

**Analysis of Personal Characteristics, Motivation, and Career Aspirations of
Students in the National Floriculture Career Development Event (CDE)**

by

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Abstract

This study examined the personal characteristics, motivation patterns, and career aspirations of students participating in the National FFA Floriculture Career Development Event (CDE). Guided by Expectancy-Value Theory (EVT), the study explored how students' expectations for success and perceptions of task value influence their participation, engagement, and career decision-making. EVT provides a framework for understanding how confidence (expectancy beliefs) and perceived importance, interest, and usefulness (task value) shape student motivation and outcomes in experiential learning environments such as Career Development Events.

Study one used a cross-sectional quantitative design to describe the demographic characteristics and participation patterns of National Floriculture CDE participants from 2022 to 2025 ($N = 356$). Descriptive statistics and chi-square analyses examined patterns across years. Findings indicated that participants were predominantly female, white, and from rural or town settings, with participation concentrated among upperclassmen. Results also revealed uneven participation across demographic groups and limited diversity at the national level.

Study two examined motivation patterns using EVT constructs. Descriptive statistics and multiple linear regression were used to analyze the relationships between subjective task value components and expectancy beliefs. Findings indicated that participants reported high levels of confidence and task value. Cost, attainment value, intrinsic value, and social value were significant predictors of expectancy beliefs, while utility value was not, suggesting that preparation effort and personal meaning are more strongly associated with competitive confidence than perceived career benefits.

Study three examined postsecondary plans, career aspirations, and perceived career-related outcomes. Descriptive statistics and correlation analyses were used to assess relationships among career intentions, perceptions of career impact, and years of FFA involvement. Results indicated that most participants planned to attend a four-year university, and a majority intended to pursue agriculture-related careers. Participants reported positive perceptions of the Floriculture CDE's contribution to future success and increased knowledge of agricultural careers. A moderate positive relationship was found between perceived contribution to success and career knowledge, while years of FFA involvement showed a small but significant relationship with agricultural career intentions.

Overall, findings suggest that participation in the Floriculture CDE supports student motivation, career awareness, and workforce readiness. However, results also highlight the need to expand access and increase participation diversity, as well as to strengthen intentional connections between experiential learning opportunities and career pathways. Continued research and program development are needed to ensure that Career Development Events effectively support a diverse population of students in achieving their educational and career goals.

Artificial Intelligence (AI) Use Disclosure Statement

In the preparation of this dissertation, the following Artificial Intelligence (AI) tools were used: Grammarly and Gemini 3 Flash. These tools were used primarily to assist with formatting, reference checking, grammar, and spelling. The author acknowledges full responsibility for the intellectual content of this work and has ensured that all AI-assisted sections have been reviewed and revised for accuracy and appropriate academic style. All AI-generated content was reviewed and validated for relevance, appropriateness, and accuracy before incorporation into the final document to maintain scholarly integrity of this research.

Digital Accessibility Use Disclosure Statement

In the preparation of this thesis / dissertation, the following digital accessibility tools were used to ensure this document complies with federal requirements: Microsoft Accessibility Checker and Adobe Accessibility Check. The author acknowledges full responsibility for the intellectual content of this work and has made a good faith effort to comply with digital accessibility requirements in publishing, wherein the nature of the content does not significantly change in order to do so. Furthermore, all content has been reviewed and revised to meet these requirements prior to final publication.

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List of Abbreviations

AFNR	Agriculture, Food, and Natural Resources
CDE	Career Development Events
EVT	Expectancy Value Theory
SAE	Supervised Agricultural Experience
SBAE	School-Based Agricultural Education

Chapter 1: Introduction

Career Development Events (CDEs) have long been a foundational component of school-based agricultural education (SBAE), providing students with structured opportunities to apply classroom instruction, Supervised Agricultural Experiences (SAEs), and leadership development skills in authentic, industry-aligned contexts. Through participation in CDEs, students engage in experiential learning that promotes technical skill development, critical thinking, teamwork, and career exploration. Beyond recognizing student achievement, these events are designed to foster motivation, confidence, and sustained interest in agricultural careers (Bowling, 2010; Croom et al., 2009).

The National FFA Organization positions Career and Leadership Development Events as inclusive, student-centered experiences that provide recognition opportunities and inspire members to explore and prepare for careers across the Agriculture, Food, and Natural Resources (AFNR) career pathways (National FFA Organization, 2025). Collectively, these events support preparation for hundreds of careers in agricultural science, business, and technology, reinforcing the role of CDEs as a critical link between secondary agricultural education and workforce development (Lundry et al., 2015). By emphasizing applied problem solving and performance-based assessment, CDEs demonstrate meaningful connections between classroom instruction and real-world agricultural scenarios (Bowling, 2010).

CDEs have been integral to agricultural education and the National FFA Organization since 1947, evolving from contests focused on practical farm skills into comprehensive experiences that prepare students for both academic and vocational

pathways in agriculture (Warfield-Oyirifi, 2016). Today, National FFA CDEs are intended to give students opportunities to practice skills learned in the classroom and through experiential learning, while also connecting them with industry standards and expectations (Croom et al., 2009).

Among the National FFA Organization's competitive events, the Floriculture CDE stands out for integrating plant science, business management, problem-solving, and floral design skills that directly align with workforce needs in the green industry. The event's comprehensive structure, including a knowledge examination, plant material identification, problem-solving and decision-making scenarios, employment and customer service components, technical floral skills, and team-based activities, enables students to tackle real-world floriculture challenges by applying the knowledge and skills developed through agricultural education coursework (Petrovic, 2015). These integrated experiences reflect the broader expectation that competitive and leadership activities within FFA be closely aligned with high-quality curriculum to enhance student engagement and learning outcomes (Talbert & Balschweid, 2004).

As participation in agricultural education continues to diversify and expand, understanding who participates in national-level CDEs, why students choose to engage, and how participation influences motivation and career aspirations has become increasingly important. While prior research has examined the educational value of CDE participation broadly, limited national-level research has focused specifically on the Floriculture CDE and the personal characteristics, motivational patterns, and career outcomes of its participants. This study seeks to address that gap by examining student

participation in the National FFA Floriculture CDE across multiple years and through multiple analytical lenses.

Background

Career Development Events in Agricultural Education

CDEs are academically based competitions within school-based agricultural education programs that reinforce classroom instruction and experiential learning through applied, performance-based activities (Bowling, 2010; Rayfield et al., 2009). As a component of career and technical education, agricultural education is intended to develop the knowledge and skills necessary for successful employment, career entry, and career advancement, with CDEs serving as a key instructional mechanism supporting these outcomes (Lundry et al., 2015). Through competition, students are provided opportunities to demonstrate technical competence, problem-solving ability, and career readiness in authentic, industry-aligned contexts. Competency is defined as the knowledge, skills, and abilities to perform a given task (Buford, et al., 398; Dooley, et al., 2002).

The agricultural education program is traditionally organized around a three-component, intra-curricular model consisting of classroom and laboratory instruction, experiential learning through SAEs, and leadership development through FFA involvement (Mouser et al., 2019; Talbert & Balschweid, 2004). CDEs function at the intersection of these components, requiring students to integrate conceptual knowledge gained in the classroom, technical skills developed through SAEs, and leadership and teamwork skills fostered through FFA participation (Warfield Oyirifi, 2016). CDEs are

frequently described as laboratory-style experiences that reinforce and extend agricultural education curriculum through competitive application (Bowling, 2010).

Historically, CDEs were developed to test students' technical agricultural knowledge and to strengthen connections between classroom instruction and real-world agricultural applications (Bowling, 2010). Over time, however, the purpose of CDEs has expanded beyond competition alone to include instructional reinforcement and student preparation for agricultural careers (Thieman et al., 2010). Contemporary CDEs emphasize applied problem-solving, decision-making, communication, and teamwork, reflecting the evolving demands of the agricultural industry and workforce (Rayfield et al., 2009).

The National FFA Organization positions CDEs as opportunities to recognize achievements in skill development and knowledge acquisition, including employability skills such as teamwork, communication, collaboration, and creative problem solving aligned with Bloom's Taxonomy (National FFA Organization, 2025). Through both individual and team-based events, students can showcase agricultural knowledge and skills in competitive settings that mirror workplace expectations and industry standards (Rayfield et al., 2007). These events are intended to provide students with opportunities to practice skills learned in the classroom and on the job while strengthening connections between students and the agriculture industry (Croom et al., 2009).

CDEs play a substantial role in school-based agricultural education programs nationwide. Approximately three-fifths of the total FFA membership participates in CDEs at some level, underscoring the scope and relevance of these events within agricultural education (Ball et al., 2016). Participation in CDEs has been consistently associated

with positive educational outcomes, including student skill development, motivation, engagement, and confidence (Croom et al., 2009; Goodwin & McKim, 2020).

Furthermore, effective agriculture teachers frequently identify CDE coaching and preparation as a core component of high-quality programs, noting its role in reinforcing content mastery and supporting student growth (Roberts & Dyer, 2004).

The importance of CDEs is also reflected in the time and emphasis SBAE teachers place on preparation. Research indicates that agriculture teachers devote approximately 10% of their professional time to preparing CDE teams, placing CDE preparation among the most significant responsibilities of SBAE instructors (Bowling et al., 2020). More recent studies have similarly identified CDE preparation as one of the top responsibilities of agriculture teachers, requiring substantial time investment beyond regular classroom instruction (Smalley et al., 2025). This commitment reflects the perceived instructional value of CDEs and their role in advancing student learning and career readiness.

Collectively, CDEs function as intra-curricular experiences that blend classroom learning with competitive application, allowing students to demonstrate proficiency in specific agricultural subject areas while developing leadership, personal growth, citizenship, and career-related skills (Ball et al., 2016; Knobloch et al., 2016). By aligning agricultural education curriculum with industry expectations and projected careers in the food, fiber, and natural resources sectors, CDEs remain a central and enduring feature of school-based agricultural education (Croom et al., 2009).

The National FFA Floriculture Career Development Event

The National FFA Floriculture CDE is designed to stimulate student interest in the production, management, and retailing of flowers, plants, and foliage within secondary agricultural education curricula (Bowling, 2010). The event evaluates students' knowledge and skills in plant identification, greenhouse and floral production, business management, and applied problem-solving, reflecting the interdisciplinary nature of careers in the floriculture and green industry sectors. Through participation in the Floriculture CDE, students are challenged to integrate technical expertise with decision-making and communication skills in simulated workplace scenarios aligned with industry standards.

According to the National FFA Organization, the purpose of the Floriculture CDE is to create interest in career preparation across current and emerging aspects of the floriculture industry through leadership development and hands-on technical skill development delivered through the agricultural education curriculum (National FFA Organization, 2025). Assessment within the event includes a combination of written examinations and practicums, such as plant identification, plant disorder diagnosis, tool identification, and general greenhouse and business knowledge, requiring students to demonstrate both conceptual understanding and applied competence (Bowling, 2010).

Advancement through district- and state-level Floriculture CDEs serves as the qualification pathway to national competition, requiring sustained preparation, content mastery, and continued engagement with floriculture-related coursework and experiences (Bowling, 2010). At the National FFA Convention & Expo, Floriculture CDE competitors must demonstrate technical floral skills and comprehensive knowledge of

flowers, plants, and foliage by applying classroom learning in competitive, real-world contexts (Petrovic, 2015). Event activities commonly include team and individual assignments such as propagating plants from cuttings, crafting floral arrangements, and developing product displays that mirror tasks performed in commercial floriculture operations (Petrovic, 2015).

Beyond technical skill development, participation in the Floriculture CDE provides students with opportunities to engage in teamwork, public speaking, problem-solving, and preparation for future career aspirations (Russell et al., 2009). As participation in the Floriculture CDE has grown, so too has the diversity of students engaging in the event. However, limited empirical research exists describing the personal characteristics of national-level Floriculture CDE participants, the motivational factors influencing their sustained involvement, and the extent to which participation shapes long-term career aspirations within the green industry. Understanding these dimensions is essential for ensuring that the Floriculture CDE remains educationally relevant, inclusive, and aligned with workforce expectations.

Statement of the Problem

Prior research has examined CDE participation across a range of outcomes, including student skill development, advisor perceptions, and program-level effectiveness (Ball et al., 2016; Bowling, 2010; Croom et al., 2009). Studies have consistently documented positive associations between CDE participation and student confidence, career knowledge, and engagement in agricultural education (Goodwin & Kim, 2020; Knobloch et al., 2016). Although CDEs are widely recognized as valuable instructional components of school-based agricultural education, notable gaps remain in

the literature regarding national-level patterns of student participation and motivational drivers. Previous research has documented the educational benefits and perceived value of CDE participation; however, limited national-level research has examined who participates in National FFA CDEs and the factors that influence students' decisions to engage in and persist in these experiences (Croom et al., 2009).

Specifically, there is limited research examining (a) the personal characteristics of students who qualify for the National FFA Floriculture CDE, (b) the motivational factors influencing student participation and preparation, and (c) the extent to which participation in a national-level floriculture competition shapes students' career aspirations in the green industry. Existing studies have often focused on advisor perceptions, program outcomes, or competitive performance rather than examining motivation from the youth participant perspective (Jones, 2013; Knobloch et al., 2016). Additionally, research has not sufficiently explored the intrinsic and extrinsic motivational factors that influence students' initiation and continuation in experiential learning activities such as CDEs (Bird et al., 2013; Jones, 2013).

While CDEs are intended to prepare students for future careers, there is limited consensus on the extent to which participation directly influences students' career decision-making or perceptions of future career value (Lundry et al., 2015; Talbert & Balschweid, 2006). As enrollment in school-based agricultural education programs continues to increase, there is a growing need to examine not only the relevance of CDEs but also patterns of student participation and representation over time and across competitive levels (Smalley et al., 2025). Prior research has identified the underrepresentation of certain student populations at the national CDE level, raising

questions about access, equity, and inclusion in competitive agricultural education experiences (Croom et al., 2009).

Agricultural education programs also face increasing pressure to demonstrate academic validity and career readiness outcomes comparable to those in other subject areas, such as mathematics and reading (Mouser et al., 2019). Without a clearer understanding of the characteristics of national-level CDE participants, the motivational factors influencing participation, and the career-related outcomes associated with competition, it becomes difficult for event organizers, educators, and industry partners to make informed decisions about event structure, content emphasis, recruitment strategies, and sponsorship alignment. Addressing these gaps is essential to ensure that CDEs, and the National FFA Floriculture CDE in particular, remain educationally relevant, inclusive, and aligned with workforce needs.

