceedings of the 23rd Annual Western Region Agricultural Education Research Conference*, 12-22.

Trexler, J. C., & Suvedi, M. (1998). Perception of agriculture as a context for elementary science teaching: A case of change in Sanilac County, Michigan. *Journal of Agricultural Education, 39*(4), 28-36. doi: 10.5032/jae.1998.04028

Vallera, L. F., & Bodzin, M. A. (2016). Knowledge, skills, or attitudes/beliefs: The contexts of agricultural literacy in upper-elementary science curricula. *Journal of Agricultural Education, 57*(3), 101-117. doi: 10.5032/jae.2016.04101

Vincent, S. K., & Torres, R. M. (2015). Multicultura competence: A case study of teachers and their student perceptions. *Journal of Agricultural Education,56*(2), 64-75. doi: 10.5032/jae.2015.02064

Warren, K. C., & Alston, J. A. (2007). An analysis of diversity inclusion in North Carolina secondary agricultural education programs. *Journal of Agricultural Education, 48*(2), 66-78. doi: 10.5032/jae.2007.02066

Watts, S., & Stenner, P. (2005). Doing Q methodology: Theory, method, and interpretation. *Qualitative Research in Psychology, 2,* 67-91. doi: 10.1191/1478088705qp022oa

Watts, S., & Stenner, P. (2012). *Doing Q methodological research: Theory, method, and interpretation.* London: Sage.

Wiley, Z. Z., Bowen, B. E., Bowen, C. F., & Heinsohn, A. L. (1997). Attitude formation of ethnic minority students toward the food and agricultural sciences. *Journal of Agricultural Education,38*(2), 21-29. doi: 10.5032/jae.1997.02021

Willerman, B. & Swanson, L. (1953). Group prestige in voluntary organizations: A study of college sororities. *SAGE Social Sciences Collection, 6*(1). https://doi.org/10.1177/001872675300600104

Wold, S., Esbensen, K., & Geladi, P. (1987). Principle component analysis. *Chemometrics and Intelligent Laboratory Systems, 2*(1-3), 37-52. doi: 10.1016/0169-7439(87)80084-9

Zurbrick, R. P. (1990). Agricultural literacy – why! *The Agricultural Education Magazine, 62*(8), 3.

APPENDICES

APPENDIX A

IRB APPROVAL

Oklahoma State University Institutional Review Board

Date:	Thursday, December 7, 2017
IRB Application No	AG1756
Proposal Title:	The Culture of Agriculture: A Q-Study of Perspectives of Agriculture
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 12/6/2020

Principal Investigator(s):

Jorge Gonzalez
Stillwater, OK 74078

Marshall A. Baker
458 Ag Hall
Stillwater, OK 74078

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 section 45 CFR 46.

☐ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. 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 submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, 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 adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4.Notify the IRB office in writing when your research project is complete.

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 Dawnett Watkins 219 Scott Hall (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,

Hugh Crethar, Chair
Institutional Review Board

APPENDIX B

IRB MODIFICATION APPROVAL

Oklahoma State University Institutional Review Board

Date:	Tuesday, December 19, 2017	**Protocol Expires: 12/6/2020**
IRB Application No:	AG1756	
Proposal Title:	The Culture of Agriculture: A Q-Study of Perspectives of Agriculture	
Reviewed and Processed as:	Exempt **Modification**	

Status Recommended by Reviewer(s) **Approved**

Principal Investigator(s):

Jorge Gonzalez
Stillwater, OK 74078

Marshall A. Baker
458 Ag Hall
Stillwater, OK 74078

The requested modification to this IRB protocol has been approved. Please note that the original expiration date of the protocol has not changed. The IRB office MUST be notified in writing when a project is complete. All approved projects are subject to monitoring by the IRB.

☐ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

The reviewer(s) had these comments:

The following modifications are approved:
1. Changes in Q-Sort questions
2. Demographics - Remove Name and Date of Birth
3. Demographics - Add Age, Code Name, & Experience in Agriculture

Signature :

Hugh Crethar, Chair, Institutional Review Board

Tuesday, December 19, 2017
Date

APPENDIX C

STUDY INFORMATION

Research Study
The Culture of Agriculture
2017

Our research team is investigating the perceptions of the culture of agriculture in and outside the College of Agricultural Sciences and Natural Resources at Oklahoma State University. We would like to invite you to participate in our study, which will require about 30 minutes of your time. You will be asked to read several statements and sort them according to how they reflect your opinions on agriculture.

To sign up for the study contact:

Jorge Gonzalez: [redacted]; [redacted]

Consistent with previous research in this area, we will request your permission to find out descriptors of demographic information (e.g. age, gender, etc.). No names will be given or used in any way. The information you submit can only be accessed by our research team and will remain private. All data collected in this study will remain strictly confidential and only group results will be reported. Risks associated with participating in this study are no greater than any faced in daily life.

Questions?

Dr. Marshall Baker: [redacted]

APPENDIX D

INFORMATION ABOUT THE STUDY

INFORMATION ABOUT STUDY

Project Title: The Culture of Agriculture: A Q Methodology Study on Perspectives of American Agriculture

Investigators: Jorge Gonzalez, Graduate Teaching Assistant at Oklahoma State University

Purpose: The purpose of this study is to better understand the perceptions held by students concerning the culture of American agriculture inside and outside of the College of Agricultural Sciences and Natural Resources at Oklahoma State University.

Procedures: You will be asked to complete a Q-sort, which involves reading several statements and sorting them into categories based on the extent to which the statements reflect your opinions. You will then be asked to record your results on a Record Sheet. After the sort, you will complete a short survey that has demographic questions about you. All of this should last about 30 minutes. If you choose to provide a first name or code name and phone number, you may be called to discuss study results from your perspective. The call will last about ten minutes.

Risks of Participation: There are no known risks associated with this project that are greater than those ordinarily encountered in daily life.

Benefits: The results of this study will aid both agricultural education and those recruiting diverse populations in agricultural careers. Understanding perceptions allows those involved in agriculture to work with and change different perspectives of agriculture. In the end, knowing the perspectives held by different populations concerning agriculture can help recruit a diverse workforce for American agriculture.

