

Factors considered by male school-based agricultural education students when selecting a college major

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Abstract

An emerging challenge of closing the gap of supply and demand in School-Based Agriculture Education (SBAE) is recruiting and retaining male agricultural teachers. This case study was conducted under the lens of the Theory of Planned Behavior to examine this phenomena. Ten male participants, who were active in SBAE as youth and are currently attending a post-secondary institution, were chosen to discuss their participation in SBAE and their college major selection. The results of these interviews identified factors participants used to select a major in agricultural education versus other agricultural majors. Participants' high school agriculture teacher was found to be the most influential in students' decision to major in agriculture. Participants' parents were found to be supportive of their child's choice of major, but this was not a major factor in influencing their child's selection of major. Furthermore, enrollment in SBAE gave participants the confidence and knowledge to select majors in colleges of agriculture.

Introduction

Historically, school-based agricultural education (SBAE) programs have faced a shortage of teachers in the U.S. dating back to the passage of the Smith Hughes Act of 1917 (Hillison, 1987). “During most of its existence, SBAE has experienced a shortage of qualified teachers throughout the United States, which, in some cases, led to the closure of programs or prevented program expansion” (Eck & Edwards, 2019, p. 224). According to the National FFA Organization (2024), a shortage of qualified agriculture teachers is the greatest challenge facing agricultural education. Today there are more than 11,000 agriculture teachers, however 23% of teachers have less than five years teaching experience (FFA statistics).

An emerging challenge facing SBAE programs today and contributing to the shortage of teachers is the changing face of agricultural education programs across the country. Teaching agricultural education began as a male-only profession with only male students. In 1965, SBAE began to change with the dissolution of NFA and the inclusion of females in the FFA in 1969 (FFA history). Soon after, African American and female students began holding leadership roles in the FFA. Subsequently, agricultural education and FFA enrollment reached an all-time high in 1976 (Hoover & Scanlon, 1991). However, this increase in growth was short lived and “between 1977 and 1989 FFA membership had declined by more than 100,000 members” (Moore, 2019, p. 5). To combat this decrease in enrollment, new career development events and agricultural curriculum were developed in the 1990s’ to transition from traditional production-based agriculture programs to offering more science and communication-based agricultural programs. This adaptation increased opportunities for students and diversified SBAE programs leading to increased enrollment and FFA involvement.

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A profession once dominated by males began to diversify in the 1970's, 80's, and 90's. Female agriculture teachers began filling teaching positions across the country. However, this was not a new phenomenon. According to Dr. Gary Moore, in the early 1900s, numerous states established policies requiring the teaching of elementary agriculture in grade schools (G. Moore, Personal Communication, September 24, 2020). By 1915, 21 states required instruction of agriculture in elementary schools, which was primarily taught by females (Hillison, 1998). Following the passage of the Smith Hughes Act of 1917, females began majoring in agricultural education at colleges across the nation. Examples show female agriculture teachers and students 60 years before females were allowed into the FFA in 1969 (Moore, 2020). Lillian Lamb was one of the first female agriculture teachers post Smith Hughes Act. Lillian was the first female agricultural education graduate from Purdue University and was listed as an agriculture teacher at Cory High School in Indiana for the 1919-1920 school year (Smith, 1931). Agricultural education programs across the country have welcomed females into the profession not only in the classroom but in positions of leadership at the district, state, and national level to advance agricultural education and the National FFA Organization. Today, agricultural education majors are more homogenous toward white females, with Asians, Latinos, African Americans, and white males not choosing to go into the field of agricultural education at the same pace as white females (Lawver et al., 2018). According to enrollment figures at the University of Florida, in 15 of the last 18 years male enrollment is less than 33% in agricultural education and less than or equal to 26% over the last seven years. Post-secondary institutions across the country experience a continual shortage of agricultural education graduates each year, with some experiencing low male enrollment as well (Lawver et al., 2018). Increasing underrepresented populations among agricultural education majors will also help align the agricultural education profession with the nation's growing diverse population (Lawver et al., 2018). The need for this study is represented by the increased diversification of our nation's population not being reflected in agricultural education majors as a whole across the country. White males are becoming an underrepresented population in many agricultural teacher education programs. This study explores this phenomenon.

Literature Review

Several studies examined factors influencing students' selection of college major (Barkley & Parrish, 2005; Beggs et al., 2008; Donnermeyer & Kreps, 1994; Keshishian et al., 2010; Malgwi et al., 2005; Rocca & Washburn, 2005; Segler-Conrad et al., 2004; Stair et al., 2016; Vu et al., 2019; Wildman & Torres, 2001). Results of these studies were not always consistent with one another, yet all studies concluded at least one of the following factors as being influential on students' selection of college major: (a) parents or guardians, (b) high school or college friends, (c) personal role models, (d) agricultural professionals, (e) personal interests and career preferences, and (f) departmental brochures. The literature is mixed as to which of these influences were the most important. According to Wildman and Torres (2001), personal role models and agricultural professionals were found to influence students' decisions the most. Segler-Conrad et al. (2004) and Washburn et al. (2002) found the most influential people for freshman selecting the agricultural education major were their high school agricultural education teachers. Rocca and Washburn (2005, p. 35) "reported high school agriculture teachers had the least influence on high school matriculants' and transfer matriculants' selection of an agricultural college." According to Donnermeyer and Kreps (1994), students were influenced the most through taking agriculture courses in high school by friends, agriculture teachers, 4-H experience, and prior agriculture experience in social science-based agriculture majors. The strongest influences for students in natural science-based agriculture majors were a desire to work with animals, relatives, veterinarians, and agricultural news stories (Donnermeyer & Kreps, 1994). "Students did not perceive parents, relatives, high school friends, or college friends as influential in their selection of a major" (Wildman & Torres, 2001, p. 50). Students attending an agricultural college were often influenced by parents who had an agricultural background (Donnermeyer & Kreps, 1994). "The family generally influences students to go to college but not necessarily the students' choice of major" (Jackman & Smick-Attisano, 1992, p. 48). Students consider their own abilities and beliefs regarding their value of different careers when making career choices (Dick & Rallis, 1991).