Statement of Purpose and Research Questions

The purpose of this study is to examine the personal characteristics, motivation, and participation patterns of students competing in the National FFA Floriculture CDE and to evaluate how participation influences students' career interests in the floriculture and green industry sectors. These studies were derived from three research questions:

1. What personal characteristics and participation patterns describe students who qualify for and compete in the National FFA Floriculture CDE across multiple years?
2. What motivational factors, sense of belonging, and perceptions of confidence influence student participation and engagement in the National FFA Floriculture CDE?

3. How does participation in the National FFA Floriculture CDE relate to students' postsecondary plans and career aspirations within the floriculture and green industry sectors?

Theoretical Framework

This dissertation is guided by Expectancy Value Theory (EVT) as the primary framework for examining student motivation, engagement, persistence, and career-related decision-making in the context of the National FFA Floriculture CDE (Eccles & Wigfield, 2002; Wigfield & Eccles, 2000). EVT offers a comprehensive lens for understanding why students choose to participate in competitive experiential learning activities, how they evaluate those experiences, and how those evaluations influence their preparation behaviors, confidence, and future career intentions.

Expectancy Value Theory

Originally developed by Eccles and Wigfield to explain students' academic achievement choices, Expectancy Value Theory proposes that individuals' achievement-related choices are primarily shaped by two factors: their expectations for success and the subjective value they assign to a task or domain (Eccles & Wigfield, 2002; Wigfield & Eccles, 2000). Motivation is often conceptualized as the product of expectancy and value (Bandhu et al., 2024; Loh, 2019). Within this framework, students are more likely to engage in, persist in, and invest effort in activities when they believe they can succeed and perceive the activity as valuable.

Expectancy for success refers to individuals' beliefs about their competence and the likelihood of performing well on a specific task (Eccles & Wigfield, 2002; Loh, 2019; Plante et al., 2013). In their foundational work, Eccles and Wigfield distinguished

expectancy beliefs from self-concepts by emphasizing their task specific and future oriented nature meaning students are not simply evaluating their general ability but actively predicting their likelihood of success on a particular activity (Wigfield & Eccles, 2000). These beliefs align closely with academic self-concept and self-efficacy (Eccles & Wigfield, 2002; Loh, 2019). Students who perceive themselves as capable in a domain are more likely to engage in preparation behaviors, persist through challenges, and demonstrate confidence in performance-based settings.

Subjective task value refers to the reasons individuals choose to engage in an activity and comprises four primary components identified by Eccles and Wigfield: attainment value, intrinsic value, utility value, and cost (Eccles & Wigfield, 2002; Loh, 2019; Plante et al., 2013; Smit et al., 2020; Wigfield & Eccles, 2000).

- Attainment value - reflects the personal importance of doing well in an activity.
- Intrinsic value - refers to enjoyment or interest in the task itself.
- Utility value - represents perceived usefulness for future goals, such as career aspirations.
- Cost - includes perceived effort, time demands, stress, or opportunity trade-offs associated with participation.

Research grounded in EVT shows that expectancy beliefs are strong predictors of performance outcomes, whereas task values, particularly utility value, are closely linked to long-term persistence and career-related decisions (Plante et al., 2013). Students may enjoy an activity yet choose not to pursue it further if they perceive low utility or high cost, even when intrinsic interest is present (Smit et al., 2020).

Application of EVT Across Studies

In Study 2, Expectancy Value Theory is used to examine how expectancy beliefs (confidence and perceived competence) and task values (interest, career relevance, enjoyment, and external incentives) relate to preparation behaviors and perceived outcomes associated with participation in the National FFA Floriculture CDE. Students' willingness to study independently, practice on weekends, and invest time with their team can be interpreted as behavioral manifestations of high expectancy and high value. Additionally, a sense of belonging may reinforce attainment and intrinsic value, strengthening overall motivation to persist.

In Study 3, EVT provides the theoretical foundation for examining how participation in the Floriculture CDE relates to postsecondary plans and career aspirations. Utility value related to the perceived relevance of floriculture skills to future employment or continued education serves as the central explanatory construct. Expectancy beliefs may also influence whether students view themselves as capable of pursuing agricultural careers.

By grounding both studies in Expectancy Value Theory, this dissertation maintains a cohesive theoretical framework that explains: (a) why students participate and persist in competitive experiential learning environments; and (b) how those experiences shape educational and career-related decisions. EVT offers a well-supported framework for understanding patterns of motivation and the long-term outcomes associated with participation in the National FFA Floriculture CDE.

Significance of the Studies

The findings of this dissertation are intended to guide agricultural educators, CDE superintendents, and industry partners in further examining the role of national-level CDEs in supporting student motivation, engagement, and career development. This research may serve as a foundation for continued discussion and improvement of the National FFA Floriculture CDE, particularly regarding event design, advisor preparation, and strategies for recruiting and retaining diverse student participants. These findings may also inform future research on how participation in national CDEs contributes to workforce development pathways in the floriculture and green industry sectors.

Dissertation Organization

This dissertation is organized into five chapters. Chapter 1 introduces the study and establishes the conceptual foundation. Chapters 2 through 4 present three separate but related research studies. Chapter 5 summarizes findings and provides implications and recommendations for research and practice.

Chapter 2: Study 1: Personal Characteristics and Participation Patterns of National FFA Floriculture CDE Participants

Introduction

Career Development Events (CDEs) extend classroom instruction in school-based agricultural education, providing structured opportunities for students to apply technical knowledge and skills in authentic, career-related contexts (Goodwin & McKim, 2020). Through participation in CDEs, students engage in applied learning experiences that reinforce content mastery and connect academic instruction to industry-aligned practice areas such as horticulture, animal science, and natural resources (Knobloch et al., 2016). As an inter-curricular component of agricultural education programs, CDEs provide a setting in which student learning, preparation, and performance can be examined beyond traditional classroom measures.

The National FFA Floriculture CDE applies this instructional model within a floriculture context, emphasizing experiential, hands-on competencies aligned with the green industry. The event incorporates multiple practicum-based components that simulate real-world workplace tasks, including floral design, plant propagation, greenhouse management, retail pricing, and customer sales interactions (National FFA Organization, 2025). Advancement to the national level requires sustained preparation and success through local, district, and/or state competitions, making participation in the National FFA Floriculture CDE both selective and representative of students who have demonstrated proficiency in floriculture-related content and skills.

Despite the widespread use of CDEs as instructional tools, limited national-level research has examined the personal characteristics and qualification pathways of students who participate in specific CDEs over time (Croom et al., 2009; Knobloch et al., 2016; Talbert & Balschweid, 2006; Warfield Oyirifi, 2016). Understanding who qualifies for national-level competition, when students enter the competitive pipeline, and how participant characteristics change over time is essential for evaluating equity, access, and representation in competitive agricultural education experiences. Examining these factors provides foundational context for interpreting later analyses related to student motivation, belonging, and career aspirations.

Review of Literature

Career Development Events as Experiential Learning

Experiential learning has long been central to agricultural education, emphasizing learning through direct engagement, application, and reflection (Bird et al., 2013). CDEs align with this tradition by providing real-world, hands-on experiences that enable students to apply classroom and laboratory instruction in authentic, competitive settings (Lundry et al., 2015). Authenticity remains an important dimension of applied learning in agricultural contexts. McKibben and Murphy (2021) examined project-based learning within an authenticity lens as a reinforcing value for structuring experiences for realistic tasks and meaningful applications. Through applied problem solving, decision-making, and performance, CDE participation extends learning beyond the traditional classroom (Lundry et al., 2015).

CDEs have been described as a “classic example of experiential learning,” emphasizing learning by doing within performance-based contexts (Rayfield et al., 2009).

Preparation for CDEs reinforces higher-order thinking and applied skill development, requiring students to integrate content knowledge with technical skills through sustained practice (Goodwin & McKim, 2020; Bowling et al., 2020). Student learning occurs before, during, and after competition through preparation, hands-on practice, and reflective conversations with advisors and peers (Smalley et al., 2025).

Research indicates that CDE participation requires sustained engagement in applied learning environments that emphasize performance and skill demonstration (Bowling, 2010; Ball et al., 2016). Students reported that participation in national CDEs evaluated their knowledge and abilities in agriculture-specific subject matter, and that classroom instruction provided an important foundation for successful performance (Croom et al., 2009). Teachers often transition from instructional to coaching roles during CDE preparation, further reinforcing experiential and performance-based learning (Bowling, 2010).

Within agricultural education programs, CDEs are designed as experiential components that integrate technical knowledge, leadership development, and decision-making across content areas (Talbert & Balschweid, 2004; Knobloch et al., 2016). In floriculture, experiential learning is emphasized through industry-based tasks, including production planning, floral design, retail pricing, and customer sales simulations (National FFA Organization, 2025). Collectively, the literature supports the role of CDEs as experiential learning environments that reinforce classroom instruction and promote the development of applied skills and industry relevance.

Student Participation Patterns in FFA Competitive Events

Research indicates that participation in FFA competitive events varies widely across programs and student populations. While CDEs are a central component of agricultural education, participation is not universal. Studies show that approximately two-fifths of FFA members never participate in a CDE, and fewer than half advance beyond the chapter level of competition (Talbert & Balschweid, 2004). Similarly, only 56% of FFA members in Oklahoma reported participating in CDEs, highlighting uneven engagement across programs (Russell et al., 2009). At the national level, less than 10% of respondents reported participating in a National CDE, underscoring the selectivity of national competition (Talbert & Balschweid, 2006), even as tens of thousands of students advance annually from local, district, and state contests (Warfield Oyirifi, 2016).

Participation patterns also vary by demographic and contextual factors. Urban students have been identified as underrepresented in FFA participation compared with their rural counterparts, with reported participation rates of 52% for urban students and 71% for rural students (Martin & Kitchel, 2014). Among national CDE participants, gender representation has been reported as nearly balanced, with females comprising a slight majority of respondents (Croom et al., 2009). Grade-level participation trends indicate that juniors and seniors represent the largest proportion of CDE participants, and most national competitors have been FFA members for three or more years prior to participation (Croom et al., 2009; Jones, 2013).

Participation in CDEs often reflects sustained engagement throughout a student's high school experience. Many students participate in multiple CDEs or

Leadership Development Events, with nearly half reporting involvement in more than one CDE (Bowling et al., 2020; Knobloch et al., 2016). However, over half of respondents indicated that their current CDE was their first experience in that specific event area, suggesting both size and specialization in participation patterns (Knobloch et al., 2016).

Preparation for CDEs typically involves a combination of in-class instruction, after-school practices, independent study, and weekend or holiday preparation (Ball et al., 2016; Bowling, 2010; Croom et al., 2009). Students reported dedicating one to five hours per week to preparing for national-level events, often engaging in both individual and team-based preparation, with internal competition among team members early in the process (Ball et al., 2016; Croom et al., 2009). Advancement to higher levels of competition requires qualification through district- and state-level events, limiting national participation to students who successfully progress through these competitive pathways (Bowling, 2010; National FFA Organization, 2025).

Collectively, the literature shows that participation in FFA competitive events is widespread but uneven, shaped by qualification structures, demographic factors, and sustained student commitment over time. These findings emphasize the need to examine participant characteristics and qualification patterns at the national level to better understand access and representation within CDEs.

Belonging, Diversity, and Representation in Agricultural Education

Agricultural education programs have historically served predominantly rural populations, reflecting the organization's origins in production agriculture. As urbanization increased and fewer students from farm backgrounds entered agriculture,

programs had to adapt experiential learning models to serve non-farm and urban students (Bird et al., 2013). Despite these shifts, agricultural education programs and FFA chapters remain disproportionately concentrated in rural areas, contributing to ongoing challenges with access and representation for urban and diverse student populations (Warfield Oyirifi, 2016).

Research has identified multiple barriers to participation that disproportionately affect urban and underrepresented students. Negative peer perceptions, limited access to role models, and misalignment between agricultural programs and local community contexts have been cited as factors that discourage urban students' participation (Martin & Kitchel, 2014). Historical demographic shifts and systemic structures within agricultural education have further contributed to the underrepresentation of minority populations in FFA participation and competitive events (Warfield Oyirifi, 2016). At the national level, equity concerns are particularly relevant because success in CDEs can influence student recognition, exposure to industry, and access to future educational and career opportunities (Warfield Oyirifi, 2016).

National FFA has explicitly stated that competitive events should be “inclusive and engaging for all students and FFA members,” emphasizing broad participation and accessibility (National FFA Organization, 2025, p.2). However, studies suggest that representation at the highest levels of competition remains uneven. National-level survey data indicate that the majority of respondents identified as White, though slight increases in diversity have been observed over time (Talbert & Balschweid, 2006). Notably, no African American students were represented among respondents in one national CDE study, leading researchers to identify African American students as an

underserved population and to recommend targeted recruitment and engagement efforts (Croom et al., 2009).

While demographic differences persist, some research indicates progress toward broader representation. More than half of respondents in a national study reported living in suburban or urban areas, suggesting a shift away from participation in rural areas exclusively (Talbert & Balschweid, 2006). Gender participation in certain national-level CDEs has also been reported to be nearly evenly split, indicating representation of both male and female students (Rayfield et al., 2007). Additionally, participants in CDEs have represented a wide range of grade levels, genders, and event areas, indicating broad accessibility within competitive agricultural education (Knobloch et al., 2016).

Beyond demographic representation, a sense of belonging has been identified as an important component of student participation in CDEs. Research has shown that students often develop strong team identity and experience feelings of belonging through cooperation, shared goals, and collective success during CDE preparation and competition (Ball et al., 2016). Participation in CDEs has been associated with the development of friendships and social connections within agricultural education programs, with relatedness emerging as a central motivational component for participants (Ball et al., 2016). These findings emphasize the importance of examining both representation and belonging when evaluating participation patterns in national-level CDEs.

Qualification Pathways and Competitive Progression

Participation in National FFA CDEs occurs within a structured, multi-level competitive system that requires students to advance through progressively selective

stages. Advancement typically begins at the chapter or local level and continues through district, area, and state competitions before students are eligible to participate at the national level (Rayfield et al., 2007; Warfield Oyirifi, 2016). Participation at each successive level requires sustained preparation and successful performance, resulting in decreasing participation as competition intensity increases (Talbert & Balschweid, 2004, 2006).

Qualification requirements for national participation are governed by state association certification processes, which include eligibility verification, deadlines, and adherence to National FFA guidelines (National FFA Organization, 2025). While some CDEs allow invitational entry, many require advancement through qualifying competitions at the local, district, or regional level, with requirements varying by event and region based on content domain competitiveness (Knobloch et al., 2016). In the Floriculture CDE, teams advancing to the state level are ranked using a gold, silver, and bronze grouping system, with only the top-ranking team earning the opportunity to represent the state at the National FFA Convention (Bowling, 2010).