Confidentiality: You are not asked to provide a signed copy of this form so that no names are collected from you, thereby reducing your risk in participation. Please keep a copy for your records. Your responses on both the sort and the survey are confidential. No names or other identifying information will be attached to your packet and only aggregate data will be reported in the final product. The data will be securely stored in a locked file cabinet in the researcher's office. The paper copies will be destroyed one year after the completion of the study. Only the researchers will have access to the information that is stored electronically in

encrypted files without any identifying information, and it will be destroyed five years from completion of the study.

The OSU IRB has the authority to inspect records and data files to assure compliance with approved procedures.

Contacts: Please feel free to contact the researcher or his advisor at Oklahoma State University (Stillwater, OK 74078) if you have questions or concerns about this research project.

Jorge Gonzalez, [redacted];
Marshall A. Baker, [redacted];

For information on participants' rights, contact, Dawnett Watkins, IRB Manager, 219 Scott Hall, Stillwater, OK 74078, 405.744.5700 or irb@okstate.edu.

APPENDIX E

Q STATEMENTS AND RANKINGS

No.	Statement	Perception		
		1	2	3
1	A way to connect to my family.	+2	-5	+3
2	Full of political conservatives.	-1	+5	+2
3	Exploiting farm laborers.	-2	-1	-2
4	Controlled by giant corporations.	-2	+1	-4
5	A tough way to make a living in the world.	0	0	-1
6	Definitely more about money than "feeding the world".	-4	-1	-5
7	Full of good ol' boys.	+1	+4	+2
8	Based on more tradition than science.	-3	-4	+2
9	Extremely stressful for farmers and ranchers.	+2	+3	+2
10	Accepting of Genetically Modified Organisms.	+3	+1	-3
11	Big on safety.	+3	-1	0
12	Against government regulation.	-3	+2	-1
13	At the cutting edge of harvesting technology.	+4	+2	0
14	Politically incompetent.	+1	-3	-4
15	Stronger when farmers and ranchers stick together.	-1	+3	+3
16	Better for people wanting to work with their hands.	+2	0	+3
17	Easier to get into if you look like everyone else involved in it.	-1	+1	+1
18	Full of really close-knit families looking out for each other.	+2	+1	+3
19	Awful at accepting people that don't fit the mold.	-4	-2	-3
20	Focused on getting the job done at all costs – no excuses.	+1	-3	+4
21	Not a career path for intellectuals.	-5	-4	-2
22	A male dominated field.	-1	+4	+4
23	Not for sissies.	0	-1	+1
24	Old school about gender roles.	-2	-1	+4
25	A terrible career path if you want to balance your work and family life.	-5	-3	-3
26	Hard to be respected in as a woman.	-1	0	+1
27	All about muscle and grit.	0	-2	-1
28	Critical of anyone that asks for handouts.	-1	0	-1
29	Reflects what big companies like Monsanto are working on in their labs.	0	0	0
30	Will not be affected by politics in the long run.	0	-4	-5
31	Patriotic, like apple pie and the flag.	+2	+4	+5
32	A profession that requires hard work.	+5	+5	+5
33	A major reason why the U.S. is such a huge world power.	+4	+3	-1
34	Dependent on serious financial investment.	+1	+1	+1
35	Innovative and creative.	+5	+2	-2
36	Very satisfying to be involved in.	+3	-2	0
37	Supportive of modern rights movements like Black Lives Matter.	0	-5	-3
38	Agitated by anyone that tries to change their way of life.	-2	0	+1
39	Tough if you aren't self-disciplined.	+3	+3	0
40	Full of overweight people.	-4	-3	-4
41	Against Pro-LGBTQ Legislation.	-3	+2	-2
42	Apathetic about animal rights.	+1	-2	0

APPENDIX F

RESEARCHER'S SCRIPT

Researcher's Script: Directions for Sorting Q Statements

Thank you for agreeing to participate in this study. Please make sure you have the materials in front of you. You should have a Form Board and an envelope containing 42 cards, each with a statement printed on it describing thoughts about American agriculture. You will need a pencil later.

Step 1: Please read through the statements and sort them into three (3) piles according to the question: **"In your opinion, American agriculture is…"**

The pile on your right are those statements that are **most like** what you think about the question and the pile on your left are those statements that are **most unlike** what you think about the question. Put any cards that you don't have strong feelings about in a middle pile.

Step 2: Now that you have three piles of cards, start with the pile to your right, the "most like" pile and **select** two cards from this pile that are **most like** your response to the question and place them in the two (2) spaces at the far right of the Form Board in front of you in column 11. The order of the cards within the column does not matter.

Step 3: Next, from the pile to your left, the "most unlike" pile, **select** the two (2) cards that are **most unlike** your response to the question and place them in the two (2) spaces at the far left of the Form Board in front of you in column 1.

Step 4: Now, go back to the "most like" pile on your right and select the three (3) cards from those remaining in your **most like** pile and place them into the three (3) open spaces in column 10.

Step 5: Now, go back to the "most unlike" pile on your right and select the three (3) cards from those remaining in your **most unlike** pile and place them into the three (3) open spaces in column 2.

Step 6: Working back and forth, continue placing cards onto the Form Board until all of the cards have been placed into all of the spaces.

Step 7: Once you have placed all the cards on the Form Board, feel free to rearrange the cards until the arrangement best represents your opinions.

Step 8: Record the number of the statement on the Record Sheet.

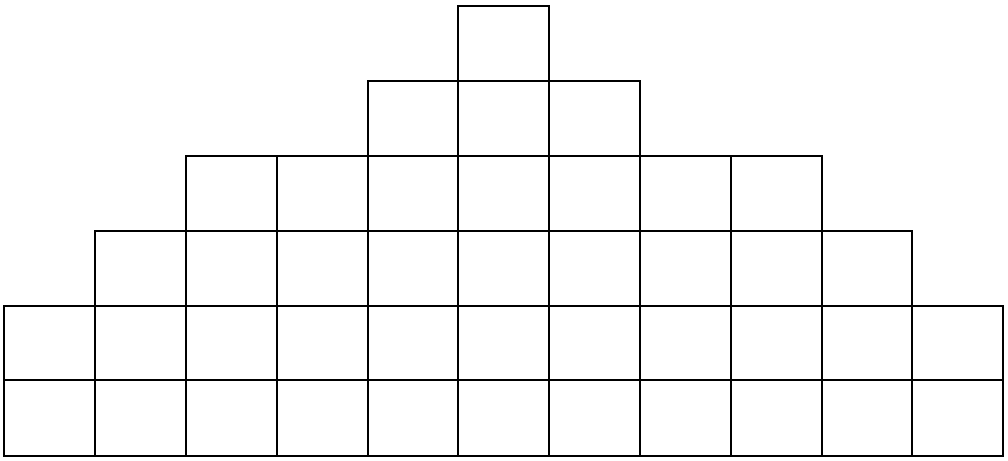
Finally, please complete the survey printed on the back of the Record Sheet and add any comments.