In 1998, there were 1,332 graduates with a degree in agricultural education, with 59% of the graduates male ($n = 791$) and 41% of the graduates female ($n = 541$) (Camp, 2000). According to the 2014-2016 National Supply and Demand for Teachers of Agricultural Education, females accounted for most licensed eligible program completers at 65% ($n = 1,443$) while males accounted for 35% ($n = 762$) (Lawver et al., 2018). Research shows agriculture teachers are role models for students and have a significant impact on their decision to major in agricultural education and in the past two decades the pendulum has swung toward an increase in females graduating with degrees in agricultural education compared to males. With a continual shortage of qualified agricultural educators over the last century, a decrease in male graduates over the past 20 years is cause for concern and causing a gender gap in agricultural education. Increasing underrepresented student populations such as males in agricultural education majors will address challenges to fulfilling the teaching shortage in SBAE programs. Furthermore, it provides opportunities to close the gender gap being created in agricultural education to align with the nation's diversification of the workforce.

Theoretical Perspective

Theory of Planned Behavior (TPB; Ajzen, 1988) served as the lens to guide the design of this study to analyze the data through the behavioral, normative, and control beliefs influencing student intentions and behavioral change. Framing this study around TPB allows for the participants beliefs around selecting a college major to be explored in depth to understand why or why not male students choose to major in agricultural education based on their behavioral intentions. According to Ajzen (1991), a person's behavioral beliefs are their perceptions about the probable outcome from a behavior. How participants shape their behavioral beliefs is largely based on their attitude toward the behavior (positive or negative value of the behavior). Normative beliefs emerge from the environment and social pressure to carry out a behavior and are influenced by the subjective norms of the individuals relationships with the people closest to them (Ajzen, 1991). These beliefs are based around individuals or groups approval or disapproval of a behavior (Ajzen, 1991). Control beliefs are the belief a person has over their power to initiate a behavior and their perceived behavioral control (Ajzen, 1991). This includes a person's belief they have the power to initiate a behavior and can choose to be whatever they want to be (Ajzen, 1991). TPB (Ajzen, 1988) identifies a person's behavioral beliefs, normative beliefs, and control beliefs to determine their readiness to initiate a behavior. The TPB framework (Ajzen, 1988) calls for the final action to be behavior change. This involves a person's intentions to be put into action.

Subthemes were developed during data analysis related to the TPB framework of behavioral, normative, and control beliefs to explain how individual behavior is predicted by behavioral intentions, or the motivation to perform a behavior. Stronger intention to perform a specific behavior corresponds to a greater likelihood the behavior will be performed (Ajzen, 1991). Intentions are predicted by attitude toward the behavior, perceived approval of the behavior by others (subjective norms), and the perceived control an individual has over the performance of the behavior (Ajzen, 1991).

The TPB was chosen as the perspective for this study to analyze the phenomena found through the interviews to determine if the student's beliefs can predict their intentions to select a college major and carry out the behavior into a future career. The predictive power of attitudes, subjective norms, and perceived behavioral control on behavioral intentions varies across different situations and behaviors, and thus it is important to explore these factors relative to the specific context (Ajzen, 1991). Determining if a person's attitudes toward a behavior along with the subjective norms of what others around them believe can shape their ability to control and intent to enact a behavioral change. Social attitude and personality traits are important in predicting human behavior, which are concepts related to behavioral dispositions (Ajzen, 1988).

Purpose

The purpose of this research is to explore factors used by male students who were active in SBAE when selecting their college major. This case study is designed to interpret those factors through a qualitative viewpoint using Theory of Planned Behavior as the theoretical lens.

Methods

This is a basic qualitative design (Merriam, 1998) guided by the epistemological viewpoint of constructionism. Individual interviews were conducted face-to-face and by interactive video conferencing (Zoom) using a researcher developed and peer reviewed interview guide based on the literature consulted. Face-to-face was the preferred method of the researcher, however selection criteria for the participants dictated a nationwide study in which face-to-face was not an interview option for some participants due to distance. The study involves students majoring in agriculture or agricultural education at land grant institutions in the U.S.

Participant Selection

Purposive sampling was used to identify participants (Table 1) under the following selection criteria: (a) male participants active in SBAE who chose an agriculture major in college; and (b) male participants active in SBAE who chose to major in agricultural education. Active participation in a SBAE program was defined as: students who held leadership roles through FFA, and/or participated in career and leadership development events (CDEs and LDEs), and/or participated in supervised agricultural experience programs (SAEP). These criteria were selected because current male student enrollment in the agricultural education major at the University of Florida has been disproportionate to female enrollment over the last decade.