Research indicates that CDE participation follows a structured progression, beginning with broad recruitment and narrowing through performance-based selection to a final competitive team (Ball et al., 2016). Team membership is limited, requiring students to earn placement through preparation, practice, and demonstrated proficiency, and motivation and preparation intensity increase at higher levels of competition (Ball et al., 2016). Previous CDE experience has been shown to positively influence performance, suggesting that sustained engagement across competitive levels contributes to student success (Thieman et al., 2010).

Participation data further show that only a small percentage of FFA members advance to national-level competition, with most students participating at the chapter, district, or state levels, or not at all (Talbert & Balschweid, 2004). Advancing to state and national competitions has been identified as a motivating goal for students, reflecting both competitive aspiration and commitment to continued involvement in the FFA organization (Jones, 2013; Russell et al., 2009). National participation ultimately requires both qualification through competitive advancement and students' voluntary commitment to represent their state program (Croom et al., 2009).

Within the Floriculture CDE, national-level participation occurs through a culminating competitive experience, with recognition awarded to top teams and individual competitors representing state programs from across the country (Petrovic, 2015). Collectively, the literature highlights the structured and selective nature of qualification pathways in CDEs, underscoring the importance of examining who advances to national competition and how competitive progression shapes participation patterns over time.

Conceptual Framework

The conceptual framework for Study 1 is grounded in the experiential learning model of school-based agricultural education and the structured competitive progression of CDEs. CDEs serve as inter-curricular experiences that extend classroom instruction through applied learning and performance-based assessment, with advancement occurring through progressively selective levels of competition (Talbert & Balschweid, 2004; Rayfield et al., 2009).

Participation in national-level CDEs marks the culmination of access to experiential learning opportunities and successful advancement through established qualification pathways. Advancement typically occurs through chapter, district, and state-level competitions, with participation decreasing at each successive level (National FFA Organization, 2025; Warfield Oyirifi, 2016). As a result, national-level participation reflects not only student interest but also structured eligibility requirements and competitive progression.

Within this framework, participant characteristics, including gender, race/ethnicity, geographic context (rural, town, suburban, or urban/city), current grade level, grade level at qualification, and prior competitive experience, are examined as descriptive indicators of who qualifies for and participates in the National FFA Floriculture CDE. These characteristics interact with qualification structures to shape the patterns of participation observed at the national level.

Guided by this framework, Study 1 examines national Floriculture CDE participation as a function of participants' personal characteristics and competitive progression pathways. By describing these elements over years of participation, the study establishes a foundational understanding of patterns in representation, access, and qualification within the National FFA Floriculture CDE, providing essential context for the analyses presented in subsequent chapters of this dissertation.

Purpose and Objectives

The purpose of Study 1 is to describe the personal characteristics and participation patterns of students competing in the National FFA Floriculture Career Development Event.

The objectives of this study are to:

1. Describe the participants of the National FFA Floriculture CDE.
2. Determine the qualifications of the National FFA Floriculture CDE participants.
3. Identify patterns in participant characteristics across years of national competition.

Methods

This study utilized a cross-sectional quantitative survey design (Creswell & Creswell, 2018) with participant responses collected electronically following the National FFA Floriculture CDE from 2022 through 2025. A cross-sectional design involves collecting data from participants at a single point in time rather than following the same individuals over an extended period (Wang & Cheng, 2020). Survey research was selected for this study because it provides a quantitative description of characteristics within a defined population by sampling that population (Creswell & Creswell, 2018). The design allowed for systematic examination of participant demographics, qualification characteristics, and participation patterns across multiple years of national competition.

The purpose of Study 1 was to describe the personal characteristics of National FFA Floriculture CDE participants, determine their qualification pathways, and identify patterns in participant characteristics across years of national competition. A quantitative approach was appropriate because the variables of interest were categorical and required descriptive and comparative statistical analyses.

Participants

The population of interest for this study included all students who competed in the National FFA Floriculture CDE during the 2022, 2023, 2024, and 2025 National FFA Conventions. According to official National FFA records, 711 students competed in the Floriculture CDE across these four years. Once a student competes in a national contest, they are ineligible to compete in the same national contest again (National FFA Organization, 2025). The population of this study was 711 non-repeated individuals competing across four years (2022, 2023, 2024, & 2025).

Participants were secondary school students and active members of the National FFA Organization who qualified for national competition through state-level advancement and certification processes. National eligibility guidelines required that participants be enrolled in grades 7–12 at the time of qualification and be certified by their respective state associations prior to competition.

A total of 356 usable survey responses were collected from national competitors across the four-year period, representing approximately 50% of all competitors during that timeframe, see Table 1.1. Participation in the survey was voluntary. Due to the nature of voluntary participation, not all respondents answered every question; therefore sample sizes varied slightly across analyses. Respondents represented multiple states, grade levels, residence types, and prior levels of competitive experience. Non response error was controlled using Lindner's convention (2001). This study was approved by the Auburn University Institutional Review Board (Protocol STUDY00000710, Appendix 1).

Table 1.1***National FFA Floriculture CDE Participants by Year of Competition***

	Total National CDE Participants	Total National CDE Participants	Survey Respondents	Survey Respondents
Year	<i>n</i>	%	<i>n</i>	%
2022	176	24.8	23	6.5
2023	176	24.8	122	34.3
2024	171	24.1	110	30.9
2025	188	26.4	101	28.4
Total	711	100	356	100

Note. Total national participation counts were obtained from official National FFA Floriculture CDE records. Survey respondents represent students who completed the study instrument.

Instrumentation and Data Analysis

Data for this study were collected using the CDE Student Survey, an institutional questionnaire developed by the National FFA Organization's Program Evaluation and Assessment Team for the purpose of evaluating student experiences across national career and leadership development events. The survey was administered to participants following the National Floriculture CDE at the 2022, 2023, 2024, and 2025 National FFA Conventions as part of the National FFA Organization's ongoing program evaluation efforts. Access to the survey data was obtained through a formal research collaboration agreement with the National FFA Organization, consistent with the organization's research proposal process (National FFA Organization, 2024).

The instrument included items designed to capture personal characteristics and qualification pathways relevant to the objectives of Study 1.

Variables analyzed in this chapter included:

- Year of national competition (2022, 2023, 2024, 2025)
- Gender

- Race/ethnicity
- Residence type (rural, town, suburban, city)
- Current grade level
- Grade level at the time of qualification for national competition
- Highest level previously competed in any Career or Leadership Development Event

All variables were categorical and coded for statistical analysis. Data was collected electronically and exported into IBM SPSS Statistics (Version 31.0.0.0) for analysis.

Descriptive statistics, including frequencies (n) and percentages (%), were calculated to address Objectives 1 and 2, which focused on describing participant characteristics and qualification patterns.

To address Objective 3, chi-square tests of independence were conducted to examine whether participant characteristics differed across years of national competition (2022–2025). Pearson’s chi-square statistic was used to determine whether statistically significant associations existed between year of competition and each demographic or qualification variable. Statistical significance was evaluated at the $\alpha = .05$ level.

Effect sizes were interpreted using Cramer’s V (Ary et al., 2019) to determine the strength of associations when significant relationships were identified. Assumptions of the chi-square test, including expected cell counts, were reviewed prior to interpretation of results.

Limitations

Several limitations should be considered when interpreting the findings of this study. The concerns are consistent with recent agricultural education survey-method research. Emphasizing that nonresponse bias and survey fatigue are continuous barriers for interpretation when researchers use response-optimization strategies (McKibben et al., 2025). First, the voluntary nature of survey participation introduces the potential for non-response bias. Of the 711 students who competed in the National FFA Floriculture CDE between 2022 and 2025, 356 completed the survey instrument, representing approximately 50% of the total population. Students who chose not to participate in the survey may differ systematically from those who did in ways that could affect the findings. For example, students with different levels of engagement, demographic characteristics, or competitive experiences may have been more or less likely to complete the survey. As a result, findings may not fully represent all national Floriculture CDE competitors across the study period.

Second, the notably lower response rate in 2022 (n=23, 6.5%) compared to subsequent years (n=101-122, 28.4-34.3%) limits the comparability of year specific findings. The substantially smaller 2022 sample may not be representative of that year's competitor population and should be interpreted with particular caution. Descriptive statistics and chi-square analyses involving 2022 data may be less stable than those from years with higher response rates.

Third, the cross sectional nature of the study design limits the ability to examine how individuals participants' characteristics or competitive pathways change over time. Because different students were surveyed each year rather than the same individual

tracked longitudinally, the study cannot assess developmental trajectories or how participation patterns for a single cohort evolve across competitive levels. A longitudinal design would be needed to examine how individual students progress through the competitive pipeline from chapter to national competition.

Fourth, the study examined participants from a single CDE, the National FFA Floriculture CDE, which limits the generalizability of findings to other CDE events or agricultural education contexts. Participation patterns, demographic characteristics and qualification pathways observed with the Floriculture CDE may reflect characteristics specific to this event, the green industry content area, or the program demographics associated with floriculture based agricultural education. Findings should not be assumed to represent national CDE participation broadly without comparative data from other events.

Fifth, all demographics and participation data were self reported by student participants. While self report is standard practice in survey based educational research, it introduces the possibility of response bias or inaccuracy, particularly for items such as grade level at qualification, prior competition experience, and residence type, where students may not recall precise details with complete accuracy.

Finally, the study was limited to students who advanced to national level competition and therefore represents a highly selective and self-selected population. The findings describe who reaches nationals, not who participates in Floriculture CDEs at lower competitive levels or who does not participate at all. This limits the ability to draw conclusions about access and representation across the full competitive pipeline, as students who did not advance to nationals are not represented in the data.

Findings

Objective 1: Describe the participants of the National FFA Floriculture CDE.

The first objective of this study was to describe the demographic and academic characteristics of participants in the National FFA Floriculture CDE. Descriptive statistics were calculated to summarize gender, race/ethnicity, residence type, current grade level, and grade when qualified.

Participants were predominantly female (82.6%), with males representing 12.1% of respondents (see Table 1.2). A small percentage of participants identified as nonbinary (0.3%) or chose not to disclose their gender (5.0%). The majority of respondents identified as White/Caucasian (82.3%), followed by Hispanic/Latino participants (6.2%). All other racial and ethnic groups each represented less than 5% of respondents.

With respect to residence type, 40.4% of participants reported living in rural communities (population less than 2,500), while 29.2% resided in towns (population 2,501-10,000). Suburban (10,001-49,999 population) students represented 18.5% of respondents, and 7.6% reported living in cities (population more than 50,000).

Table 1.2
Demographic Characteristics of National Floriculture CDE Participants

Characteristic	<i>n</i>	%
Gender	Gender	Gender
Male	43	12.1
Female	294	82.6
Nonbinary	1	0.3
Choose not to disclose	18	5.0
Race/Ethnicity	Race/Ethnicity	Race/Ethnicity
African American/ Black	2	0.6
American Indian/ Alaskan Native	2	0.6
Asian	4	1.1
Hispanic/ Latino of any race	22	6.2

Characteristic	<i>n</i>	%
Native Hawaiian/ Pacific Islander	3	0.8
White/ Caucasian	293	82.3
Two or more races	11	3.1
Other	2	0.6
Choose not to disclose	17	4.8
Residence Type	Residence Type	Residence Type
Rural (Less than 2,500)	144	40.4
Town (2,501 – 10,000)	104	29.2
Suburban (10,001 – 49,999)	66	18.5
City (More than 50,000)	27	7.6
Choose not to disclose	15	4.2

Note. Participants selected one response per category.

Academic characteristics are presented in Table 1.3. The largest percentage of participants was in 12th grade (35.4%), followed by 11th grade students (26.4%). High school graduates represented 23% of respondents. When examining the grade level at which participants qualified for national competition, most qualified during 11th grade (31.2%) or 12th grade (27.0%), followed by 10th grade (22.2%).

Table 1.3

Academic Characteristics of National Floriculture CDE Participants

Characteristic	<i>n</i>	%
Current Grade Level	Current Grade Level	Current Grade Level
9 th Grade	3	0.8
10 th Grade	33	9.3
11 th Grade	94	26.4
12 th Grade	126	35.4
High School Graduate	82	23
Non applicable	1	0.3
Did not answer	17	4.8
Grade when qualified	Grade when qualified	Grade when qualified
7	1	0.3
8	6	1.7
9	43	12.1
10	79	22.2
11	111	31.2
12	96	27.0
High School Graduate	4	1.1

Characteristic	<i>n</i>	%
Did not answer	16	4.5

Overall, National Floriculture CDE participants were primarily upper-level high school students, predominantly female, and largely from rural or small-town communities.

Objective 2: Determine the qualifications of the National FFA Floriculture CDE participants.

The second objective examined the prior competition experience of National Floriculture CDE participants. As shown in Table 1.4, the majority of respondents (61.5%) indicated that the highest level of competition they had participated in prior to national competition was the state level. Additionally, 19.1% had previously competed at the national level in a different Career or Leadership Development Event. Approximately 10.1% reported that they had not competed before this event.

These findings indicate that most participants had prior exposure to advanced levels of competition before qualifying for the National Floriculture CDE.

Table 1.4
Highest Level of Competition Prior to National Floriculture CDE Participation

Competition Level	<i>n</i>	%
Chapter/ Local	5	1.4
District/Region	12	3.4
State	219	61.5
National (previous/different event)	68	19.1
Have not competed before	36	10.1
Did not answer	16	4.5

Objective 3: Identify patterns in participant characteristics across years of national competition.

The third objective examined whether participant characteristics differed across years of competition (2022–2025). Descriptive statistics by year are presented in Table 1.5. Female participants represented the majority in each year of competition, including 2022 (n= 17, 73.9%), 2023 (n=104, 85.2%), 2024 (n = 93, 84.5%) and 2025 (n = 72, 71.3%). Male participants represented a smaller proportion across the years, ranging from 9.0% in 2023 to 17.4% in 2022. Very few participants identified as nonbinary (n=1, 0.8% in 2023 only), and a small percentage chose not to disclose their gender.

Racial and ethnic composition remained relatively stable across years, with White/Caucasian participants representing the largest proportion annually, including 2022 (n=20, 87%, 2023 (n=108, 88.5%), 2024 (n=93, 84.5%), and 2025 (n = 72, 71.3%). Hispanic/ Latino participants represented the second largest identified racial/ethnic group in most years, 2024 (n=11, 10%) and 2025 (n=9, 8.9%). Representation from other racial and ethnic groups remained limited across the years.