Thank you for your participation!

APPENDIX G

RECORD SHEET

Record Sheet



IN YOUR OPINION, AMERICAN AGRICULTURE IS…

Most UNLIKE Me Most LIKE Me

APPENDIX H

DEMOGRAPHIC SURVEY

Demographic Survey

1. What is your gender (check one)? _____Female _____Male

2. Are you enrolled in the College of Agricultural Sciences and Natural Resources? Y / N

3. Please check the item that best describes your ethnicity. Check all that apply.
   _____African American _____Asian American
   _____Hispanic/Latino(a) _____American Indian
   _____White _____Other, please specify:
   _____

4. My hometown is (circle one):
   a) Urban (50,000 and above)
   b) Suburban (2,500 to 50,000)
   c) Rural (2,500 and below)

5. What type of degree are you currently seeking (check one)?
   _____Associate's Degree _____Master's Degree
   _____Bachelor's Degree _____Other, please specify: _____
   _____Doctorate Degree

6. Have you had exposure or experiences in regards to agriculture?

7. Have you ever worked in agriculture? Yes / No

   a. If yes, how many years? _____

8. Were you involved with agricultural education/FFA in high school? Yes / No

9. How likely would you be to work in agriculture in the future?

   1 2 3 4 5 6 7 8 9 10

   Never Definitely

10. 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 _____

APPENDIX I

POST SORT TELEPHONE INTERVIEW SCRIPT

Post Sort Telephone Interview Script

Someone at this number with a code name or first name of _____ participated in a research project sorting statements about emergency response recently. May I talk to him/her?

Thank you for agreeing to participate in this study and for consenting to a follow up interview. This interview should only take about ten minutes, is this a good time for you?

One of the things that the aggregate results of the study has shown is that people who sorted like you _____.

What do you think of this?

Repeat as necessary.

Thank you again for your participation!

Bye!

APPENDIX J

RESEARCH CALL

PEOPLE NEEDED FOR RESEARCH STUDY

The purpose of this study is to better understand the perceptions held by students concerning the culture of American agriculture inside and outside of the College of Agricultural Sciences and Natural Resources at Oklahoma State University.

If you are interested in participating, please contact:

Jorge Gonzalez
jorge.e.gonzalez@okstate.edu
[redacted]

APPENDIX K

ARRAY FIGURES FOR EACH PERSPECTIVE OF AMERICAN AGRICULTURE

PROGRESSIVE AGRICULTURE POWER DISTANCE
IN MY OPINION, AMERICAN AGRICULTURE IS…

					27 All about muscle and grit.					
				22 A male dominated field.	37 Supportive of modern rights movements like Black Lives Matter.	34 Dependent on serious financial investment.				
		12 Against government regulation.	24 Old school about gender roles.	17 Easier to get into if you look like everyone else involved in it.	5 A tough way to make a living in the world.	16 Better for people wanting to work with their hands.	1 A way to connect to my family.	36 Very satisfying to be involved in.		
	40 Full of overweight people.	41 Against Pro-LGBTQ Legislation.	4 Controlled by giant corporations.	2 Full of political conservatives.	29 Reflects what big companies like Monsanto are working on in their labs.	7 Full of good ol' boys.	31 Patriotic, like apple pie and the flag.	11 Big on safety.	13 At the cutting edge of harvesting technology.	
21 Not a career path for intellectuals.	19 Awful at accepting people that don't fit the mold.	14 Politically incompetent.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	30 Will not be affected by politics in the long run.	42 Apathetic about animal rights.	18 Full of really close-knit families looking out for each other.	39 Tough if you aren't self-disciplined.	15 Stronger when farmers and ranchers stick together.	32 A profession that requires hard work.
25 A terrible career path if you want to balance your work and your family.	6 Definitely more about money than "feeding the world".	8 Based more on tradition than science.	38 Agitated by anyone that tries to change their way of life.	28 Critical of anyone that asks for handouts.	23 Not for sissies.	20 Focused on getting the job done at all costs – no excuses.	9 Extremely stressful for farmers and ranchers.	10 Accepting of genetically modified organisms.	33 A major reason why the U.S. is such a huge world power.	35 Innovative and creative.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

PROGRESSIVE AGRICULTURE INDIVIDUALISM
IN MY OPINION, AMERICAN AGRICULTURE IS…

					27 All about muscle and grit.					
				22 A male dominated field.	37 Supportive of modern rights movements like Black Lives Matter.	34 Dependent on serious financial investment.				
		12 Against government regulation.	24 Old school about gender roles.	17 Easier to get into if you look like everyone else involved in it.	5 A tough way to make a living in the world.	16 Better for people wanting to work with their hands.	1 A way to connect to my family.	36 Very satisfying to be involved in.		
	40 Full of overweight people.	41 Against Pro-LGBTQ Legislation.	4 Controlled by giant corporations.	2 Full of political conservatives.	29 Reflects what big companies like Monsanto are working on in their labs.	7 Full of good ol' boys.	31 Patriotic, like apple pie and the flag.	11 Big on safety.	13 At the cutting edge of harvesting technology.	
21 Not a career path for intellectuals.	19 Awful at accepting people that don't fit the mold.	14 Politically incompetent.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	30 Will not be affected by politics in the long run.	42 Apathetic about animal rights.	18 Full of really close-knit families looking out for each other.	39 Tough if you aren't self-disciplined.	15 Stronger when farmers and ranchers stick together.	32 A profession that requires hard work.
25 A terrible career path if you want to balance your work and your family.	6 Definitely more about money than "feeding the world".	8 Based more on tradition than science.	38 Agitated by anyone that tries to change their way of life.	28 Critical of anyone that asks for handouts.	23 Not for sissies.	20 Focused on getting the job done at all costs – no excuses.	9 Extremely stressful for farmers and ranchers.	10 Accepting of genetically modified organisms.	33 A major reason why the U.S. is such a huge world power.	35 Innovative and creative.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