Due to an insufficient number of male participants majoring in agricultural education from University of Florida, the population was expanded to include participants from other universities experiencing low male enrollment in their agricultural education programs (Lawver et al., 2018). Universities with low male student enrollment is defined as less than 35% males majoring in agricultural education and were identified through the national supply and demand report (Lawver et al., 2018). Departments of agricultural education were contacted from each university, given a description of the research being conducted, and asked if they would be willing to submit names of students to be contacted for participation. Thirteen universities expressed interest in participating and sent the names of forty students majoring in agricultural education and twenty-nine students majoring in agriculture majors. All forty agricultural education students and twenty-nine agriculture majors were invited to participate. After multiple attempts to reach students, ten students agreed to participate. Six agricultural education majors and four agriculture majors were interviewed from the following universities: four from University A, three from University B, two from University C, and one participant from University D.

Each participant was coded for identification. The code consisted of two letters followed by a number and another letter. The letters "ED" represented an agricultural education major and the letters "AG" an agriculture major in a college of agriculture. The number assigned to the participant (1 - 6) represents the order number of the participant for the assigned major codes during the interviews. Finally, the last letter (A - D) represents the university attended by the participant.

Table 1

Description of Participants

Participant & University	College Major	School & Community	Agricultural Background	FFA Involvement
ED1C	Agricultural Education	3-teacher SBAE Program, rural community	Yes, family works in the agricultural industry	4 years, 2-year chapter officer, CDE's, LDE's, WLC, workshops and conventions
AG1A	Food and Resource Economics	3-teacher SBAE Program, rural community	Mom was his 4-H leader; dad is a former state FFA officer and agriculture teacher	Participated in CDE's and showed swine for his SAE
ED2C	Agricultural Education	1-teacher SBAE Program, urban community	Mom was heavily involved in FFA growing up and dad was raised on a beef farm.	Chapter president for 2 years, National CDE team, leadership workshops and conventions
AG2A	Animal Science	5-teacher SBAE Program, rural community	Mom is a former agriculture teacher; dad works in agriculture and runs a beef cattle operation	6 years, chapter president, CDE's, LDE's, SAE's, leadership workshops, conventions, and senior FFA member of the year
AG3B	Plant Science	2-teacher SBAE Program, rural community	No agricultural background. Dad was an agriscience student	3-year chapter officer, served as president, 3-time state CDE & LDE winner, agriscience fair, state officer candidate
ED3A	Agricultural Education	1-teacher SBAE Program, large urban city	No agricultural background. Dad lived on a small swine farm in Haiti for a few years and was very support of son's activities in FFA.	Chapter officer, numerous FFA activities, CDE's, workshops, and conventions. SAE included showing swine.
AG4A	Biological Engineering	3-teacher SBAE Program,	No agricultural background. Both parents work in medicine.	Chapter minority representative, several CDE's, SAE

		rural community		included vet assisting.
ED4B	Agricultural Education	2-teacher SBAE Program, rural community	No agricultural background, parents did not know what FFA was, but very supportive.	4-year member, LDE's, workshops, conventions, state FFA officer
ED5B	Agricultural Education	1-teacher SBAE Program, Rural community	Yes, grew up on a dairy farm. Parents supportive of FFA involvement.	4-year member, 3- year chapter president, CDE's, LDE's
ED6D	Agricultural Education	3-teacher SBAE Program, Rural community	Yes, grandfather and dad farmed and stayed involved in agriculture after farming	3-year FFA member, chapter officer, CDE's, LDE's, conventions, FFA activities

Data Collection

Face-to-face and Zoom were used to conduct interviews. Participants from the same university as the researcher participated in face-to-face interviews, while participants from out of state universities conducted interviews over interactive Zoom.

Interviews were conducted and recorded for accuracy in the Fall 2018 semester and Spring 2019 semester lasting from 8 minutes to 22 minutes, with the average interview lasting 15 minutes. Two researcher-developed interview guides were used, one for ED participants and one for AG participants. The ED questionnaire contained nine questions with six questions repeated on the AG questionnaire and 3 questions specific to agricultural education majors. The AG questionnaire was comprised of eight total questions (six questions the same as the ED questionnaire) with 2 questions specific to agriscience majors and one of the two questions consisting of two-parts. Interview guides were developed using the TPB framework and relevant literature. Interview questions allowed the researcher to understand participants background in SBAE, involvement in FFA, and their normative beliefs and subjective norms contributing to their selection of major and career choice.

Data Analysis

In person interviews were audio recorded for transcribing purposes and the researcher also kept a journal to take notes to help understand the phenomena described. Zoom interviews were recorded for transcribing using Zoom and the researcher again took notes to describe the data collected. The first interview was hand transcribed followed by using transcription software to complete the rest of the interviews. After each transcription, the researcher played back the audio several times while reading the written text and edited each transcription for accuracy. The next step taken was to summarize each transcription under the headings of the interview questions and return to the participants for member checking before coding.