Rural residence remained the most common residence type. Rural participants represented the largest residence category each year, including 2022 (n=12, 52.2%), 2023 (n=51, 41.8%), 2024 (n=46, 41.8%), and 2025 n=35, 34.7%). Town participants increased slightly in later years, with city participants increasing from 0% in 2022 to 10.9% in 2025.

Table 1.5
Participant Characteristics by Year of National Competition

Characteristic	2022 <i>n</i> (%)	2023 <i>n</i> (%)	2024 <i>n</i> (%)	2025 <i>n</i> (%)
Gender	Gender	Gender	Gender	Gender
Male	4 (17.4)	11 (9)	12 (10.9)	16 (15.8)
Female	17 (73.9)	104 (85.2)	98 (89.1)	75 (74.3)
Nonbinary	0 (0)	1 (0.8)	0 (0)	0 (0)
Choose not to disclose	2 (8.7)	6 (4.9)	0 (0)	10 (9.9)
Race/Ethnicity	Race/Ethnicity	Race/Ethnicity	Race/Ethnicity	Race/Ethnicity
African American/ Black	0 (0)	0 (0)	1 (0.9)	1 (1)
American Indian/ Alaskan Native	0 (0)	0 (0)	1 (0.9)	1 (1)
Asian	0 (0)	1 (0.8)	1 (0.9)	2 (2)
Hispanic/ Latino of any race	1 (4.3)	1 (0.8)	11 (10)	9 (8.9)
Native Hawaiian/ Pacific Islander	0 (0)	1 (0.8)	0 (0)	2 (2)
White/ Caucasian	20 (87)	108 (88.5)	93 (84.5)	72 (71.3)
Two or more races	0 (0)	4 (3.3)	2 (1.8)	5 (5)
Other	0 (0)	2 (1.6)	0 (0)	0 (0)
Choose not to disclose	2 (8.7)	5 (4.1)	1 (0.9)	9 (8.9)
Residence Type	Residence Type	Residence Type	Residence Type	Residence Type
Rural (Less than 2,500)	12 (52.2)	51 (41.8)	46 (41.8)	35 (34.7)
Town (2,501 – 10,000)	5 (21.7)	41 (33.6)	31 (28.2)	27 (26.7)
Suburban (10,001 – 49,999)	4 (17)	19 (15.6)	23 (20.9)	20 (19.8)
City (More than 50,000)	0 (0)	6 (4.9)	10 (9.1)	11(10.9)
Choose not to disclose	2 (0.9)	5 (4.1)	0 (0)	8 (7.9)

Note. Percentages calculated within year.

Academic characteristics by year of competition are presented in Table 1.6.

Current grade classifications varied somewhat across years. In 2022, the largest population of participants were 11th grade students (n=9, 42.9%), while 12th grade

students represented the largest population in both 2024 (n=51, 47.2%) and 2025 (n=34, 36.6%). High school graduates also represented a notable portion of the participants beginning in 2023 (n=38, 33.9%), followed by 2024 (n=26, 24.1%), and 2025 (n=35, 37.6%).

Patterns in grade level when participants qualified for the national competition also varied across years. Participants most commonly qualified during their 11th grade or 12th grade year. In 2023, 12th grade qualifiers represented the largest group (n=39, 33.3%), while 11th grade qualifiers represented the largest group in both 2024 (n=37, 33.9%) and 2025 (n=35, 37.6%). Qualifications during middle school grades remained uncommon across all years.

Table 1.6
Academic Characteristics of Participants by Year of National Competition

Characteristic	2022 n (%)	2023 n (%)	2024 n (%)	2025 n (%)
Current Grade	Current Grade	Current Grade	Current Grade	Current Grade
9 th Grade	0 (0)	2 (1.7)	1 (0.9)	0 (0)
10 th Grade	4 (19)	9 (7.7)	8 (7.4)	12 (12.9)
11 th Grade	9 (42.9)	34 (29.1)	22 (20.4)	29 (31.2)
12 th Grade	8 (38.1)	33 (28.2)	51 (47.2)	34 (36.6)
High School Graduate	0 (0)	38 (32.5)	26 (24.1)	18 (19.4)
Non applicable	0 (0)	1 (0.9)	0 (0)	0 (0)
Grade When qualified	Grade When qualified	Grade When qualified	Grade When qualified	Grade When qualified
7	0 (0)	0 (0)	1 (0.9)	0 (0)
8	0 (0)	4 (3.4)	1 (0.9)	1 (1.1)
9	0 (0)	17 (14.5)	13 (11.9)	13 (14)
10	4 (19.0)	26 (22.2)	26 (23.9)	23 (24.7)
11	0 (42.9)	30 (25.6)	37 (33.9)	35 (37.6)
12	8 (38.1)	39 (33.3)	29 (26.6)	20 (21.5)
High School Graduate	0 (0)	1 (0.9)	2 (1.8)	1 (1.1)

Note. Percentages calculated within the year.

Chi-square test of independence (Field, 2013) were conducted to determine whether statistically significant differences existed between year of competition and participant characteristics (see Table 1.7).

No statistically significant relationships were found between year of competition and gender, race/ethnicity, residence type, or grade when qualified. However, current grade level was significantly associated with year of competition, $\chi^2(15) = 26.84$, $p = .03$, although the effect size was small (Cramer's $V = 0.16$). Prior competition level was also significantly associated with year of competition, $\chi^2(15) = 35.98$, $p = .002$, with a small effect size (Cramer's $V = .18$).

These findings suggest that while demographic characteristics remained relatively consistent across cohorts, academic grade level and prior competition experience varied across years of national competition.

Table 1.7
Chi-Square Analysis of Participant Characteristics by Year of National Competition

Variable	χ^2	<i>df</i>	<i>p</i>	Cramer's <i>V</i>
Gender x Year	18.14	12	0.11	0.13
Race/Ethnicity x Year	33.82	27	0.17	0.17
Residence Type x Year	8.73	9	0.46	0.09
Current Grade x Year	26.84	15	0.03	0.16
Grade when Qualified x Year	15.82	18	0.60	0.13
Prior Competition Level x Year	35.98	15	0.002	0.18

Note. Effect sizes interpreted using Cramer's V .

Conclusions, Implications, and Recommendations

Conclusions

The demographic profile of National Floriculture CDE participants was predominantly female and White, with most students identifying as rural or town

residents. These findings align with Croom et al. (2009), who reported that national CDE participants were nearly evenly divided by gender, with females representing a slight majority of respondents, and that most participants were juniors or seniors who had been FFA members for three or more years. Similarly, Talbert and Balschweid (2006) reported that 92% of respondents in their national study identified as White, though proportions had shifted slightly over time.

Croom et al. (2009) also noted that no African American students were represented among their national CDE respondents and explicitly identified African American students as an underserved population in agricultural education and FFA CDE participation. Although the present study included representation across multiple racial and ethnic categories, participation remained disproportionately White, suggesting that concerns about representation at the national CDE level continue to warrant attention.

Regarding academic characteristics, juniors and seniors made up the largest proportion of national competitors. Croom et al. (2009) similarly reported that most participants were upperclassmen and had sustained involvement in FFA prior to national competition. The current findings further demonstrate that most students qualified for national competition during their junior or senior year, reinforcing the cumulative preparation required for advancement.

Regarding qualification pathways, the majority of participants reported prior state-level competition experience. This finding aligns with Bowling (2010), who described CDE participation at the district, state, and national levels and noted that only the top-ranking team advanced to national competition in the Floriculture CDE. Croom et al. (2009) also reported that participation in national CDEs occurred only after

advancement through preliminary qualifying events, demonstrating a structured competitive progression system.

Patterns across years of competition revealed relative stability in gender, race/ethnicity, and residence type. However, statistically significant differences were observed in current grade level and prior competition level across years. Although effect sizes were small, these findings indicate that while demographic composition remained consistent, academic standing and competitive background varied modestly by year.

Talbert and Balschweid (2004) reported that participation in CDEs followed a structured progression from chapter-level to national-level competition, with participation decreasing at higher levels. Similarly, Warfield Oyirifi (2016) described advancement to national competition as requiring progression through multiple competitive stages. The present study reinforces this progression within the Floriculture CDE.

Implications

The findings support prior research that positions CDEs as structured, competitive learning experiences that extend classroom instruction (Goodwin & McKim, 2020) and as experiential components of agricultural education (Talbert & Balschweid, 2004). However, ongoing demographic patterns at the national level highlight ongoing considerations related to representation and access.

Croom et al. (2009) identified the underrepresentation of African American students at the national CDE level as a concern requiring further investigation. Warfield Oyirifi (2016) similarly emphasized that equity in CDEs is essential because national-level success influences students' exposure, recognition, and future opportunities in

agriculture. The present findings reinforce the need to examine recruitment, preparation, and advancement systems to ensure equitable access to national competition.

The structured progression from local to national competition observed in this study aligns with prior descriptions of CDE qualification systems (Bowling, 2010; Talbert & Balschweid, 2004). Because advancement requires sustained preparation and successful performance at lower levels, disparities at early competitive stages may affect national representation. Continued monitoring of participant characteristics over time is therefore warranted.

Recommendations

Consistent with Croom et al.'s (2009) call for additional data on national CDE participants, future research should continue to document demographic and participation patterns across technical areas and over time. Comparative analyses across multiple CDE domains may reveal whether patterns observed in Floriculture are consistent across events or domain specific.

Further research on progression pathways is also recommended. Talbert and Balschweid (2006) found that less than 10% of respondents reported participating in a National CDE, indicating a narrowing of participation at higher levels. Follow-up studies could examine how early participation experiences influence advancement to state and national levels.

Finally, continued investigation into representation and access at the national level is necessary. As Warfield Oyirifi (2016) emphasized, national competition is a visible indicator of opportunity in agricultural education. Ongoing evaluation of

participant characteristics can inform data-driven decisions regarding recruitment, preparation structures, and inclusive programming within the National FFA Organization.

Chapter 3: Study 2: Motivation Patterns and Sense of Belonging of Student Participants in the National FFA Floriculture Career Development Event

Introduction

Career Development Events (CDEs) are widely recognized as meaningful and engaging components of the agricultural education model. Research shows that students report the highest satisfaction with their FFA experiences when participating in CDEs (Russell et al., 2009). Despite these high satisfaction levels, only slightly more than half of FFA members participate in CDEs, representing a lost opportunity for leadership and career development (Russell et al., 2009). These findings suggest that while CDEs are valued by participants, participation is not universal, underscoring the importance of understanding the motivational processes that influence student engagement and persistence.

Expectancy Value Theory (EVT) provides a useful framework for examining why students choose to participate in competitive experiential learning activities such as the National FFA Floriculture CDE. EVT suggests that achievement-related behaviors are primarily influenced by students' expectations for success and the value they assign to the activity (Loh, 2019; Plante et al., 2013). Within this framework, students are more likely to invest effort, persist through challenges, and continue participation when they believe they can succeed and perceive the activity as important, enjoyable, or useful for future goals.

The purpose of Study 2 is to examine motivation patterns, sense of belonging, and perceived confidence among student competitors in the National FFA Floriculture CDE using Expectancy Value Theory as the guiding framework. Specifically, this study

applies EVT to examine how expectancy beliefs (confidence and perceived competence) and subjective task values (interest, career relevance, enjoyment, and external incentives) relate to preparation behaviors, willingness to participate, and perceived outcomes associated with Floriculture CDE involvement.

Review Of Literature

Student Motivation in Agricultural Education

CDEs are widely viewed in agricultural education as motivational tools for student engagement and achievement (Warfield Oyirifi, 2016). As structured, competitive extensions of classroom instruction, CDEs offer students opportunities to demonstrate applied knowledge and skills while exploring careers. Understanding the motivational processes that drive student participation in these events is critical, given their prominence in school-based agricultural education (SBAE).

Motivation is the psychological process that initiates, directs, and sustains behavior toward goals, influencing engagement, persistence, and achievement in learning environments (Bandhu et al., 2024). In educational settings, motivation not only determines whether students choose to participate in an activity but also shapes the intensity and duration of their engagement. Bandhu et al. (2024) emphasized that motivation may stem from intrinsic factors such as interest and enjoyment, as well as extrinsic factors such as rewards and recognition. These motivational influences can operate simultaneously and interact to shape students' achievement-related decisions.

Research in agricultural education indicates that student motivation for CDE participation is multifaceted and dynamic. Students are often initially motivated by teacher encouragement, peer influence, competition, and external rewards (Bowling et

al., 2020). External motivators such as scholarships, jackets, awards, and public recognition have been identified as early influences on participation (Ball et al., 2016). However, as preparation progresses, students frequently report increased motivation stemming from pride, content mastery, personal growth, and career relevance (Ball et al., 2016).

Students themselves have identified career relevance as a primary motivator for participation in national-level CDEs (Croom et al., 2009). In contrast, competition was ranked as the least important motivating factor (Croom et al., 2009). Notably, teachers perceived competition as the primary motivator of student involvement, revealing a disconnect between teachers' and students' perceptions (Croom et al., 2009). Smalley et al. (2025) similarly reported that students identified enjoyment of competition, learning new content, and developing career skills as key motivators for participation. Together, these findings suggest that students' motivations extend beyond competitive success and frequently center on personal growth and career preparation.

Motivational influences may also vary across demographic groups. Croom et al. (2009) found that female students rated career relevance as a stronger motivator than male students, whereas male students rated leadership development and scholarship opportunities more highly. These findings indicate that task values may differ across student populations and should be examined within specific CDE contexts.

Additionally, personal characteristics have been linked to selection and persistence in competitive events. Participants reported being selected for CDE teams because they were hardworking, committed, and goal-oriented (Rayfield et al., 2009).

These traits may reflect strong achievement-related beliefs and perceived competence, both of which are central to students' continued participation.

Talbert and Balschweid (2006) found that the primary motivator for continuing education beyond high school was the desire to obtain a job, reinforcing the central role of career-oriented values in shaping engagement decisions. Given that students consistently identify career relevance as a key motivator for CDE participation (Croom et al., 2009), examining participation through a value-based theoretical lens is particularly appropriate.

Collectively, the literature suggests that student motivation in agricultural education is influenced by perceptions of competence, interest, career relevance, and external incentives. Although CDEs are widely viewed as motivational tools (Warfield Oyirifi, 2016), participation patterns show that not all students engage in them. A deeper understanding of expectancy beliefs and task values is therefore needed to better support student engagement and persistence.

Expectancy Value Theory in Achievement and Competitive Learning Contexts

Expectancy Value Theory holds that achievement-related behaviors are influenced by students' expectations for success and the subjective value they assign to a task (Loh, 2019; Plante et al., 2013). Expectancy beliefs reflect students' perceptions of competence and the likelihood of success, while subjective task value encompasses intrinsic value (interest or enjoyment), attainment value (importance of doing well), utility value (usefulness for future goals), and cost (perceived effort or sacrifice) (Loh, 2019; Plante et al., 2013; Smit et al., 2020).