PROGRESSIVE AGRICULTURE INDULGENCE
IN MY OPINION, AMERICAN AGRICULTURE IS…

					27 All about muscle and grit.					
				22 A male dominated field.	37 Supportive of modern rights movements like Black Lives Matter.	34 Dependent on serious financial investment.				
		12 Against government regulation.	24 Old school about gender roles.	17 Easier to get into if you look like everyone else involved in it.	5 A tough way to make a living in the world.	16 Better for people wanting to work with their hands.	1 A way to connect to my family.	36 Very satisfying to be involved in.		
	40 Full of overweight people.	41 Against Pro-LGBTQ Legislation.	4 Controlled by giant corporations.	2 Full of political conservatives.	29 Reflects what big companies like Monsanto are working on in their labs.	7 Full of good ol' boys.	31 Patriotic, like apple pie and the flag.	11 Big on safety.	13 At the cutting edge of harvesting technology.	
21 Not a career path for intellectuals.	19 Awful at accepting people that don't fit the mold.	14 Politically incompetent.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	30 Will not be affected by politics in the long run.	42 Apathetic about animal rights.	18 Full of really close-knit families looking out for each other.	39 Tough if you aren't self-disciplined.	15 Stronger when farmers and ranchers stick together.	32 A profession that requires hard work.
25 A terrible career path if you want to balance your work and your family.	6 Definitely more about money than "feeding the world".	8 Based more on tradition than science.	38 Agitated by anyone that tries to change their way of life.	28 Critical of anyone that asks for handouts.	23 Not for sissies.	20 Focused on getting the job done at all costs – no excuses.	9 Extremely stressful for farmers and ranchers.	10 Accepting of genetically modified organisms.	33 A major reason why the U.S. is such a huge world power.	35 Innovative and creative.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

PROGRESSIVE AGRICULTURE LONG TERM ORIENTATION
IN MY OPINION, AMERICAN AGRICULTURE IS…

					27 All about muscle and grit.					
				22 A male dominated field.	37 Supportive of modern rights movements like Black Lives Matter.	34 Dependent on serious financial investment.				
		12 Against government regulation.	24 Old school about gender roles.	17 Easier to get into if you look like everyone else involved in it.	5 A tough way to make a living in the world.	16 Better for people wanting to work with their hands.	1 A way to connect to my family.	36 Very satisfying to be involved in.		
	40 Full of overweight people.	41 Against Pro-LGBTQ Legislation.	4 Controlled by giant corporations.	2 Full of political conservatives.	29 Reflects what big companies like Monsanto are working on in their labs.	7 Full of good ol' boys.	31 Patriotic, like apple pie and the flag.	11 Big on safety.	13 At the cutting edge of harvesting technology.	
21 Not a career path for intellectuals.	19 Awful at accepting people that don't fit the mold.	14 Politically incompetent.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	30 Will not be affected by politics in the long run.	42 Apathetic about animal rights.	18 Full of really close-knit families looking out for each other.	39 Tough if you aren't self-disciplined.	15 Stronger when farmers and ranchers stick together.	32 A profession that requires hard work.
25 A terrible career path if you want to balance your work and your family.	6 Definitely more about money than "feeding the world".	8 Based more on tradition than science.	38 Agitated by anyone that tries to change their way of life.	28 Critical of anyone that asks for handouts.	23 Not for sissies.	20 Focused on getting the job done at all costs – no excuses.	9 Extremely stressful for farmers and ranchers.	10 Accepting of genetically modified organisms.	33 A major reason why the U.S. is such a huge world power.	35 Innovative and creative.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

PROGRESSIVE AGRICULTURE UNCERTAINTY AVOIDANCE
IN MY OPINION, AMERICAN AGRICULTURE IS…

					27 All about muscle and grit.					
				22 A male dominated field.	37 Supportive of modern rights movements like Black Lives Matter.	34 Dependent on serious financial investment.				
		12 Against government regulation.	24 Old school about gender roles.	17 Easier to get into if you look like everyone else involved in it.	5 A tough way to make a living in the world.	16 Better for people wanting to work with their hands.	1 A way to connect to my family.	36 Very satisfying to be involved in.		
	40 Full of overweight people.	41 Against Pro-LGBTQ Legislation.	4 Controlled by giant corporations.	2 Full of political conservatives.	29 Reflects what big companies like Monsanto are working on in their labs.	7 Full of good ol' boys.	31 Patriotic, like apple pie and the flag.	11 Big on safety.	13 At the cutting edge of harvesting technology.	
21 Not a career path for intellectuals.	19 Awful at accepting people that don't fit the mold.	14 Politically incompetent.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	30 Will not be affected by politics in the long run.	42 Apathetic about animal rights.	18 Full of really close-knit families looking out for each other.	39 Tough if you aren't self-disciplined.	15 Stronger when farmers and ranchers stick together.	32 A profession that requires hard work.
25 A terrible career path if you want to balance your work and your family.	6 Definitely more about money than "feeding the world".	8 Based more on tradition than science.	38 Agitated by anyone that tries to change their way of life.	28 Critical of anyone that asks for handouts.	23 Not for sissies.	20 Focused on getting the job done at all costs – no excuses.	9 Extremely stressful for farmers and ranchers.	10 Accepting of genetically modified organisms.	33 A major reason why the U.S. is such a huge world power.	35 Innovative and creative.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