Data were analyzed through line-by-line coding using a deductive structural coding approach (Saldana, 2013). "Sources suggest Structural Coding is perhaps more suitable for interview transcripts" (Saldana, 2013, p. 84). This method of deductive coding was selected because it is appropriate for case studies with multiple participants, allowing for themes and subthemes to development through assigning labels to data and categorization. After initial coding was completed, identified codes were synthesized

from all participants into one document and grouped together under the themes found in the TPB framework. Some similar codes were analyzed and combined during this first phase to allow for uniformity of codes during the second phase. The summarized transcripts were analyzed a second time and relevant quotes were identified for selected codes. The final step in data analysis was to count the number of like codes and number them according to the number of times they were identified in each transcription creating a matrix of all ten transcriptions and their number of appearances in each.

Trustworthiness

“The perspectives of quantitative research are rigor and validity, and the perspectives of qualitative research are credibility and trustworthiness” (Cope, 2014, p. 89). Throughout this study procedures were put in place to increase the trustworthiness of the study. According to Lincoln and Guba (1985), trustworthiness is important to evaluating the worth of a research study and involves establishing credibility, transferability, dependability, and confirmability.

Peer debriefing and member-checking were conducted to establish credibility. Peer debriefing was established weekly throughout the study to formulate the idea of the researcher into a research question, development of the research design, and analysis of transcripts using line-by-line coding. (Bitsch, 2005). Peer debriefing addresses whether the researcher or research team have engaged in an ongoing discussion with non-contractually involved peers during the research process (Bitsch, 2005). Member checking involves participant review of data to ensure credibility of the data (Bitsch, 2005). This gives participants the ability to correct any errors in data or challenge any perceived wrong interpretations (Lincoln & Guba, 1985). Participants were sent a summary of the interview for member checking. No participants indicated any inaccuracy of the interview summaries.

Transferability can be achieved through thick description, purposive sampling, and reflexive journaling to establish the applicability of a study (Lincoln & Guba, 1985). Thick descriptions of the participants were given (Table 1). This is a common practice to allow readers to “determine how closely their situations match the research situation, and hence, whether findings can be transferred” (Merriam, 1998, p. 211).

Dependability and confirmability can be established through an audit trail, which refers to the consistency and accuracy of the research data (Lincoln & Guba, 1985). The researcher used a journal to document each step of the research process during the data collection and analysis phase. By keeping an audit trail, other researchers can see how the raw data was used to produce the results (Merriam, 1998). In addition to keeping an audit trail of detailed records, rich descriptions and direct quotes were used to support the conclusions drawn from the research, which helps to address confirmability.

Bias Statement

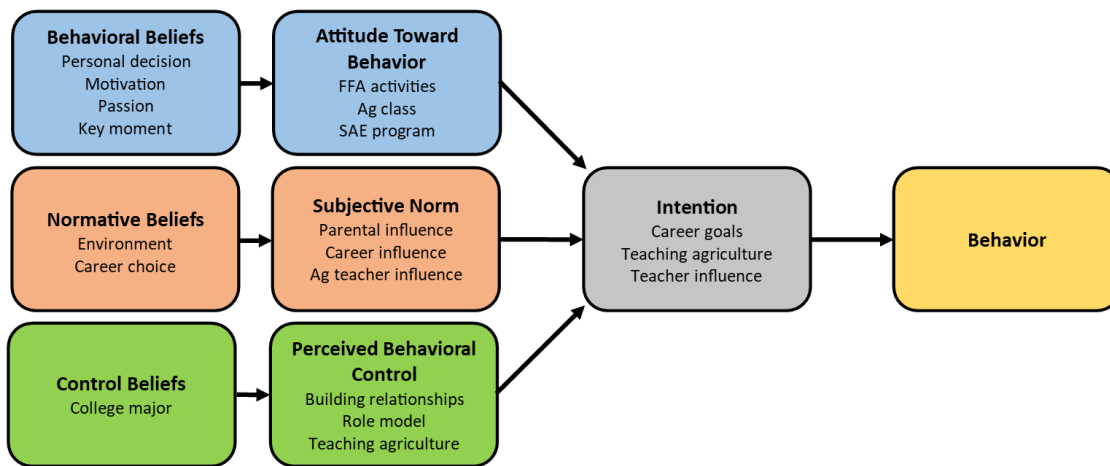
Researcher bias can be a concern when conducting qualitative research. It is important to note the background of the researcher when considering biases. Currently as the researcher, I am a male doctoral student studying agricultural education and working full-time as an Academic Advisor at the University of Florida. Previously, I received my BS in Agricultural Education and a Master of Agribusiness degree before teaching agriculture for thirteen years at the middle and high school level. I have a personal interest in this research as a former agricultural education instructor and current academic advisor who has seen a steady decline in the number of males majoring in agricultural education. The interview questionnaire I developed was verified by an expert to eliminate researcher bias, however I am aware of my background experience potentially influencing my interpretation of the data.

Findings

Through data analysis, subthemes emerged under the TPB model (Ajzen, 1991) (Figure 1). This model explains the behavioral, normative, and control beliefs affecting our attitude toward a behavior, the subjective norms we carry, and our perceived behavioral control, all of which guide our intentions to carry out a behavior and make a behavioral change. This section is divided into eight themes, which follow the TPB model: (a) behavioral beliefs, (b) attitude toward the behavior, (c) normative beliefs, (d) subjective norms, (e) control beliefs, (f) perceived behavioral control, (g) intention, and (h) behavior. Results from this study confirm use of the TPB model can assist colleges in identifying factors students consider when selecting their major, specifically relating to selection of major in agricultural education.