Research grounded in EVT shows that expectancy beliefs are closely linked to performance outcomes, whereas task values, particularly utility value, are associated with persistence and career-related decisions (Plante et al., 2013). In competitive educational environments such as CDEs, students' decisions to participate and invest effort may reflect both their confidence in their ability to succeed and the value they place on the experience.

Research grounded in EVT has further demonstrated that subjective task value components are not just parallel to expectancy beliefs but are theoretically linked to them, meaning students who assign greater value to an activity, particularly through intrinsic interest and personal importance, tend to engage more deeply, which reinforces and strengthens their perceptions of competence over time (Eccles & Wigfield, 2002; Wigfield & Eccles, 2000). This relationship between task value and expectancy beliefs has been documented across academic achievement contexts (Durik et al., 2006; Plante et al., 2013), competitive sports environments (Fredricks & Eccles, 2005), and career decision making research (Eccles, 2009), suggesting that value perceptions serve as a meaningful precursor to competence beliefs across diverse achievement domains. However, limited research has examined this relationship within competitive experiential learning environments in career and technical education.

cultural education contexts, students frequently cite career relevance, personal growth, and skill development as motivating factors (Croom et al., 2009; Smalley et al., 2025). However, participation patterns indicate that motivational influences vary among students (Russell et al., 2009), making EVT an appropriate framework for examining

how expectancy beliefs and task values shape engagement in the National FFA Floriculture CDE.

Expectancy Beliefs and Perceived Competence in CDE Participation

Expectancy beliefs, or students' perceptions of competence and the likelihood of success, are central to achievement motivation (Loh, 2019; Plante et al., 2013). In agricultural education contexts, perceived competence and self-efficacy have been identified as significant predictors of persistence and continued participation (Bandhu et al., 2024; Knobloch et al., 2016).

Participation in National FFA CDEs has been linked to increased confidence in agricultural knowledge and skills (Croom et al., 2009). Students reported positive perceptions of their preparedness and ability after participating (Croom et al., 2009), and engagement in CDE preparation has been linked to increased mastery and confidence over time (Bowling et al., 2020). This interpretation is consistent with SBAE perceived self-efficacy and skills-based contexts responding to experience. McKibben et al. (2022) indicated that confidence develops through repeated practice and performance opportunities outside of static learning. Self-efficacy has been shown to account for a substantial proportion of the variance in youth motivation in agricultural education settings (Knobloch et al., 2016).

Within the Floriculture CDE context, expectancy beliefs may be reflected in students' confidence in answering technical questions, identifying plant material, diagnosing plant disorders, and applying industry-related knowledge. Examining expectancy beliefs provides insight into how perceptions of competence influence preparation behaviors and sustained engagement.

Subjective Task Value in Career Development Event Participation

In Expectancy Value Theory, subjective task value encompasses intrinsic value, attainment value, utility value, and cost (Loh, 2019; Plante et al., 2013; Smit et al., 2020). Research in agricultural education shows that CDE participation reflects multiple dimensions of task value.

Intrinsic and Utility Value

Students frequently report that enjoyment of learning new content, engaging in competition, and developing career skills are key motivators for participation (Smalley et al., 2025). Established research has examined how novelty functions within project-based learning engage and shape what students learn, the relevance of the learning experience, and motivational factors for extended learning (McKibben et al., 2024). Career relevance has consistently been identified as a primary motivator for national CDE participation (Croom et al., 2009). Talbert and Balschweid (2006) found that the primary motivator for continuing education beyond high school was the desire to obtain employment, reinforcing the importance of utility value in shaping students' decisions. These findings suggest that participation in the Floriculture CDE may be driven in part by intrinsic interest and perceived usefulness for future educational and career goals.

Attainment Value and Social Influences

Attainment value reflects the personal importance of doing well in an activity (Loh, 2019). Research indicates that social influences shape students' perceptions of importance and value. Students have reported feeling supported by teammates, teachers, and family members during CDE preparation (Ball et al., 2016), and encouragement from friends, parents, and coaches has been linked to youth

participation decisions (Knobloch et al., 2016). Students also described pride, accomplishment, and connection to chapter traditions as motivating influences (Russell et al., 2009).

Additionally, students' perceptions of whether FFA activities fit within their school and community culture varied by level of involvement (Martin & Kitchel, 2014), suggesting that social context may shape value perceptions and persistence. Participation has been described as a pathway to increased involvement and advancement within FFA (Jones, 2013), reinforcing the personal and social importance of competitive engagement.

Cost and Investment of Effort

Cost refers to the perceived effort, time, and potential sacrifices associated with participation (Loh, 2019; Smit et al., 2020). Preparing for CDEs often requires sustained practice, independent study, and team collaboration (Ball et al., 2016; Bowling et al., 2020). Students' willingness to invest time and effort may therefore reflect a balance between perceived value and perceived cost. Understanding how students evaluate these trade-offs provides additional insight into persistence and preparation behaviors.

Theoretical Framework

The theoretical framework guiding study 2 was Expectancy Value Theory, which suggests that achievement-related behaviors are influenced by individuals' expectations of success and the value they assign to a task (Bandhu et al., 2024). EVT proposes that students are more likely to engage in activities when they believe they can succeed and perceive the activity as personally valuable. Within this framework, expectancy beliefs represent students' perceptions of their competence or likelihood of success, while

subjective task value reflects the reasons individuals choose to engage in an activity, including intrinsic, attainment, and utility values, as well as perceived costs.

Guided by EVT, and drawing on research demonstrating that subjective task value components predict expectancy beliefs across achievement and competitive contexts (Durik et al., 2006; Eccles & Wigfield, 2002; Fredricks & Eccles, 2005; Wigfield & Eccles, 2000), this study examines whether those relationships hold within the competitive experiential learning environment of the National FFA Floriculture CDE, extending EVT into a career and technical education context not previously examined through this theoretical lens.

Purpose And Objectives

The purpose of this study was to examine the extent to which subjective task value components predict expectancy beliefs among participants in the National FFA Floriculture CDE.

The objectives of this study were:

1. Describe participants' subjective task value beliefs.
2. Describe participants' expectancy beliefs.
3. Determine which subjective task value components significantly predict expectancy beliefs.

Materials and Methods

This study utilized a quantitative survey design (Creswell & Creswell, 2018) to examine the relationships between students' expectancy beliefs and subjective task values among participants in the National FFA Floriculture CDE. Survey research was selected because it allows researchers to collect quantitative descriptions of attitudes,

perceptions, and motivational factors from a population through structured instruments (Creswell & Creswell, 2018). In this study, survey responses were used to examine the extent to which components of subjective task value predicted students' expectancy beliefs regarding their confidence in floricultural knowledge and skills.

Participants

The population of interest for this study included students who competed in the National FFA Floriculture CDE between 2022 and 2025. Participants represented teams from across the United States who qualified through their respective state FFA associations to compete at the national level. Participation in the survey was voluntary, and responses were collected from students who had previously competed in the event. Due to the nature of voluntary participation, not all respondents answered every question; therefore sample sizes varied slightly across analyses. This study was approved by the Auburn University Institutional Review Board (Protocol STUDY00000710, Appendix 1).

According to official National FFA records, 711 students competed in the Floriculture CDE across these four years. Once a student competes in a national contest, they are ineligible to compete in the same national contest again (National FFA Organization, 2025). The population of this study was 711 non-repeated individuals competing across four years (2022, 2023, 2024, & 2025). Participation levels remained relatively consistent across years, with 176 participants competing in both 2022 and 2023. In 2024, 171 students competed, while in 2025 included the largest number of national competitors with 188 participants.

Of the 711 national competitors, 356 (n = 356) participants completed the survey instrument used for this study. Survey respondents represented all four years of competition. The largest number of survey responses was collected in 2023 (n=122, 34.3%), followed by 2024 (n=110,30.9%), and 2025 (n=101, 28.4%). The smallest number of responses was collected in 2022 (n=23, 6.5%). Overall, survey respondents reflected a broad representation of students involved in the National FFA Floriculture CDE across the four-year study period.

Table 2.1
National FFA Floriculture CDE Participants by Year of Competition

	Total National CDE Participants	Total National CDE Participants	Survey Respondents	Survey Respondents
Year	<i>n</i>	%	<i>n</i>	%
2022	176	24.8	23	6.5
2023	176	24.8	122	34.3
2024	171	24.1	110	30.9
2025	188	26.4	101	28.4
Total	711	100	356	100

Note. Total national participation counts were obtained from official National FFA Floriculture CDE records. Survey respondents represent students who completed the study instrument.

Instrumentation and Data Analysis

Data for this study were collected using the CDE Student Survey, an institutional questionnaire developed by the National FFA Organization's Program Evaluation and Assessment Team for the purpose of evaluating student experiences across national career and leadership development events. The survey was administered to participants following the National Floriculture CDE at the 2022, 2023, 2024, and 2025 National FFA Conventions as part of the National FFA Organization's ongoing program evaluation efforts. Access to the survey data was obtained through a formal research collaboration

agreement with the National FFA Organization, consistent with the organization's research proposal process (National FFA Organization, 2024). This study aligns with the National FFA Organization's 2024-2029 research priority areas, including priority 1, making FFA accessible and creating a sense of belonging for all, and priority 3, impact of FFA engagement on career choices (National FFA Organization, 2024).

Although the survey was not developed specifically to operationalize Expectancy Value Theory, items within the instrument align conceptually with EVT constructs as defined by Loh (2019), Plante et al. (2013), and Smit et al. (2020). Items from question 14 of the survey instrument were used in this study and organized into composite variables reflecting EVT constructs.

Expectancy beliefs were measured using eight items that assessed participants' perceived confidence in their floricultural knowledge and skills. These items asked respondents to indicate their level of confidence in their ability to perform tasks such as answering general questions about floriculture, identifying plants, diagnosing plant disorders, selecting plants for mixed containers, and constructing floral designs such as corsages. These items collectively represented expectancy for success, which EVT conceptualizes as an individual's belief about their ability to succeed in a given task.

Subjective task value was measured using several item groups that capture different motivational influences associated with Floriculture CDE participation. Intrinsic value was assessed through items measuring interest and enjoyment, including statements such as wanting to learn something new, liking floriculture, and enjoying competition. Attainment value was measured through items related to personal importance and identity, including developing career skills and interest in floriculture-

related careers or hobbies. Utility value was assessed using items that examined perceived usefulness for future goals, including interest in working in a floral shop, a greenhouse, or becoming more competitive for scholarships and awards. Perceived cost was measured through items related to the time and effort students were willing to invest in preparation, including studying independently, studying with a team, and practicing on weekends. Additional items assessed social influences on participation, including encouragement from friends, parents or guardians, and agricultural education advisors, as well as participants' reported sense of belonging.

Because the instrument was developed by the National FFA Organization for program evaluation purposes rather than specifically for EVT grounded research, the theoretical alignment of items with EVT constructs was determined by the researcher through item review and comparison with established EVT construct definitions. This represents a limitation of the study, as the instrument was not designed, piloted, or validated specifically for the purpose of measuring EVT constructs.

Internal consistency reliability was assessed for each composite using Cronbach's alpha to evaluate the degree to which items within each construct measured consistently. Internal consistency reliability varied across composite variables. While expectancy beliefs ($\alpha = .858$), cost value ($\alpha = .792$), and social value ($\alpha = .754$) demonstrated acceptable to strong reliability, intrinsic value ($\alpha = .664$), attainment value ($\alpha = .657$), and utility value ($\alpha = .507$) fell below the .70 threshold considered acceptable for educational research (Ary et al., 2019). The lower reliability of the attainment value composite likely reflects its two-item structure, as alpha values are mathematically constrained when fewer items are included. The utility value composite demonstrated

particularly low internal consistency, suggesting that its items may capture multiple dimensions of perceived usefulness rather than a single unified construct. Findings associated with intrinsic value, attainment value, and utility value composites should be interpreted with caution, as lower reliability may affect the precision of composite scores and the stability of the relationships identified in the regression analysis.

Responses for the motivation and confidence items were measured using a five-point Likert-type scale ranging from 1 (None) to 5 (A great deal). Higher scores indicated stronger agreement or greater perceived confidence. Composite scores for expectancy beliefs and each subjective task-value component were then created by averaging the items associated with each construct. Within EVT, expectancy beliefs encompass students' perceptions of their competence and likelihood of success in a given domain (Wigfield & Eccles, 2000). While some theoretical treatments distinguish between expectancy for success and self-concept of ability as related but distinct dimensions (Eccles & Wigfield, 2002), the eight confidence items available in the survey instrument collectively reflected a unified dimension of domain specific perceived competence meaning student's confidence in their ability to perform floriculture related tasks. Because the items did not map onto theoretically distinct expectancy subcomponents, and because expectancy beliefs served as the single dependent variable in the regression analysis, a single composite score was constructed by averaging the eight items. This approach is consistent with prior EVT grounded research that has operationalized expectancy beliefs as a unified construct when items reflect a common domain specific competence dimension (Plante et al., 2013).

Subjective task value, by contrast, was retained as five separate composite variables, intrinsic value, attainment value, utility value, cost, and social value, because the study's primary objective was to determine which specific components of task value predicted expectancy beliefs. Collapsing task value into a single composite would have obscured the differential predictive relationships between individual value components and confidence that the regression analysis was designed to detect. This decision reflects the analytical requirements of the research question rather than a theoretical claim that expectancy beliefs are inherently less multidimensional than task value.

Descriptive statistics were used to summarize students' expectancy beliefs and subjective task value responses. Pearson product-moment correlation analyses were conducted to examine relationships among expectancy beliefs and the subjective task value constructs. To address the study's primary objective, a multiple linear regression analysis was conducted to examine the extent to which components of subjective task value predicted students' expectancy beliefs. Expectancy beliefs were the dependent variable, while intrinsic value, attainment value, utility value, perceived cost, and social value were the independent variables. Standardized beta coefficients were used to determine the relative strength of each predictor in explaining variance in expectancy beliefs. Data was exported into IBM SPSS Statistics (Version 31) for analysis. Statistical significance was evaluated at the $\alpha = .05$ level.

Limitations

Several limitations should be considered when interpreting the findings of study 2. First, the voluntary nature of survey participation introduces the potential for non-response bias. Of the 711 students who competed in the National Floriculture CDE between 2022

and 2025, 356 completed the survey instrument, and the analytical sample for study 2 was further reduced to 302 participants due to listwise deletion of cases with missing values across the regression variables. Students who did not complete all relevant items may differ systematically from those who did, and findings may not fully represent all national Floriculture CDE competitors across the study period.