PROGRESSIVE AGRICULTURE MASCULINITY
IN MY OPINION, AMERICAN AGRICULTURE IS…

					27 All about muscle and grit.					
				22 A male dominated field.	37 Supportive of modern rights movements like Black Lives Matter.	34 Dependent on serious financial investment.				
		12 Against government regulation.	24 Old school about gender roles.	17 Easier to get into if you look like everyone else involved in it.	5 A tough way to make a living in the world.	16 Better for people wanting to work with their hands.	1 A way to connect to my family.	36 Very satisfying to be involved in.		
	40 Full of overweight people.	41 Against Pro-LGBTQ Legislation.	4 Controlled by giant corporations.	2 Full of political conservatives.	29 Reflects what big companies like Monsanto are working on in their labs.	7 Full of good ol' boys.	31 Patriotic, like apple pie and the flag.	11 Big on safety.	13 At the cutting edge of harvesting technology.	
21 Not a career path for intellectuals.	19 Awful at accepting people that don't fit the mold.	14 Politically incompetent.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	30 Will not be affected by politics in the long run.	42 Apathetic about animal rights.	18 Full of really close-knit families looking out for each other.	39 Tough if you aren't self-disciplined.	15 Stronger when farmers and ranchers stick together.	32 A profession that requires hard work.
25 A terrible career path if you want to balance your work and your family.	6 Definitely more about money than "feeding the world".	8 Based more on tradition than science.	38 Agitated by anyone that tries to change their way of life.	28 Critical of anyone that asks for handouts.	23 Not for sissies.	20 Focused on getting the job done at all costs – no excuses.	9 Extremely stressful for farmers and ranchers.	10 Accepting of genetically modified organisms.	33 A major reason why the U.S. is such a huge world power.	35 Innovative and creative.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

CONSERVATIVE INDUSTRIAL AGRICULTURE INDULGENCE
IN MY OPINION, AMERICAN AGRICULTURE IS…

					38 Agitated by anyone that tries to change their way of life.					
				23 Not for sissies.	16 Better for people wanting to work with their hands.	4 Controlled by giant corporations.				
		20 Focused on getting the job done at all costs – no excuses.	27 All about muscle and grit.	11 Big on safety.	28 Critical of anyone that asks for handouts.	10 Accepting of genetically modified organisms.	41 Against Pro-LGBTQ Legislation.	9 Extremely stressful for farmers and ranchers.		
	21 Not a career path for intellectuals.	25 A terrible career path if you want to balance your work and your family.	19 Awful at accepting people that don't fit the mold.	6 Definitely more about money than "feeding the world".	5 A tough way to make a living in the world.	34 Dependent on serious financial investment.	35 Innovative and creative.	15 Stronger when farmers and ranchers stick together.	7 Full of good ol' boys.	
1 A way to connect to my family.	8 Based more on tradition than science.	40 Full of overweight people.	36 Very satisfying to be involved in.	24 Old school about gender roles.	29 Reflects what big companies like Monsanto are working on in their labs.	18 Full of really close-knit families looking out for each other.	13 At the cutting edge of harvesting technology.	39 Tough if you aren't self-disciplined.	22 A male dominated field.	32 A profession that requires hard work.
37 Supportive of modern rights movements like Black Lives Matter.	30 Will not be affected by politics in the long run.	14 Politically incompetent.	42 Apathetic about animal rights.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	17 Easier to get into if you look like everyone else involved in it.	12 Against government regulation.	33 A major reason why the U.S. is such a huge world power.	31 Patriotic, like apple pie and the flag.	2 Full of political conservatives.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

CONSERVATIVE INDUSTRIAL AGRICULTURE INDIVIDUALISM
IN MY OPINION, AMERICAN AGRICULTURE IS…

					38 Agitated by anyone that tries to change their way of life.					
				23 Not for sissies.	16 Better for people wanting to work with their hands.	4 Controlled by giant corporations.				
		20 Focused on getting the job done at all costs – no excuses.	27 All about muscle and grit.	11 Big on safety.	28 Critical of anyone that asks for handouts.	10 Accepting of genetically modified organisms.	41 Against Pro-LGBTQ Legislation.	9 Extremely stressful for farmers and ranchers.		
	21 Not a career path for intellectuals.	25 A terrible career path if you want to balance your work and your family.	19 Awful at accepting people that don't fit the mold.	6 Definitely more about money than "feeding the world".	5 A tough way to make a living in the world.	34 Dependent on serious financial investment.	35 Innovative and creative.	15 Stronger when farmers and ranchers stick together.	7 Full of good ol' boys.	
1 A way to connect to my family.	8 Based more on tradition than science.	40 Full of overweight people.	36 Very satisfying to be involved in.	24 Old school about gender roles.	29 Reflects what big companies like Monsanto are working on in their labs.	18 Full of really close-knit families looking out for each other.	13 At the cutting edge of harvesting technology.	39 Tough if you aren't self-disciplined.	22 A male dominated field.	32 A profession that requires hard work.
37 Supportive of modern rights movements like Black Lives Matter.	30 Will not be affected by politics in the long run.	14 Politically incompetent.	42 Apathetic about animal rights.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	17 Easier to get into if you look like everyone else involved in it.	12 Against government regulation.	33 A major reason why the U.S. is such a huge world power.	31 Patriotic, like apple pie and the flag.	2 Full of political conservatives.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

CONSERVATIVE INDUSTRIAL AGRICULTURE LONG TERM ORIENTATION
IN MY OPINION, AMERICAN AGRICULTURE IS…

					38 Agitated by anyone that tries to change their way of life.					
				23 Not for sissies.	16 Better for people wanting to work with their hands.	4 Controlled by giant corporations.				
		20 Focused on getting the job done at all costs – no excuses.	27 All about muscle and grit.	11 Big on safety.	28 Critical of anyone that asks for handouts.	10 Accepting of genetically modified organisms.	41 Against Pro-LGBTQ Legislation.	9 Extremely stressful for farmers and ranchers.		
	21 Not a career path for intellectuals.	25 A terrible career path if you want to balance your work and your family.	19 Awful at accepting people that don't fit the mold.	6 Definitely more about money than "feeding the world".	5 A tough way to make a living in the world.	34 Dependent on serious financial investment.	35 Innovative and creative.	15 Stronger when farmers and ranchers stick together.	7 Full of good ol' boys.	
1 A way to connect to my family.	8 Based more on tradition than science.	40 Full of overweight people.	36 Very satisfying to be involved in.	24 Old school about gender roles.	29 Reflects what big companies like Monsanto are working on in their labs.	18 Full of really close-knit families looking out for each other.	13 At the cutting edge of harvesting technology.	39 Tough if you aren't self-disciplined.	22 A male dominated field.	32 A profession that requires hard work.
37 Supportive of modern rights movements like Black Lives Matter.	30 Will not be affected by politics in the long run.	14 Politically incompetent.	42 Apathetic about animal rights.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	17 Easier to get into if you look like everyone else involved in it.	12 Against government regulation.	33 A major reason why the U.S. is such a huge world power.	31 Patriotic, like apple pie and the flag.	2 Full of political conservatives.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