Figure 1

Themes and sub themes organized using the Theory of Planned Behavior Model (Ajzen, 1991).



Behavioral Beliefs

According to Ajzen (1991) a person’s behavioral beliefs are their perceptions about the probable outcome from a behavior. A positive or negative value placed on a behavior will affect the person’s attitude toward the behavior (Ajzen, 1991). Four subthemes surfaced when analyzing the behavioral beliefs of the participants: personal decision, motivation, passion, and key moment (Table 2).

Table 2

Subthemes emerged from the behavioral beliefs of the participants.

Subthemes	Representative Quotes
Personal decision (ED1C, AG1A, AG2A, AG3B, AG4A, ED6D)	“I knew agricultural education was not something I wanted to do. So, it is just never really crossed my mind as an option” (AG4A)
Motivation (ED1C, AG1A, AG1A, AG3B, AG4A, ED4B, ED5B)	AG1A said “I didn’t really want to put myself out there and study for something else and other after school activities like soccer conflicted with FFA practices.”

Passion (ED1C, AG2A, AG3B, ED3A, AG4A, ED4B, ED6D)	According to AG3B, “Ag science quickly became one of my passions and I was premed, but now I want to do plant science.”
Key moment ED1C, ED4B, ED5B, ED6D)	ED5B recalled “...being a state officer I really did love working with all the students. I loved interacting with the teachers and I really loved being involved in FFA and I realized I could follow my dreams and never really leave the FFA Ag Ed aspect of it.” ED1C stated "...and then I participated in the WLC Washington Leadership Conference held in Washington which really changed my mind and I knew from that point on I definitely want to be an Ag teacher or at least that was mainly what I want to do."

The subtheme *Personal decision* emerged from participants belief they could make their own choices. *Motivation* was a subtheme that emerged from participants regarding their motivation for being involved in their SBAE program. Many participants exuded a *Passion* for their SBAE program the more they learned and became involved in SBAE. Finally, the *Key moment* theme emerged from participants when they became involved in their SBAE program and figured out what career path they wanted to pursue.

Attitude Toward Behavior

Participant attitudes toward performing a specific behavior were described through the subthemes FFA activities, Agriculture class, and SAE program (Table 3).

Table 3

Subthemes emerged from the participants attitude toward behavior.

Subthemes	Representative Quotes
FFA activities (all participants)	AG2A stated, “...you’re either sitting and doing nothing or you can be involved and you know hang out with a lot of people.” According to AG3B “FFA was a big part of my life. Basically, the number one thing we did outside of sports.” “I got heavily involved with different competitions and fell in love with it, so after that I became an officer and involved in every activity available to us,” “...it was an overall great experience and it really provided me with a lot I had not known before.” (ED6D)
Agriculture class (AG3B, ED3A, ED5B)	“I was all in on Ag class” (ED5B) AG3B stated, “...in biotechnology class I read a book called Mendel the kitchen and it was all about the advancements in Plant Biotechnology plant breeding and renewable plant and food security and its fascinating, it is actually my favorite book.”
SAE Program	“I enjoyed showing poultry and swine.” ED3A

(AG1A, ED2C, AG2A, AG3B, ED3A)

FFA activities encompassed a broad set of activities from CDE’s to leadership development events (LDE’s), leadership positions, and chapter FFA activities. This subtheme was a driving force in motivating participants active involvement in their SBAE program. Attitudes toward *Agriculture class* proved to be a positive value in all the participants but emerged as a subtheme in half of the interviews in both agriculture majors and agricultural education majors. Students expressed positive attitudes toward their *SAE program*, which helped motivate the participants to get involved in their SBAE program.

Normative Beliefs

The environment plays a role in how students decide to select their college majors. Normative beliefs emerge from the environment and social pressure to carry out a behavior. The subthemes emerged here included the environment and career choice (Table 4).

Table 4

Subthemes emerged from the normative beliefs of the participants.

Subthemes	Representative Quotes
Environment (ED1C, ED2C, AG2A, AG3B, ED3A, ED4B, ED5B, ED6D)	Participant AG2A stated, “being raised in the ag industry kind of influenced my love for beef and all that type of stuff.” “My ag teacher was pushy and always hard on us students to continuously be active in the classroom doing SAE’s and FFA in general.” (ED3A)
Career Choice (ED1C, ED2C, AG2A, ED5B)	“I met people from International backgrounds, agricultural groups all over the country which is why I’m continuing in agriculture education to promote that for other kids.” (ED1C)

Environment represented the type of community participants grew up in such as rural, suburban, or urban. Farming background, non-farm background, agriculture experience, no agriculture experience, and culture also emerged in this subtheme. *Career choice* was a subtheme in half of the participants based on their normative beliefs about what people around me are doing.

Subjective Norms

The subjective norm subthemes identified in this case study were parental influence, ag teacher influence, and career influence (Table 5).

Table 5

Subthemes emerged from the participants subjective norms.