Second, the survey instrument used in this study was developed by the National FFA Organization's Program Evaluation and Assessment Team for program evaluation purposes rather than specifically to operationalize Expectancy Value Theory constructs. The theoretical alignment of items with EVT constructs was determined by the searcher through item review and comparison with established construct definitions, rather than through instrument development procedures designed to ensure content validity. This represents a meaningful limitation, a purpose built EVY instrument with establish properties would provide stronger evidence of construct validity. Findings should be interpreted with awareness that the items reflect a partial operationalization of EVT constructs in the broader theoretical literature.

Third, the cost items in the survey were framed as willingness to invest effort, for example, willingness to study independently or practice on weekends, rather than as perceived burden or sacrifice, which more closely reflects the EVT theoretical definition of cost as a deterrent to participation. This framing difference means the cost composite in this study captures effort investment rather than perceived cost in the strictest theoretical sense, which should be considered when comparing findings to prior EVT research that operationalized cost as a barrier.

Fourth, the cross-sectional design of this study limits causal interpretations of the regression findings. Although cost, attainment value, intrinsic value, and social value were significant predictors of expectancy beliefs, the cross-sectional nature of the data means the directionality of these relationships cannot be confirmed. It is possible that students with higher expectancy beliefs are also more likely to report higher task values, rather than task values driving confidence development. A longitudinal design measuring task values and expectancy beliefs at multiple points across the preparation and competition cycle would be needed to establish directional relationships.

Fifth, the study examined participants from a single CDE, the National FFA Floriculture CDE, which limits the generalizability of motivational findings to other CDE events or agricultural education contexts. Motivational patterns observed within the Floriculture CDE may reflect characteristics specific to this event, including its content area, skill demands, team structure, and the demographic profile of its participants. Whether the task value and expectancy belief relationship identified here holds across other CDE events warrants further investigation.

Sixth, the sample represents a highly self selected and competitive population of students who successfully advanced to national level competition. This population is likely among the most motivated, prepared, and committed CDE participants in the country. As a result, findings may reflect a ceiling effect in motivation and confidence that would not be observed in samples drawn from lower competitive levels. The relationship identified between task values and expectancy beliefs may differ in populations with more variable motivation and preparation levels.

Finally, the regression model explained 33.6% of the variance in expectancy beliefs; the remaining 66.4% reflects factors not measured in this study. Variables such as prior floriculture-specific competitive experience, quality of advisor coaching, program resource availability, and individual personality traits likely contribute to students' confidence and were not captured by the survey instrument. Future research incorporating these factors would provide a more complete account of the motivational processes, shaping competitive confidence in CDE participants.

Findings

Objective One: Describe participants' subjective task value beliefs.

Descriptive statistics were calculated to summarize participants' subjective task value beliefs related to their participation in the National FFA Floriculture CDE. For this study, subjective task value was examined through five composite constructs: intrinsic value, attainment value, utility value, cost, and social influences. These constructs collectively reflect participants' enjoyment of the activity, personal importance attached to participation, perceived usefulness for future goals, willingness to invest time and effort, and influence from significant individuals such as peers, parents, and advisors.

Table 2.2 presents descriptive statistics for each subjective task-value construct. Participants reported the highest mean scores for intrinsic value ($M = 4.37$, $SD = 0.57$) and cost ($M = 4.26$, $SD = 0.72$). The high intrinsic value score suggests that participants enjoyed learning about floriculture and floriculture-related activities that were part of participating in the Floriculture CDE.

Within EVT, cost reflects the perceived effort, time demands, and potential sacrifices associated with participation including what students must give up in order to

engage (Eccles & Wigfield, 2002; Loh, 2019; Smith et al., 2020). High cost scores indicate that participants perceived preparation for the Floriculture CDE as requiring substantial investment in time and effort. In the context of the national level competition, where students had already competed in multiple rounds of competitive advancement, high cost perceptions may reflect the demanding nature of preparation at this level rather than a deterrent to participation.

Together, these findings suggest that participants recognized and accepted the demands of high level CDE preparation, and that perceived costs of participation did not deter engagement in this nationally competitive sample.

Table 2.2
Descriptive Statistics for the Subjective Task-Value Constructs

Variable	<i>M</i>	SD	<i>n</i>
Intrinsic Value	4.37	0.57	302
Attainment Value	3.72	0.86	302
Utility Value	3.52	0.84	302
Cost Value	4.26	0.72	302
Social Value	3.63	0.90	302

Participants also reported relatively high attainment value ($M = 3.72$, $SD = 0.86$), indicating that many participants viewed involvement in the Floriculture CDE as personally meaningful or connected to their identity and goals. Utility value ($M = 3.52$, $SD = 0.84$) reflected students' perceptions that participation in the event could benefit their future educational or career plans. Social value ($M = 3.63$, $SD = 0.90$) indicated a moderate influence of friends, parents, and agricultural education advisors in encouraging participation.

Objective Two: Describe participants' expectancy beliefs.

Expectancy beliefs were measured using a composite variable that reflects students' perceived confidence in their floricultural knowledge and technical skills. These items assessed students' confidence in areas such as identifying plants, diagnosing plant disorders, selecting plant materials, and answering questions related to floriculture production and business practices. These competencies align closely with the technical knowledge and applied skills required for success in the National FFA Floriculture CDE.

As shown in Table 2.3, participants reported relatively high levels of confidence in their ability to perform tasks associated with the Floriculture CDE ($M = 3.73$, $SD = 0.68$). This finding indicates that students who competed at the national level generally perceived themselves as capable of successfully completing the contest's technical and knowledge-based components. These findings also suggest that participants developed confidence not only in floriculture specific knowledge but also in applied problem solving and technical decision-making skills associated with the contest.

Table 2.3
Descriptive Statistics for Expectancy Beliefs

Variable	<i>M</i>	SD	<i>n</i>
Expectancy (Confidence)	3.73*	0.68	302

Note: *interpretation limits for this scale were 1-1.49 Strongly Disagree, 1.50-2.49 Disagree, 2.50-3.49 Neither Agree nor Disagree, 3.50-4.49 Agree, 4.5-5.0 Strongly Agree. (Lindner & Lindner, 2024)

Objective 3: Determine which subjective task value components significantly predict expectancy beliefs.

A multiple linear regression analysis was conducted to determine whether components of subjective task value predicted students' expectancy beliefs. Intrinsic

value, attainment value, utility value, cost, and social value were entered as predictor variables, with expectancy beliefs serving as the dependent variable.

The overall regression model was statistically significant, $F(5, 296) = 29.97$, $p < .001$, explaining 33.6% of the variance in expectancy beliefs ($R^2 = .336$). This result indicates that the combined subjective task-value constructs significantly predicted students' perceived confidence in their floricultural knowledge and skills. Suggesting that students' perceptions of the value and importance of participation were meaningfully related to how capable they believed themselves to be with the Floriculture CDE context.

Cost value emerged as the strongest predictor of expectancy beliefs ($\beta = .273$, $p < .001$). This finding suggests that students who reported a greater willingness to invest time and effort in studying and practicing for the Floriculture CDE also reported higher levels of confidence in their abilities. Suggesting that students who are more committed to preparation and practice tended to develop stronger perceptions of competence and readiness for competition.

Attainment value ($\beta = .163$, $p = .036$) and intrinsic value ($\beta = .137$, $p = .034$) were also statistically significant predictors of expectancy beliefs. These results indicate that students who viewed participation as personally meaningful or connected to their goals reported higher levels of confidence in their floriculture knowledge and skills. Similarly, students who reported greater enjoyment and interest in floriculture also tended to have higher levels of confidence in their knowledge and skills.

Social value ($\beta = .115$, $p = .019$) was a smaller but statistically significant predictor, suggesting that encouragement from friends, parents, or advisors was

modestly associated with higher expectancy beliefs. Although not as strong, the findings suggest that support systems and interpersonal encouragement may still contribute to students' perceptions of competence and preparedness.

Utility value ($\beta = .122$, $p = .092$) was not a statistically significant predictor in the regression model, indicating that perceiving the Floriculture CDE as beneficial for future goals was not strongly associated with students' confidence in their ability to perform well in the contest.

Table 2.4
Regression coefficients for the Expectancy Beliefs Values

Values	<i>B</i>	SE	β	<i>t</i>	<i>p</i>
Cost value	.260	.051	.273	5.074	<.001*
Attainment value	.129	.061	.163	2.103	.036*
Intrinsic value	.163	.076	.137	2.135	.034*
Social value	.088	.037	.115	2.352	.019*
Utility value	.099	.059	.122	1.692	.092

Note: $F(5, 296) = 29.97$, $p < .001$, ($R^2 = .336$)

*significant ($<.05$)

Conclusions, Implications, and Recommendations

Conclusions

The purpose of Study 2 was to examine students' subjective task value beliefs and expectancy beliefs in the National FFA Floriculture CDE, as well as to identify which components of subjective task value predicted students' expectancy beliefs. Expectancy Value Theory proposes that achievement-related behaviors are shaped by both individuals' expectations of success and the value they assign to a task (Bandhu et al., 2024). Students who believe they can succeed and see value in an activity are more likely to participate and persist in that activity. The results of this study shed light on how these motivational constructs function within the context of a national CDE.

Participants reported relatively high levels of expectancy beliefs, indicating that students who competed in the National FFA Floriculture CDE generally felt confident in their floriculture knowledge and technical skills. These findings align with previous research suggesting that participation in CDEs can boost students' confidence in agricultural knowledge and skills (Croom et al., 2009). Students who advance to national-level competitions are typically among the most prepared participants in their programs, which may help explain the high levels of confidence observed in this study.

Among the subjective task value constructs studied, cost was the strongest predictor of expectancy beliefs. Students willing to invest more time and effort in preparing for the Floriculture CDE also reported higher confidence in their ability to succeed in the contest. This suggests that preparation behaviors and effort can play a key role in building students' perceptions of competence. Students who dedicate time to studying and practicing may gain a stronger mastery of contest content, which then boosts their confidence.

Attainment value and intrinsic value were also significant predictors of expectancy beliefs, indicating that students who viewed participation as personally meaningful or aligned with their interests tended to report higher levels of confidence in their floriculture knowledge and skills. Previous research similarly identified enjoyment of competition, learning new content, and developing career skills as key motivators for participation in CDEs (Smalley et al., 2025), and has shown that students often participate in CDEs to support personal growth, mastery of content, and career exploration (Ball et al., 2016; Bowling et al., 2020). Together, these findings reinforce the role of CDEs as engaging experiential learning opportunities that extend beyond competition.

Social influences demonstrated a smaller but significant relationship with expectancy beliefs. Encouragement from friends, parents, and agricultural education advisors may contribute to a supportive environment that promotes participation and persistence in preparation activities. Previous research has highlighted the role of social support in shaping students' engagement in agricultural education programs and FFA activities (Martin & Kitchel, 2014; Russell et al., 2009).

Utility value, however, was not a statistically significant predictor of expectancy beliefs. Although students reported that participation in the Floriculture CDE could benefit future goals such as careers or scholarships, this perception was not strongly associated with their confidence in performing well in the contest. This finding suggests that students' confidence may be influenced more by personal interest, investment in effort, and identity-related motivations than by perceived long-term benefits.

Implications

The findings of this study have several implications for agricultural education teachers, FFA advisors, and CDE organizers. First, the results indicate that preparation behaviors and effort investment are closely linked to students' confidence in their abilities. Teachers who offer structured preparation activities, practice sessions, and regular review of contest materials can help boost students' confidence and performance in competitive events. Hands-on practice and repeated exposure to contest content may enable students to master essential skills, thereby reinforcing both competence and motivation.

Second, the findings emphasize the importance of fostering intrinsic interest in floriculture and the learning process. While competitive success and recognition may initially motivate participation, long-term engagement is more likely driven by students'

enjoyment of the subject and their interest in the activity itself. Teachers can boost motivation by relating contest preparation to real-world applications and authentic industry practices within the floriculture and horticulture fields.

Third, the role of social encouragement emphasizes the importance of supportive team environments within agricultural education programs. Advisors, peers, and family members can influence students' willingness to participate and persist in preparation activities. Building a strong team culture and supportive learning environments can motivate students to stay engaged throughout the preparation process and lead to positive experiences in CDEs.

Finally, the finding that utility value did not significantly predict expectancy beliefs suggests that students' perceptions of future career benefits may not be the primary driver of their confidence in competitive settings. Instead, students' confidence appears to be shaped more strongly by their interest in the subject matter and their willingness to invest effort in preparation. This implication reinforces the importance of experiential learning opportunities that allow students to develop mastery and confidence through hands-on practice.

Recommendations

Several recommendations arise from this study's findings. First, agricultural education teachers and FFA advisors should focus on providing consistent preparation opportunities for students involved in CDEs. Offering structured practice sessions, mock competitions, and regular skill-building activities can help boost students' confidence and enhance their performance in competitive events.

Second, teachers should continue to cultivate students' intrinsic interest in agricultural content areas such as floriculture. Integrating authentic industry experiences, hands-on learning activities, and real-world problem-solving into contest preparation may help sustain students' motivation and deepen their engagement with the subject matter. Third, agricultural education programs should continue to foster strong team environments that encourage collaboration and peer support. Encouragement from teammates, advisors, and family members may contribute to students' willingness to participate and persist in demanding preparation activities.

Future research could further explore how motivational constructs associated with Expectancy Value Theory operate across different CDEs. Motivational patterns may vary across contests depending on the structure of preparation, the skills required, and the perceived relevance of the event to students' interests and career goals.

Research examining changes in students' expectancy beliefs before and after participating in CDEs could also offer insight into how preparation experiences affect students' perceptions of competence. Additionally, qualitative studies involving interviews or focus groups with CDE participants could provide a deeper understanding of the motivational factors that influence students' decisions to participate and continue in competitive agricultural education activities.

Further investigation could explore the role of teacher coaching strategies in shaping student motivation and preparation behaviors. Understanding how instructional practices influence motivation and confidence may help improve contest preparation strategies and inform professional development opportunities for agricultural education teachers. Additionally, future research could also examine how participation in CDEs

affects students' long-term educational and career pathways within the Agriculture, Food, and Natural Resources career cluster. Previous research suggests that participation in national competitions can boost students' confidence in agricultural knowledge and skills (Croom et al., 2009), and further research could investigate how these experiences affect postsecondary plans and career aspirations.