CONSERVATIVE INDUSTRIAL AGRICULTURE POWER DISTANCE
IN MY OPINION, AMERICAN AGRICULTURE IS…

					38 Agitated by anyone that tries to change their way of life.					
				23 Not for sissies.	16 Better for people wanting to work with their hands.	4 Controlled by giant corporations.				
		20 Focused on getting the job done at all costs – no excuses.	27 All about muscle and grit.	11 Big on safety.	28 Critical of anyone that asks for handouts.	10 Accepting of genetically modified organisms.	41 Against Pro-LGBTQ Legislation.	9 Extremely stressful for farmers and ranchers.		
	21 Not a career path for intellectuals.	25 A terrible career path if you want to balance your work and your family.	19 Awful at accepting people that don't fit the mold.	6 Definitely more about money than "feeding the world".	5 A tough way to make a living in the world.	34 Dependent on serious financial investment.	35 Innovative and creative.	15 Stronger when farmers and ranchers stick together.	7 Full of good ol' boys.	
1 A way to connect to my family.	8 Based more on tradition than science.	40 Full of overweight people.	36 Very satisfying to be involved in.	24 Old school about gender roles.	29 Reflects what big companies like Monsanto are working on in their labs.	18 Full of really close-knit families looking out for each other.	13 At the cutting edge of harvesting technology.	39 Tough if you aren't self-disciplined.	22 A male dominated field.	32 A profession that requires hard work.
37 Supportive of modern rights movements like Black Lives Matter.	30 Will not be affected by politics in the long run.	14 Politically incompetent.	42 Apathetic about animal rights.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	17 Easier to get into if you look like everyone else involved in it.	12 Against government regulation.	33 A major reason why the U.S. is such a huge world power.	31 Patriotic, like apple pie and the flag.	2 Full of political conservatives.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

CONSERVATIVE INDUSTRIAL AGRICULTURE MASCULINITY
IN MY OPINION, AMERICAN AGRICULTURE IS…

					38 Agitated by anyone that tries to change their way of life.					
				23 Not for sissies.	16 Better for people wanting to work with their hands.	4 Controlled by giant corporations.				
		20 Focused on getting the job done at all costs – no excuses.	27 All about muscle and grit.	11 Big on safety.	28 Critical of anyone that asks for handouts.	10 Accepting of genetically modified organisms.	41 Against Pro-LGBTQ Legislation.	9 Extremely stressful for farmers and ranchers.		
	21 Not a career path for intellectuals.	25 A terrible career path if you want to balance your work and your family.	19 Awful at accepting people that don't fit the mold.	6 Definitely more about money than "feeding the world".	5 A tough way to make a living in the world.	34 Dependent on serious financial investment.	35 Innovative and creative.	15 Stronger when farmers and ranchers stick together.	7 Full of good ol' boys.	
1 A way to connect to my family.	8 Based more on tradition than science.	40 Full of overweight people.	36 Very satisfying to be involved in.	24 Old school about gender roles.	29 Reflects what big companies like Monsanto are working on in their labs.	18 Full of really close-knit families looking out for each other.	13 At the cutting edge of harvesting technology.	39 Tough if you aren't self-disciplined.	22 A male dominated field.	32 A profession that requires hard work.
37 Supportive of modern rights movements like Black Lives Matter.	30 Will not be affected by politics in the long run.	14 Politically incompetent.	42 Apathetic about animal rights.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	17 Easier to get into if you look like everyone else involved in it.	12 Against government regulation.	33 A major reason why the U.S. is such a huge world power.	31 Patriotic, like apple pie and the flag.	2 Full of political conservatives.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

CONSERVATIVE INDUSTRIAL AGRICULTURE UNCERTAINTY AVOIDANCE
IN MY OPINION, AMERICAN AGRICULTURE IS…

					38 Agitated by anyone that tries to change their way of life.					
				23 Not for sissies.	16 Better for people wanting to work with their hands.	4 Controlled by giant corporations.				
		20 Focused on getting the job done at all costs – no excuses.	27 All about muscle and grit.	11 Big on safety.	28 Critical of anyone that asks for handouts.	10 Accepting of genetically modified organisms.	41 Against Pro-LGBTQ Legislation.	9 Extremely stressful for farmers and ranchers.		
	21 Not a career path for intellectuals.	25 A terrible career path if you want to balance your work and your family.	19 Awful at accepting people that don't fit the mold.	6 Definitely more about money than "feeding the world".	5 A tough way to make a living in the world.	34 Dependent on serious financial investment.	35 Innovative and creative.	15 Stronger when farmers and ranchers stick together.	7 Full of good ol' boys.	
1 A way to connect to my family.	8 Based more on tradition than science.	40 Full of overweight people.	36 Very satisfying to be involved in.	24 Old school about gender roles.	29 Reflects what big companies like Monsanto are working on in their labs.	18 Full of really close-knit families looking out for each other.	13 At the cutting edge of harvesting technology.	39 Tough if you aren't self-disciplined.	22 A male dominated field.	32 A profession that requires hard work.
37 Supportive of modern rights movements like Black Lives Matter.	30 Will not be affected by politics in the long run.	14 Politically incompetent.	42 Apathetic about animal rights.	3 Exploiting farm laborers.	26 Hard to be respected in as a woman.	17 Easier to get into if you look like everyone else involved in it.	12 Against government regulation.	33 A major reason why the U.S. is such a huge world power.	31 Patriotic, like apple pie and the flag.	2 Full of political conservatives.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