Subthemes	Representative Quotes
Parental influence (all participants)	According to participant AG2A, "...they haven't pushed me to do one thing or another by any means." Participant ED5B stated, "my mom always told me I should become a teacher. Ever since I was little, she would say she could see me being like a science teacher or something like similar." Participant ED1C had the following response, "Well, no, not really. Both of my parents, neither one of them wanted me to go to school."
Ag teacher influence (ED1C, AG1A, ED2C, ED3A, AG4A, ED5B, ED6)	ED1C stated, "all three of my agriculture teachers told me at least once they foresaw me being a teacher and every one of them pushed me to go into agricultural education." According to ED6D, "A huge part seeing my agriculture teacher teach in a variety of different aspects like animal science, horticulture, ag mechanics."
Career influence (ED1C, ED2C, AG3B, ED3A, AG4A, ED4B, ED6D)	According to ED2C, "You should seek a career in agriscience education." ED6D stated, "being in the ag program kind of solidified what I wanted to do for the rest of my life."

These subthemes relate to the participants perceptions of a behavior, "the extent to which 'others' would approve or disapprove of their performing a given behavior" (Ajzen, 1991, p. 195). The subthemes of *Parental influence* and *Ag teacher influence* are independent of one another, whereas *Career influence* overlaps between the two. The final subtheme of *Career influence* was identified and characterized by both the parents and agriculture teachers' influence on the participants career choice.

Control Beliefs

Ajzen states control beliefs are the belief a person has over their power to initiate a behavior. Does the person believe they have the necessary resources and opportunities to carry out a behavior (Ajzen, 1991)? Many participants were unsure of their control beliefs; however, one subtheme did emerge in college major.

College major was a theme revealed in half of the participants with AG2A stating, "I would never have thought about doing a major in ag ed, I'm thinking about maybe a Masters." Participant ED3A commented, "I came in as animal science prevet but then I went to college late and I'm not sure if being a vet is what I want to do for the rest of my life."

Perceived Behavioral Control

Within Ajzen's (1991) control beliefs is a person's perceived behavioral control, the person's beliefs about ability to initiate a behavior "Is this behavior within my capabilities?" The subthemes that appeared were building relationships, role model, and teaching agriculture (Table 6).

Table 6

Subthemes emerged from the participants perceived behavioral control.

Subthemes	Representative Quotes
Building relationships (ED1C, ED2C, ED4B, ED5B, ED6D)	ED2C stated the need to “make an impact on as many students as I possibly can and form relationships with community members.”
Role model (ED1C, ED2C, AG3B, ED4B, ED5B, ED6D)	ED1C stated. “His agriculture teachers were his role model and he looks forward to being that person for students one day. Working with kids motivates me in teaching them agriculture knowledge, which is lacking in students today.” ED2C commented, “So being able to connect with as many people as possible and just making a difference within my community.”
Teaching agriculture (AG2A, ED3A, AG4A)	Participant ED3A stated the following, “I’m looking forward to educating students and bringing awareness about agriculture to know the aspects of it and being aware about the growing appreciation for it like I learned how to do in high school.”

Building relationships and *Role model* surfaced in half of the participants, all of which were agriculture education majors. They felt a strong need to connect with others and serve others like the connections they built through their SBAE programs. *Teaching agriculture* was the final subtheme relating to the participants realization they could become agriculture teachers.

Intention

Theory of planned behavior (Ajzen, 1991) identifies a person’s behavioral beliefs, normative beliefs, and control beliefs to determine their readiness to initiate a behavior. “I plan to make this change.” Three subthemes emerged through intentions which were career goals, teaching agriculture and teacher influence (Table 7).

Table 7

Subthemes emerged from participants intention to initiate a behavior.

Subthemes	Representative Quotes
Career goals (ED1C, AG1A, ED2C, AG2A, AG3B, ED3A, AG4A, ED4B, ED6D)	Participant AG3B stated, “I am really research minded and have an analytical minded brain and I know you do need a lot of money.”
Teaching agriculture (ED1C, AG1A, ED2C, AG3B, ED3A, ED4B, ED5B, ED6D)	Participant AG1A stated, “I would not rule it out, I do not know the direct path I want to take. I just know I want to graduate from UF and get a masters in something or go to law school, so I am not really sure, so I cannot rule out teaching, even ag.”

	Participant AG3B did state, “teaching agriculture would be a 75% no, 25% yes.”
Teacher influence (AG2A, AG3B, ED4B, ED5B)	According to AG2A, “I thought about how much I enjoyed the animal sciences class that she taught and all. So, I'd say she influenced my major a lot.”
	Participant ED5B stated, “If it were not for agriculture education in my high school and for my ag teachers I would not be where I am today.”

Career goals were identified as a subtheme in 9 out of the 10 participants and included the participants readiness to carry out their goals. *Teaching agriculture* was also a subtheme developed when agriculture majors were asked if they could see themselves teaching agriculture one day. None of the participants would rule out ever teaching agriculture, with one participant stating he would like to get a master’s in agriculture education. The subtheme *Teacher influence* emerged from participants who valued the opinions of their agriculture teacher when selecting their college major and intentions to initiate a behavior.