Chapter 4: Study 3: Career Aspirations of Student Participants in The National FFA Floriculture Career Development Event

Introduction

Career Development Events (CDEs) are designed not only to strengthen technical knowledge and skills but also to help students explore, clarify, and prepare for future career paths. In school-based agricultural education (SBAE), CDE participation offers a structured way for students to explore careers by engaging with real industry tasks, receiving feedback from industry-aligned evaluators, and reflecting on their interests and abilities. While Chapters 2 and 3 looked at who participates in the National FFA Floriculture CDE and why students are motivated to get involved and stick with it, an equally important question remains: How does participation in the Floriculture CDE influence students' career goals and their views on career readiness?

CDEs are recognized as mechanisms for building career-specific knowledge and skills aligned with postsecondary education and future employment (Goodwin & McKim, 2020). Understanding the career aspirations of Floriculture CDE participants is especially important given the changing workforce needs of the green industry and the variety of postsecondary pathways available to students. Students participating in national-level CDEs might pursue a broad range of outcomes, including postsecondary education, direct entry into the workforce, or careers outside of agriculture. However, participation in industry-aligned, applied competitions can still help develop transferable skills, increase career awareness, and boost confidence in making career decisions.

Although CDEs have long played a role in agricultural education, little research has explored how participating in specific national events affects students'

postsecondary plans and career goals (Croom et al., 2009; Knobloch et al., 2016; Lundry et al., 2015; Talbert & Balschweid, 2006). This study aims to fill that gap by examining the career intentions and perceived career impacts reported by students in the National FFA Floriculture CDE.

The purpose of Study 3 is to explore students' postsecondary plans, career goals, and perceived career-related outcomes of those participating in the National FFA Floriculture CDE. This study builds on the motivation and confidence findings discussed in Chapter 3 and offers insights into how participation in Floriculture CDEs impacts students' career development and workforce readiness.

Review of Literature

Length of FFA Involvement and Career Aspirations

Consistent involvement in agricultural education programs and FFA activities is linked to increased student engagement and long-term development. Research shows that many students stay active in FFA throughout their secondary education. For instance, Talbert and Balschweid (2006) reported that over 60% of respondents indicated they had been members for 4 or more years, suggesting that many students remain engaged with the organization throughout high school. Extended participation in FFA gives students repeated opportunities for leadership, career exploration, and experiential learning, which can influence their educational and career goals.

Long-term engagement in specific FFA activities, such as CDEs, may also indicate a sustained commitment to agricultural learning and skill-building. Knobloch et al. (2016) found that youth participation often spanned multiple years within the same CDEs, suggesting that students frequently continue competing in these events over

time. This repeated involvement can help students gradually develop knowledge, technical skills, and confidence in a particular agricultural field. As students take part in these activities year after year, they may also gain greater exposure to career options related to the skills emphasized in the events.

Together, these findings indicate that prolonged involvement in FFA and repeated participation in CDEs may help maintain student engagement in agricultural education (Knobloch et al., 2016; Talbert & Balschweid, 2006). Ongoing participation offers students opportunities to deepen their understanding of agricultural topics and strengthen their ties to potential career paths.

Career Development Events and Career Exploration

CDEs are widely recognized as vital experiential learning components within SBAE. These events are often described as academic, skill-based contests designed to expose students to technical knowledge and industry-relevant skills across agricultural sectors (Dreher & Robinson, 2024). Through participation in these competitive activities, students apply classroom knowledge to real-world situations and develop competencies linked to agricultural careers (Boardman, 2008; Bowling, 2010). As intracurricular experiences that go beyond traditional classroom instruction, CDEs offer opportunities for students to engage in career-building activities while participating in structured competitions (Knobloch et al., 2016).

Within agricultural education programs, CDEs are often used as authentic training opportunities that help prepare students for a variety of agricultural careers (Dreher & Robinson, 2024). These events link classroom learning to real-world situations, enabling students to apply academic concepts in practical settings while

gaining exposure to career options within the agriculture industry (Bowling, 2010; Lundry et al., 2015). As part of the larger FFA structure, competitive events and award programs aim to foster leadership, career exploration, and personal responsibility among agricultural education students (Talbert & Balschweid, 2004).

Participation in CDEs has been linked to increased awareness of career pathways and industry opportunities in agriculture. Students have indicated that participating in CDEs helps them learn about career options and develop skills relevant to future jobs (Knobloch et al., 2016). Interaction with industry professionals and real workplace scenarios enables students to better understand potential careers in the agriculture, food, and natural resources sectors (Warfield Oyirifi, 2016). These hands-on experiences support students' exploration of career paths and strengthen the connection between classroom learning and professional practice (Lundry et al., 2015).

Students often see CDE participation as valuable for career prep and employment readiness. Participation has been linked to increased career-related knowledge and exposure to agriculture-related career options (Ball et al., 2016). By mastering contest content, students can also connect the skills developed through CDE preparation to their future career goals within agriculture and related fields (Ball et al., 2016). Similarly, students have reported that CDE participation helps with job readiness and prepares them for future employment (Jones, 2013). Participation in agricultural education programs that include FFA involvement and hands-on learning opportunities has also been linked to higher levels of career readiness as shown by workplace assessments (Mouser et al., 2019).

Research examining national-level competitions further highlights the role of CDEs in encouraging career exploration. Students who participated in National FFA CDEs stated that these experiences introduced them to new career areas and prepared them for future job opportunities (Croom et al., 2009). Sometimes, taking part in national competitions motivated students to stay involved in related agricultural activities or pursue additional education in the same field. For instance, members of a winning team in the National FFA Floriculture CDE said that competing at the national level and putting effort into preparation “paid off in the end,” inspiring ongoing participation in related horticulture competitions and further education in the discipline (Petrovic, 2015).

Career interests developed through agricultural education participation may also go beyond individual events. Talbert and Balschweid (2006) found that one-third of respondents identified agriculture and natural resources as their first-choice career cluster. This finding suggests that participation in agricultural education experiences, including CDEs, can influence students’ long-term career goals within the agriculture industry.

Overall, these studies show that CDEs are important for connecting students to agricultural careers by offering hands-on learning experiences, exposure to industry-relevant skills, and insight into potential career paths. Participating in these events helps students develop technical skills, become more aware of career opportunities, and better prepare for jobs in agriculture-related fields.

Postsecondary Pathways of Agricultural Education Students

Participation in agricultural education and FFA activities is linked to students’ postsecondary goals and career readiness. Studies show that many students involved

in agricultural education plan to pursue further education after high school. Talbert and Balschweid (2006) found that 87% of respondents aimed to achieve some form of postsecondary education or technical training, indicating that students in agricultural programs often see continuing education as part of their future. Likewise, Croom et al. (2009) reported that over two-thirds of respondents intended to attend college or university after high school.

Educational persistence is developed by coursework, real-world application, and supportive relationships. These experiences are strongly associated with students' experiences as they matriculate from high school agricultural experiences to postsecondary education (Howerton et al., 2019). CDEs can help students prepare postsecondary pathways by offering chances to build technical knowledge and career-related skills. Students see CDE participation as preparation for future education and careers, including college programs and career paths aligned with agriculture (Bowling et al., 2020). Teachers also report that students develop skills through CDE preparation that transfer to postsecondary education and career readiness (Russell et al., 2009). Furthermore, teachers note that participating in CDEs exposes students to college campuses and postsecondary opportunities, which can further support their educational goals (Lundry et al., 2015).

Participation in FFA and agricultural education programs may also shape students' perceptions of their readiness for future opportunities. Talbert and Balschweid (2004) found that FFA members were more likely to see their agricultural education classes as preparing them for the future, indicating a perceived connection between program involvement and postsecondary preparedness. Engagement in CDEs has also

been linked to increased career decision self-efficacy and perceptions of competitiveness in the job market (Smalley et al., 2025).

In some cases, students' participation in CDEs directly influences their educational goals. For example, one competitor who aged out of FFA reported plans to study horticulture science at North Carolina State University after competing in the National FFA Floriculture CDE, demonstrating how contest experiences can relate to future education plans (Petrovic, 2015). Overall, these studies suggest that involvement in agricultural education and CDEs can help students' educational goals by increasing career awareness, building skills, and improving perceptions of readiness for college or other postsecondary options (Stafford, et al, 2003).

Workforce Development and the Green Industry

The floriculture industry includes various careers related to greenhouse and field production, floral design, and retail operations such as garden centers and floral shops (National FFA Organization, 2025). The National FFA Floriculture CDE aims to prepare students for work in this sector by requiring participants to demonstrate technical skills and employability qualities essential for success in the floriculture industry. The event emphasizes competencies like customer service, sales, facility management, and business practices, while contest activities simulate real-world tasks such as greenhouse troubleshooting, floral product pricing, and customer interaction (National FFA Organization, 2025). These activities align with Agriculture, Food, and Natural Resources (AFNR) Career Cluster Content Standards and include employability skills relevant to the green industry workforce (National FFA Organization, 2025).

CDEs play an important role in workforce preparation within agricultural education. CDEs offer technical skills training for industry-related jobs and also create opportunities for recognition and industry involvement in career and technical education programs (Russell et al., 2009). These events are described as ways to strengthen workforce pipelines by exposing students to agricultural careers and postsecondary options (Warfield Oyirifi, 2016). Participating in CDEs may also lead to industry recognition, scholarship chances, and resume-building experiences that support workforce readiness (Goodwin & McKim, 2020). Interest in agriculture-related careers among agricultural education students remains high, with nearly half of respondents in one study expressing interest in careers related to agriculture, natural resources, or life sciences (Talbert & Balschweid, 2006).

Research consistently shows that CDE participation helps develop employability skills valued by employers. Participation is linked to improvements in communication, teamwork, problem-solving, and work ethic skills, which are widely recognized as vital in today's workplaces (Boardman, 2008; Russell et al., 2009). Preparing for CDEs also highlights practical knowledge, technical skill advancement, and problem-solving abilities that can be applied in workforce settings (Ball et al., 2016; Bowling et al., 2020). Teachers have also reported that CDE participation helps prepare students for employment by enhancing job readiness, critical thinking, decision-making, and technical agricultural skills (Lundry et al., 2015).

CDEs are intentionally aligned with industry expectations and agricultural career pathways. CDEs correspond with AFNR pathways and are reviewed by industry professionals to ensure that contest content reflects current workforce expectations

(Smalley et al., 2025). In the specific field of floriculture, the Floriculture CDE has been designed to mirror industry practices in greenhouse production, plant identification, and business management, supporting workforce readiness within the green industry (Bowling, 2010). Overall, these findings suggest that CDEs serve not only as competitive educational experiences but also as structured mechanisms for building the technical knowledge and employability skills necessary for careers in agriculture and horticulture.

Perceived Career Impact of CDE Participation

Participation in agricultural education activities, including CDEs, leadership events, and Supervised Agricultural Experiences (SAEs), has been linked to a stronger identification with agricultural careers and higher postsecondary aspirations (Talbert & Balschweid, 2006). SAEs have been shown to have positive economic benefits (Hanagrif, et al., 2010). Engagement in these hands-on learning opportunities helps students develop career-related skills while exploring potential agricultural career paths. Students who take part in CDEs often view these experiences as beneficial for building career skills, gaining confidence, and preparing for future opportunities (Knobloch et al., 2016). Participation in CDEs has also been connected to the development of employability skills that support students' future career success, no matter which specific agricultural career they pursue (Boardman, 2008).

Teachers have similarly reported positive career-related outcomes linked to participation in CDEs. Educators believe that participating in CDEs improves students' life skills and prepares them for success beyond high school (Russell et al., 2009). Teachers also indicate that students involved in CDEs gain more exposure to

agricultural careers and are more likely to pursue careers within the agricultural industry (Lundry et al., 2015; Smalley et al., 2025). Furthermore, teachers agree that the competitive environment of CDEs helps deepen students' understanding of agricultural careers and enhances learning through hands-on experiences (Lundry et al., 2015).

Participation and achievement in CDEs can also open doors that support students' future educational and professional growth. Success at National FFA CDEs may lead to scholarships, recognition, and career opportunities beyond high school (Warfield Oyirifi, 2016). Teachers have reported that high achievement in CDEs can also foster industry connections and increase employability prospects for students (Goodwin & McKim, 2020). Students themselves see participation in CDEs as beneficial for building resumes, qualifying for scholarships, and preparing for long-term careers (Ball et al., 2016). Moreover, students associate CDE involvement with greater competitiveness for future jobs (Jones, 2013).

Participation in FFA activities more broadly is also linked to students' perceptions of how relevant their agricultural education experiences are. Students who are more actively involved in FFA activities show stronger views of the value and future importance of their agricultural education programs (Talbert & Balschweid, 2004). Agricultural education students have also shown career readiness comparable to their peers in workplace assessments, indicating that hands-on learning opportunities in these programs help prepare students for the workforce (Mouser et al., 2019).

While many students report positive career-related outcomes associated with CDE participation, not all participants ultimately pursue careers directly within the agriculture industry. Croom et al. (2009) found that only a minority of participants

planned to pursue careers directly within the food, fiber, and natural resources industry, although many indicated they planned to apply skills learned through CDE participation in careers outside of agriculture. Students also reported that participation in CDEs exposed them to new career areas and better prepared them for future employment opportunities (Croom et al., 2009). These findings suggest that while CDE participation may influence agricultural career interest, the skills and experiences gained through participation may also support success across a wide range of professional fields.

Collectively, these studies indicate that participation in CDEs enhances students' career awareness, skill development, and perceptions of workforce readiness. Through involvement in competitive experiential learning activities, students can boost their confidence, acquire transferable employability skills, and gain exposure to career opportunities that shape their postsecondary and career choices.

Expectancy Value Theory and Career Choice

Expectancy-Value Theory provides a framework for understanding how individuals make achievement-related and career decisions based on their beliefs about success and the value they assign to a given task. Within educational contexts, motivation is conceptualized as a function of two primary components: expectancy beliefs and subjective task value (Bandhu et al., 2024). Expectancy beliefs reflect individuals' perceptions of their competence and likelihood of success, while task value encompasses the reasons for engaging in an activity, including intrinsic interest, personal importance, and perceived utility for future goals (Bandhu et al., 2024). Together, these constructs influence students' choices, persistence, and performance in academic and career-related activities.

Experiential learning environments, such as CDEs, provide a context in which both expectancy beliefs and task values can be developed and reinforced. Participation in CDEs requires students to apply technical knowledge and problem-solving skills, which may increase their perceived competence. Students participating in National FFA Career Development Events have reported increased confidence in their agricultural knowledge and skills, as well as improved perceptions of readiness for future employment (Croom et al., 2009). As expectancy beliefs strengthen through repeated practice and successful performance, students may become more likely to pursue additional opportunities within related academic or career pathways.