TRADITIONAL AGRICULTURE INDIVIDUALISM
IN MY OPINION, AMERICAN AGRICULTURE IS…

					36 Very satisfying to be involved in.					
				28 Critical of anyone that asks for handouts.	39 Tough if you aren't self-disciplined.	34 Dependent on serious financial investment.				
		10 Accepting of Genetically Modified Organisms.	21 Not a career path for intellectuals.	33 A major reason why the U.S. is such a huge world power.	11 Big on safety.	38 Agitated by anyone that tries to change their way of life.	8 Based on more tradition than science.	18 Full of really close-knit families looking out for each other.		
	14 Politically incompetent.	25 A terrible career path if you want to balance your work and your family life.	41 Against Pro-LGBTQ Legislation.	5 A tough way to make a living in the world.	29 Reflects what big companies like Monsanto are working on in their labs.	26 Hard to be respected in as a woman.	9 Extremely stressful for farmers and ranchers.	16 Better for people wanting to work with their hands.	22 A male dominated field.	
6 Definitely more about making money than "feeding the world".	40 Full of overweight people.	19 Awful at accepting people that don't fit the mold.	3 Exploiting farm laborers.	12 Against government regulation.	42 Apathetic about animal rights.	17 Easier to get into if you look like everyone else involved in it.	7 Full of good ol' boys.	15 Stronger when farmers and ranchers stick together.	24 Old school about gender roles.	31 Patriotic, like apple pie and the flag.
30 Will not be affected by politics in the long run.	4 Controlled by giant corporations.	37 Supportive of modern rights movements like Black Lives Matter.	35 Innovative and creative.	27 All about muscle and grit.	13 At the cutting edge of harvesting technology.	23 Not for sissies.	2 Full of political conservatives.	1 A way to connect to my family.	20 Focused on getting the job done at all costs – no excuses.	32 A profession that requires hard work.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

TRADITIONAL AGRICULTURE INDULGENCE
IN MY OPINION, AMERICAN AGRICULTURE IS…

					36 Very satisfying to be involved in.					
				28 Critical of anyone that asks for handouts.	39 Tough if you aren't self-disciplined.	34 Dependent on serious financial investment.				
		10 Accepting of Genetically Modified Organisms.	21 Not a career path for intellectuals.	33 A major reason why the U.S. is such a huge world power.	11 Big on safety.	38 Agitated by anyone that tries to change their way of life.	8 Based on more tradition than science.	18 Full of really close-knit families looking out for each other.		
	14 Politically incompetent.	25 A terrible career path if you want to balance your work and your family life.	41 Against Pro-LGBTQ Legislation.	5 A tough way to make a living in the world.	29 Reflects what big companies like Monsanto are working on in their labs.	26 Hard to be respected in as a woman.	9 Extremely stressful for farmers and ranchers.	16 Better for people wanting to work with their hands.	22 A male dominated field.	
6 Definitely more about making money than "feeding the world".	40 Full of overweight people.	19 Awful at accepting people that don't fit the mold.	3 Exploiting farm laborers.	12 Against government regulation.	42 Apathetic about animal rights.	17 Easier to get into if you look like everyone else involved in it.	7 Full of good ol' boys.	15 Stronger when farmers and ranchers stick together.	24 Old school about gender roles.	31 Patriotic, like apple pie and the flag.
30 Will not be affected by politics in the long run.	4 Controlled by giant corporations.	37 Supportive of modern rights movements like Black Lives Matter.	35 Innovative and creative.	27 All about muscle and grit.	13 At the cutting edge of harvesting technology.	23 Not for sissies.	2 Full of political conservatives.	1 A way to connect to my family.	20 Focused on getting the job done at all costs – no excuses.	32 A profession that requires hard work.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

TRADITIONAL AGRICULTURE LONG TERM ORIENTATION
IN MY OPINION, AMERICAN AGRICULTURE IS…

					36 Very satisfying to be involved in.					
				28 Critical of anyone that asks for handouts.	39 Tough if you aren't self-disciplined.	34 Dependent on serious financial investment.				
		10 Accepting of Genetically Modified Organisms.	21 Not a career path for intellectuals.	33 A major reason why the U.S. is such a huge world power.	11 Big on safety.	38 Agitated by anyone that tries to change their way of life.	8 Based on more tradition than science.	18 Full of really close-knit families looking out for each other.		
	14 Politically incompetent.	25 A terrible career path if you want to balance your work and your family life.	41 Against Pro-LGBTQ Legislation.	5 A tough way to make a living in the world.	29 Reflects what big companies like Monsanto are working on in their labs.	26 Hard to be respected in as a woman.	9 Extremely stressful for farmers and ranchers.	16 Better for people wanting to work with their hands.	22 A male dominated field.	
6 Definitely more about making money than "feeding the world".	40 Full of overweight people.	19 Awful at accepting people that don't fit the mold.	3 Exploiting farm laborers.	12 Against government regulation.	42 Apathetic about animal rights.	17 Easier to get into if you look like everyone else involved in it.	7 Full of good ol' boys.	15 Stronger when farmers and ranchers stick together.	24 Old school about gender roles.	31 Patriotic, like apple pie and the flag.
30 Will not be affected by politics in the long run.	4 Controlled by giant corporations.	37 Supportive of modern rights movements like Black Lives Matter.	35 Innovative and creative.	27 All about muscle and grit.	13 At the cutting edge of harvesting technology.	23 Not for sissies.	2 Full of political conservatives.	1 A way to connect to my family.	20 Focused on getting the job done at all costs – no excuses.	32 A profession that requires hard work.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