Behavior

The TPB framework (Ajzen, 1991) calls for the final action to be behavior change. This involves a person’s intentions to be put in action. For example, if a participant is majoring in agriculture education and intends to become an agriculture teacher, their behavior would be getting a job and teaching agriculture. Likewise, for an agriculture major would be getting a job in their selected major, such as a Plant Science major working in the plant industry. Due to time and resources, this case study did not follow students all the way through their major until they received a job, so behavior was not observable.

Conclusions and Recommendations

Using the TPB framework (Ajzen, 1991) allowed themes to emerge from participants behavioral, normative, and control beliefs as they related to the process the participants used in selecting a college and major. Passion and motivation were subthemes seen throughout participants behavioral beliefs. SBAE programs are credited with helping seven of the ten participants find their passion and motivation in life whether it is in an agricultural field of study or agricultural education. The National FFA Organization helped shape participants attitudes toward behavior and played a major role in their lives by building their social, leadership, and communication skills. These skills helped give the participants the confidence to make well informed decisions relating to their future educational and career goals. The normative beliefs participants exhibited were largely shaped by the influence of their environment which included their agriculture teacher, family and friends, and environmental upbringing. Participants normative beliefs were the main influence on their selection of college and major. Finally, control beliefs were highlighted by the subthemes of selecting a college major and importance of building relationships and role models. ED2C stated the need to “make an impact on as many students as I possibly can and form relationships with community members.” All the agricultural education major participants cited relationship building and becoming a role model for future students as a driving factor in making the decision to major in agricultural education. Through the beliefs outlined in the Theory of Planned Behavior, each of the participants were able to develop their intentions to go to college and select a major. I am confident the participants will have the belief to make the behavioral change by graduating with a degree from the college of agriculture and applying it to their future career.

According to the findings of this study, the influence an agriculture teacher has on its students is paramount to the success of increasing enrollment in colleges of agriculture and the agricultural education major across the country. Nine of the ten participants acknowledged their agriculture teacher played a major

role in their selection of college and major. Participant ED5B stated, “If it were not for agriculture education in my high school and for my ag teachers I would not be where I am today.” This is consistent with the literature citing former SBAE students were influenced by their agricultural teachers in high school when deciding on selecting a college major in colleges of agriculture (Donnermeyer & Kreps 1994; Segler-Conrad et al. 2004; Washburn et. al. 2002; Wildman & Torres, 2001). Agriculture teachers were also identified as role models for many of the participants. Research shows role models are also an influencing factor for many students when selecting their college and major (Wildman & Torres, 2001). In contrast, nine of the ten participants received support from their parents to go to college, however only three were influenced to enroll in the college of agriculture and none were influenced by their parents to choose a specific major. This was similar with previous research which acknowledged parental support of their students’ selection of a college major without influencing their choice of major (Wildman & Torres, 2001). Participants coming from an agricultural background were influenced by their parents to choose a college of agriculture, which is supported by literature (Donnermeyer & Kreps, 1994; Jackman & Smick-Attisano, 1992). This study contributes to the knowledge base by giving insight from a male perspective about what influences their decision to select a major and career.

A future study should be conducted with current agriculture teachers to compare the results of this study and determine if teachers are aware of their influence of student’s selection of college and major. It is recommended to conduct a survey on agriculture teachers to explore beliefs they have regarding their student’s post-secondary intentions and the role they play in influencing these decisions. A follow up interview of selected agriculture teachers can further explain the results of this survey to reveal how much influence agriculture teachers believe they have on future career decisions made by their students. Results of the current study and future studies described above can be used as a blueprint for the second recommendation to develop a recruitment plan designed to increase male and female students majoring in agricultural education.

A recruitment plan geared toward males in SBAE programs should highlight the importance of agriculture teachers and the impact they can make in this career field. Professional development and marketing materials should target current agriculture teachers to highlight the impact they can make on student selection of college and major. Expansion of this study with future research will help agriculture education departments across the country to revise and implement new recruitment strategies targeting current agriculture teachers already in the profession as a key component in the recruitment process of new students. This is an important step to increase the number of male students majoring in agricultural education, while continuing to encourage females to pursue a career in agricultural education. Targeted recruiting can decrease the gender gap, diversify the profession, and reduce teacher supply shortage in agricultural education to ensure a strong future for SBAE programs. As the field of agricultural education and SBAE programs continues to evolve, the industry has done a good job of recruiting female agricultural educators, however more attention needs to be paid toward what attracts their male counterparts into the profession. Now is the time to implement recruitment programs that will continue to recruit females into the profession while highlighting the impact males can make on young future agriculturalists through a career in agricultural education.

References

- Ajzen, I. (1988). *Attitudes, personality, and behavior*. Dorsey Press.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Barkley, A. P., & Parrish, D. (2005). The Selection of a Major Field of Study in the College of Agriculture at Kansas State University. <http://doi.or/10.22004/ag.econ.19275>