TRADITIONAL AGRICULTURE MASCULINITY
IN MY OPINION, AMERICAN AGRICULTURE IS…

					36 Very satisfying to be involved in.					
				28 Critical of anyone that asks for handouts.	39 Tough if you aren't self-disciplined.	34 Dependent on serious financial investment.				
		10 Accepting of Genetically Modified Organisms.	21 Not a career path for intellectuals.	33 A major reason why the U.S. is such a huge world power.	11 Big on safety.	38 Agitated by anyone that tries to change their way of life.	8 Based on more tradition than science.	18 Full of really close-knit families looking out for each other.		
	14 Politically incompetent.	25 A terrible career path if you want to balance your work and your family life.	41 Against Pro-LGBTQ Legislation.	5 A tough way to make a living in the world.	29 Reflects what big companies like Monsanto are working on in their labs.	26 Hard to be respected in as a woman.	9 Extremely stressful for farmers and ranchers.	16 Better for people wanting to work with their hands.	22 A male dominated field.	
6 Definitely more about making money than "feeding the world".	40 Full of overweight people.	19 Awful at accepting people that don't fit the mold.	3 Exploiting farm laborers.	12 Against government regulation.	42 Apathetic about animal rights.	17 Easier to get into if you look like everyone else involved in it.	7 Full of good ol' boys.	15 Stronger when farmers and ranchers stick together.	24 Old school about gender roles.	31 Patriotic, like apple pie and the flag.
30 Will not be affected by politics in the long run.	4 Controlled by giant corporations.	37 Supportive of modern rights movements like Black Lives Matter.	35 Innovative and creative.	27 All about muscle and grit.	13 At the cutting edge of harvesting technology.	23 Not for sissies.	2 Full of political conservatives.	1 A way to connect to my family.	20 Focused on getting the job done at all costs – no excuses.	32 A profession that requires hard work.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

TRADITIONAL AGRICULTURE POWER DISTANCE
IN MY OPINION, AMERICAN AGRICULTURE IS…

					36 Very satisfying to be involved in.					
				28 Critical of anyone that asks for handouts.	39 Tough if you aren't self-disciplined.	34 Dependent on serious financial investment.				
		10 Accepting of Genetically Modified Organisms.	21 Not a career path for intellectuals.	33 A major reason why the U.S. is such a huge world power.	11 Big on safety.	38 Agitated by anyone that tries to change their way of life.	8 Based on more tradition than science.	18 Full of really close-knit families looking out for each other.		
	14 Politically incompetent.	25 A terrible career path if you want to balance your work and your family life.	41 Against Pro-LGBTQ Legislation.	5 A tough way to make a living in the world.	29 Reflects what big companies like Monsanto are working on in their labs.	26 Hard to be respected in as a woman.	9 Extremely stressful for farmers and ranchers.	16 Better for people wanting to work with their hands.	22 A male dominated field.	
6 Definitely more about making money than "feeding the world".	40 Full of overweight people.	19 Awful at accepting people that don't fit the mold.	3 Exploiting farm laborers.	12 Against government regulation.	42 Apathetic about animal rights.	17 Easier to get into if you look like everyone else involved in it.	7 Full of good ol' boys.	15 Stronger when farmers and ranchers stick together.	24 Old school about gender roles.	31 Patriotic, like apple pie and the flag.
30 Will not be affected by politics in the long run.	4 Controlled by giant corporations.	37 Supportive of modern rights movements like Black Lives Matter.	35 Innovative and creative.	27 All about muscle and grit.	13 At the cutting edge of harvesting technology.	23 Not for sissies.	2 Full of political conservatives.	1 A way to connect to my family.	20 Focused on getting the job done at all costs – no excuses.	32 A profession that requires hard work.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

TRADITIONAL AGRICULTURE UNCERTAINTY AVOIDANCE
IN MY OPINION, AMERICAN AGRICULTURE IS…

					36 Very satisfying to be involved in.					
				28 Critical of anyone that asks for handouts.	39 Tough if you aren't self-disciplined.	34 Dependent on serious financial investment.				
		10 Accepting of Genetically Modified Organisms.	21 Not a career path for intellectuals.	33 A major reason why the U.S. is such a huge world power.	11 Big on safety.	38 Agitated by anyone that tries to change their way of life.	8 Based on more tradition than science.	18 Full of really close-knit families looking out for each other.		
	14 Politically incompetent.	25 A terrible career path if you want to balance your work and your family life.	41 Against Pro-LGBTQ Legislation.	5 A tough way to make a living in the world.	29 Reflects what big companies like Monsanto are working on in their labs.	26 Hard to be respected in as a woman.	9 Extremely stressful for farmers and ranchers.	16 Better for people wanting to work with their hands.	22 A male dominated field.	
6 Definitely more about making money than "feeding the world".	40 Full of overweight people.	19 Awful at accepting people that don't fit the mold.	3 Exploiting farm laborers.	12 Against government regulation.	42 Apathetic about animal rights.	17 Easier to get into if you look like everyone else involved in it.	7 Full of good ol' boys.	15 Stronger when farmers and ranchers stick together.	24 Old school about gender roles.	31 Patriotic, like apple pie and the flag.
30 Will not be affected by politics in the long run.	4 Controlled by giant corporations.	37 Supportive of modern rights movements like Black Lives Matter.	35 Innovative and creative.	27 All about muscle and grit.	13 At the cutting edge of harvesting technology.	23 Not for sissies.	2 Full of political conservatives.	1 A way to connect to my family.	20 Focused on getting the job done at all costs – no excuses.	32 A profession that requires hard work.
1	2	3	4	5	6	7	8	9	10	11

Most UNLIKE Me **Most LIKE Me**

VITA

Jorge Eduardo Gonzalez

Candidate for the Degree of

Master of Science

Thesis: THE CULTURE OF AGRICULTURE: A Q-STUDY OF THE PERSPECTIVES OF AMERICAN AGRICULTURE HELD BY STUDENTS AT OKLAHOMA STATE UNIVERSITY

Major Field: Agricultural Education

Biographical: Jorge Eduardo Gonzalez began post-secondary studies at Texas State University, and transferred to Sam Houston State University, where he earned a Bachelors of Science in Interdisciplinary Agriculture with a minor in Secondary Education in 2016. Jorge Eduardo Gonzalez is currently pursuing a Masters of Science in Agricultural Education from Oklahoma State University.

Education:

Completed the requirements for the Master of Science/Arts in your major at Oklahoma State University, Stillwater, Oklahoma in May, 2018.

Completed the requirements for the Bachelor of Science in Interdisciplinary Agriculture at Sam Houston State University, Huntsville, Texas in 2016.

Experience:

Graduate Teaching Assistant in the Department of Agricultural Education, Communications, and Leadership at Oklahoma State University.

- Foundations and Philosophies of Teaching
- Laboratory and Clinical Experiences in Agricultural Education
- Volunteer Management in Agricultural Education and Extension
- Planning the Community Program in Agricultural Education

Professional Memberships:

American Association of Agricultural Educators: Student Member
Vocational Agriculture Teachers Association of Texas: Student Member