- Beggs, J. M., Bantham, J. H., & Taylor, S. (2008). Distinguishing the factors influencing college students' choice of major. *College Student Journal*, 42(2), 381+. <https://link.gale.com/apps/doc/A179348418/AONE?u=tall22798&sid=googleScholar&xid=c227ed13>
- Bitsch, V. (2005). Qualitative research: A grounded theory example and evaluation criteria. *Journal of Agribusiness*, 23(1), 75-91. <http://doi.org/10.22004/ag.econ.59612>
- Camp, W. G. (2000). *A national study of the supply and demand for teachers of agricultural education in 1996-1998*. <http://www.aged.vt.edu/pubs/s-d-98.pdf>
- Cope, D. C. (2014, January). Methods and meanings: Credibility and trustworthiness of qualitative research. *Oncology Nursing Forum*, 41(1), 89-91.
- Creswell, J. W., & Poth, C. N. (2020). *Qualitative inquiry and research design: Choosing among five traditions* (4th ed.). Sage.
- Dick, T. P., & Rallis, S. F. (1991, July). Factors and influences on high school students' career choices. *Journal for Research in Mathematics Education*, 22(4), 281-292. <https://www.jstor.org/stable/749273>
- Donnermeyer, J. F., & Kreps, G. M. (1994). Assessing college of agriculture freshman. *NACTA Journal*, 38(1), 45-48. <https://www.jstor.org/stable/43764987>
- Eck, C., & Edwards, M. C. (2019). Teacher shortage in school-based, agricultural education (SBAE): A historical review. *Journal of Agricultural Education*, 60(4), 223-239. <https://doi.org/10.5032/jae.2019.04223>
- Hillison, J. (1998). Agriculture in the classroom: Early 1900s Style. *Journal of Agricultural Education*, 39(2), 11-18. <https://doi.org/10.5032/jae.1998.02011>
- Hillison, J. (1987). Agricultural teacher education preceding the Smith-Hughes act. *Journal of the American Association of Teacher Educators in Agriculture*, 28(2), 8-17. <https://doi.org/10.5032/jaatea.1987.02008>
- Hoover, T. S., & Scanlon, D. C. (1991). Enrollment issues in agricultural education programs and FFA membership. *Journal of Agricultural Education*, 32(4), 2-10. <https://doi.org/10.5032/jae.1991.04002>
- Jackman, W. J., & Smick-Attisano, R. A. (1992). Qualitative and quantitative methods add depth to recruiting study. *NACTA Journal*, 36(1), 46-50. <https://www.jstor.org/stable/43766694>
- Keshishian, F., Brocovich, J. M., Boone, R. T., & Pal, S. (2010). Motivating factors influencing college students' choice of academic major. *American journal of pharmaceutical education*, 74(3), 46. <https://doi.org/10.5688/aj740346>
- Lawver, R. G., Foster, D. D., & Smith, A. R. (2018). *Status of the U.S. supply and demand for teachers of agricultural education, 2014-2016*. <http://aaaeonline.org/Teacher-Supply-and-Demand>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.

- Malgwi, C. A., Howe, M. A., & Burnaby, P. A. (2005). Influences on students' choice of college major. *Journal of education for business*, 80(5), 275-282. <https://doi.org/10.3200/JOEB.80.5.275-282>
- Merriam, S. (1998). *Qualitative research and case study applications in education*. Jossey-Bass.
- Moore, G. (2019, May-June). Where there is no vision, the people perish. *Agricultural Education Magazine*, 91(6), 5-8.
- Moore, G. (2020, October 6). *Was Lillian Lamb the First Smith-Hughes Agriculture Teacher?* (10/9/2020). The Friday Footnote. <https://footnote.wordpress.ncsu.edu/2020/10/06/was-lillian-lamb-the-first-smith-hughes-agriculture-teacher-10-9-2020/>.
- National FFA Organization. (2024). *FFA history*. Retrieved from <https://www.ffa.org/ffa-history/>.
- National FFA Organization. (2024). *FFA statistics*. Retrieved from <https://www.ffa.org/statistics>.
- Rocca, S. J., & Washburn, S. G. (2005). Factors influencing college choice of high school and transfer matriculants into a college of agriculture. *NACTA Journal*, 49(1), 32-38. <https://www.jstor.org/stable/43765922>
- Saldana, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). Sage.
- Segler-Conrad, E., Joerger, R. M., & Leske, G. (2004, May). Forms of communication and individuals that influenced freshmen students when selecting an agricultural education major and a college of agriculture. In *31st National Agricultural Education Research conference, St. Louis, Missouri* (pp. 27-29).
- Smith, Z. M. (1931). *Some historical data on vocational agricultural education in Indiana, from 1913 to 1931*. Department of Public Instruction (109). Indianapolis, Indiana.
- Stair, K., Danjean, S., Blackburn, J. J., & Bunch, J. C. (2016). A major decision: Identifying factors that influence agriculture students' choice of academic major. *Journal of Human Sciences and Extension*, 4(2), 8. <https://doi.org/10.54718/NMRW9896>
- Vu, P., Harshbarger, D., Crow, S., & Henderson, S. (2019). Why STEM? Factors that influence gifted students' choice of college majors. *International Journal of Technology in Education and Science*, 3(2), 63-71.
- Washburn, S. G., Garton, B. L., & Vaughn, P. R. (2002, December). Factors influencing college choice of agriculture students college-wide compared with students majoring in agricultural education. In *Proceedings of the 24th national agricultural education research conference. Las Vegas, NV* (Vol. 24, pp. 327-333).
- Wildman, M., & Torres, R. M. (2001). Factors identified when selecting a major in agriculture. *Journal of Agricultural Education*, 42(2), 46-55. <https://doi.org/10.5032/jae.2001.02046>