In addition to expectancy beliefs, subjective task value plays a critical role in shaping career-related decisions. Students have reported that participation in CDEs contributes to the development of career-related knowledge and skills while exposing them to potential career opportunities (Ball et al., 2016). These experiences have also been associated with increased perceptions of employability and job readiness, suggesting that students recognize the utility of participation for future goals (Jones, 2013). Furthermore, exposure to diverse agricultural career pathways through CDE participation enables students to assess their interests and align their experiences with potential career paths (Croom et al., 2009).

Participation in agricultural education programs that integrate FFA activities and experiential learning has also been linked to increased perceptions of relevance and future applicability. Students engaged in FFA activities often report stronger connections between their educational experiences and career opportunities, indicating that these experiences contribute to the development of task value (Talbert & Balschweid, 2004).

Similarly, CDE participation has been described as a mechanism for career exploration, allowing students to assess potential career paths through applied experiences (Warfield Oyirifi, 2016).

CDE participation also supports the development of skills associated with workforce readiness. Preparation for these events emphasizes applied knowledge, problem solving, and technical skill development that are transferable across multiple career contexts (Bowling et al., 2020). Through this process, students not only build competence but also recognize the broader applicability of their skills, reinforcing both expectancy beliefs and utility value.

However, the influence of CDE participation on career outcomes is not limited to agricultural pathways. Although some students pursue careers directly within agriculture, others apply the skills and experiences gained through participation in careers outside the industry (Croom et al., 2009). This suggests that the value derived from CDE participation extends beyond specific career pathways, contributing to broader career readiness and adaptability.

Collectively, these findings indicate that expectancy beliefs and subjective task values developed through participation in CDEs shape students' educational and career decisions. Examining how students perceive the Floriculture CDE's contribution to their future success, their knowledge of agricultural careers, and their postsecondary plans provides insight into how experiential learning environments influence career development and workforce preparation.

Theoretical Framework

Study 3 is guided by Expectancy Value Theory (EVT), which proposes that individuals' educational and career choices are shaped by their expectations of success and the value they place on an activity or domain (Bandhu et al., 2024; Eccles & Wigfield, 2002; Wigfield & Eccles, 2000). Expectancy beliefs reflect perceptions of their competence and likelihood of success, while task values indicate the importance, interest, or usefulness individuals associate with participation.

In agricultural education, participation in Career Development Events offers hands-on learning experiences that can impact both expectancy beliefs and task values related to agricultural careers. Through preparation and competition, students gain technical knowledge and build confidence in their abilities, which may enhance their expectations for success (Croom et al., 2009). Simultaneously, exposure to industry practices and career options can increase students' perceptions of the worth of agricultural careers, particularly utility value, the perceived usefulness of participation for future educational and career goals (Eccles & Wigfield, 2002; Warfield Oyirifi, 2016).

While studies 1 and 2 examined participants' characteristics and motivational constructs directly aligned with EVT, study 3 extends this framework by examining the career related outcomes associated with participation, exploring whether engagement in a high value competitive environment produces the achievement related decisions and aspirations that EVT predicts (Eccles & Wigfield, 2002; Plante et al., 2013).

Guided by EVT, Study 3 explores how participation in the National FFA Floriculture Career Development Event relates to students' postsecondary plans, career goals, and perceptions of the event's role in career success and agricultural knowledge,

conceptualizing these variables as EVT predicted outcomes rather than as motivational constructs themselves.

Purpose And Objectives

The purpose of Study 3 is to examine the career aspirations and perceived career-related outcomes of student participants in the National FFA Floriculture CDE.

The objectives of this study are to:

1. Describe the postsecondary plans of National FFA Floriculture CDE participants.
2. Identify the Agriculture, Food, and Natural Resources career pathways that best align with students' reported career ambitions.
3. Examine students' perceptions of the Floriculture CDE's contribution to career success and influence on their knowledge of agricultural careers.
4. Examine the relationship between years of FFA involvement and students' intentions to pursue agriculturally related careers.

Methods

This study used a cross-sectional quantitative survey design to examine the postsecondary plans, career aspirations, and perceived career-related outcomes of student participants in the National FFA Floriculture CDE (Creswell & Creswell, 2018). A cross-sectional design involves collecting data from participants at a single point in time rather than following the same individuals over an extended period (Wang & Cheng, 2020). Survey research was chosen because it provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of the population (Creswell & Creswell, 2018). Data were collected via a questionnaire administered to participants after their involvement in the National FFA Floriculture CDE.

Participants

The population of interest for this study included all students who competed in the National FFA Floriculture CDE during the 2022, 2023, 2024, and 2025 National FFA Conventions. According to official National FFA records, 711 students competed in the Floriculture CDE across these four years. Once a student competes in a national contest, they are ineligible to compete in the same national contest again (National FFA Organization, 2025). The population of this study was 711 non-repeated individuals competing across four years (2022, 2023, 2024, & 2025).

A total of 356 usable survey responses were collected from national competitors across the four-year period, representing approximately 50% of all competitors during that timeframe, see Table 3.1. Participation in the survey was voluntary. Due to the nature of voluntary participation, not all respondents answered every question; therefore sample sizes varied slightly across analyses. Respondents represented multiple states, grade levels, residence types, and prior levels of competitive experience. This study was approved by the Auburn University Institutional Review Board (Protocol STUDY00000710, Appendix 1).

Table 3.1
National FFA Floriculture CDE Participants by Year of Competition

	Total National CDE Participants	Total National CDE Participants	Survey Respondents	Survey Respondents
Year	<i>n</i>	%	<i>n</i>	%
2022	176	24.8	23	6.5
2023	176	24.8	122	34.3
2024	171	24.1	110	30.9
2025	188	26.4	101	28.4
Total	711	100	356	100

Note. Total national participation counts were obtained from official National FFA Floriculture CDE records. Survey respondents represent students who completed the study instrument.

Instrumentation and Data Analysis

Data for this study were collected using the CDE Student Survey, an institutional questionnaire developed by the National FFA Organization's Program Evaluation and Assessment Team for the purpose of evaluating student experiences across national career and leadership development events. The survey was administered to participants following the National Floriculture CDE at the 2022, 2023, 2024, and 2025 National FFA Conventions as part of the National FFA Organization's ongoing program evaluation efforts. Access to the survey data was obtained through a formal research collaboration agreement with the National FFA Organization, consistent with the organization's research proposal process (National FFA Organization, 2024). This study aligns with the National FFA Organization's 2024-2029 research priority areas, including priority 1, making FFA accessible and creating a sense of belonging for all, and priority 3, impact of FFA engagement on career choices (National FFA Organization, 2024).

Data for this study were collected using five items from the CDE Student Survey. Postsecondary plans were assessed using one categorical item asking participants to indicate their plans following high school, with response options including four-year university, two-year college or technical program, enter the workforce, join the military, and unsure. Career pathway intentions were assessed using one categorical item asking participants to identify the career pathway that best describes their career ambitions, with response options aligned with Agriculture, Food, and Natural Resources career cluster pathways. Perceived contribution of the Floriculture CDE to future success was assessed using one item asking participants to indicate the extent to which they agreed with the statement "The Floriculture CDE contributed to my future career

success," assessed on a four-point scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). Perceived increase in knowledge of agricultural careers was assessed using one item asking participants to indicate the extent to which they agreed with the statement "Participating in the Floriculture CDE increased my knowledge about agricultural careers," assessed on a four-point scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). Years of FFA involvement were assessed using one item asking participants to report how many years they had been involved in FFA.

Because all Study 3 variables were assessed using single survey items, internal consistency reliability analysis was not applicable. The use of single-item measures represents a limitation of this study, as single items cannot be assessed for internal consistency and may be less precise than multi-item composite scales. Findings involving these variables should be interpreted with this limitation in mind.

Data was collected electronically and exported into IBM SPSS Statistics (Version 31) for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarize participant responses regarding postsecondary plans, career pathways, and perceptions of career-related outcomes.

To examine relationships among variables, Pearson product-moment correlation coefficients were calculated. Correlation analyses assessed relationships among years of FFA involvement, career plan alignment, perceived contribution to future success, and increased knowledge of agricultural careers. Statistical significance was evaluated at the *a priori* determined $p < .05$ level.

This study was guided by Expectancy-Value Theory, which posits that students' educational and career decisions are shaped by their expectations of success and the

value they place on an activity (Bandhu et al., 2024; Eccles & Wigfield, 2002; Wigfield & Eccles, 2000). EVT predicts that students who perceive an activity as valuable, particularly in terms of utility value, or its usefulness for future goals, will be more likely to make achievement-related choices aligned with that domain, including postsecondary and career decisions (Eccles & Wigfield, 2002; Wigfield & Eccles, 2000). Within this framework, the variables examined in study 3, postsecondary plans, AFNR career pathway intentions, perceived contribution of the CDE to future success, and increased knowledge of agricultural careers, are conceptualized as outcomes that EVT based participation experiences may shape rather than as EVT constructs themselves. Examining these outcomes provides insight into whether sustained engagement in a high-value competitive experiential learning environment translates into career aligned aspirations and perceptions of readiness, consistent with EVT's prediction that value perceptions shape long term achievement related behaviors (Eccles & Wigfield, 2002; Plante et al., 2013).

Limitations

Several limitations should be considered when interpreting the findings of Study 3. First, the voluntary nature of survey participation introduces the potential for non-response bias. Of the 711 students who competed in the National FFA Floriculture CDE between 2022 and 2025, 356 completed the survey instrument. Sample sizes varied further across individual analyses due to item-level non-response, ranging from approximately 200 to 339 participants depending on the variable examined. Students who did not respond to all items may differ systematically from those who did, and

findings may not fully represent the experiences and intentions of all national Floriculture CDE competitors across the study period.

Second, the cross-sectional design of this study limits the ability to establish causal relationships between CDE participation and career-related outcomes. Correlation analyses can identify associations among variables, such as the relationship between years of FFA involvement and agricultural career intentions, but cannot confirm the direction or cause of those relationships. It is possible that students who were already career oriented prior to competition were more likely to report positive career-related perceptions after competing, rather than participation itself producing those outcomes. A longitudinal design that measures career aspirations and perceptions at multiple time points, such as before participation, immediately after competition, and at intervals following high school, would be needed to establish whether and how participation shapes career trajectories over time.

Third, all outcome variables in study 3 were self-reported perceptions measured at a single point in time immediately following the national competition. Perceived contribution to future success, increased knowledge of agricultural careers, and career pathway intentions reflect student beliefs and intentions at the moment of survey completion rather than actual behavioral outcomes. Prior research has documented that stated career intentions do not always translate into realized career choices, and the relationship between intentions measured at competition and actual postsecondary enrollment, career entry, and workforce outcomes remains unknown. Longitudinal follow up research tracking former participants into postsecondary education and career would

provide a more complete and accurate picture of the long term impact of Floriculture CDE participation.

Fourth, the survey instrument used in this study was developed by the National FFA Organization's Program Evaluation and Assessment Team for program evaluation purposes rather than specifically to operationalize career aspiration constructs or EVT predicts outcomes. The alignment of survey items with study variables was determined by the researcher through item review and comparison with established definitions in the literature. This represents a limitation; purpose built instruments with established validity and reliability for measuring career aspirations, utility value perceptions, and career knowledge would provide stronger psychometric support for the constructs examined. Findings should be interpreted with awareness that the items reflect practical measures available within an institutional survey rather than theoretically validated research instrument.

Fifth, the study examined participants from a single CDE, the National FFA Floriculture CDE, which limits the generalizability of findings to other CDE events, agricultural career contexts, or career pathways beyond the floriculture and green industry sectors. Career aspirations, postsecondary plans, and perceived career impacts observed in this population may reflect characteristics specific to the Floriculture CDE and its participants, including the event's technical focus, the demographic profile of competitors, and the career options emphasized within floriculture education. Whether similar patterns would be observed in other national CDE events warrants further investigation.

Sixth, the sample represents a highly self-selected and competitive population, meaning students who successfully advanced to national-level competition. This population is likely among the most academically motivated and career-oriented students in agricultural education. Career aspiration, perceptions of future success, and career knowledge reported by this group may not be representative of agricultural education students more broadly or of students who participate in Floriculture CDEs at lower competitive levels. Findings should not be generalized beyond the national competitor population without additional research at other levels of competition.

Finally, the FFA years variable had a notably reduced sample size of 202 respondents compared to variables in the study, due to item level non response. Students who reported their years of FFA involvement may differ from those who did not in ways that could affect the correlations involving this variable. For example, students with shorter or longer involvement histories may have been less likely to respond. Findings related to the relationship between FFA involvement and career limitations should be interpreted with this reduced and potentially non-representative subsample in mind.

Findings

Objective 1: Describe the postsecondary plans of National FFA Floriculture CDE participants.

Participants were asked to indicate their plans following high school (see Table 3.1). The majority of respondents (75.8%, $n = 270$) reported plans to attend a four-year university, indicating a strong preference for pursuing higher education. An additional 11.2% ($n = 40$) of participants indicated plans to attend a two-year college or technical program. Collectively, these findings suggest that a substantial majority of participants

intend to pursue some form of postsecondary education or technical training after high school.

A smaller proportion of participants reported plans to enter the workforce directly (1.4%, n = 5) or join the military (0.8%, n = 3). Additionally, 6.5% (n = 23) indicated they were unsure of their postsecondary plans at the time of the survey.

These findings suggest that most National FFA Floriculture CDE participants intend to pursue postsecondary education, with relatively few planning to enter the workforce immediately.

Table 3.2

Postsecondary Plans of National Floriculture CDE Participation

Plans After High School	n	%
Four-Year University	270	75.8
Two-Year College/Technical Program	40	11.2
Enter the Workforce	5	1.4
Join the Military	3	0.8
Unsure	23	6.5
Total	356	100

Objective 2: Identify the Agriculture, Food, and Natural Resources career pathways that best align with students' reported career ambitions.

Participants were asked to identify the career pathway they plan to pursue after high school (see Table 3.2). Responses represented a range of AFNR pathways as well as careers unrelated to agriculture.

The largest proportion of respondents (31.2%, n = 111) indicated plans to pursue careers not directly related to agriculture. Among agriculture-related pathways, plant systems was the most frequently selected (19.7%, n = 70), followed by animal systems (12.4%, n = 44), education, communication, and leadership (10.7%, n = 38), and agribusiness systems (9.3%, n = 33). Smaller percentages selected environmental and

natural resource systems (7.0%, n = 25), power, structural and technical systems (2.8%, n = 10), and food and biotechnology systems (2.2%, n = 8).

The high representation of plant systems careers aligns with the content and technical focus of the Floriculture CDE.

Table 3.3
Career Pathways of National Floriculture CDE Participation

Career Pathway	n	%
Agribusiness Systems	33	9.3
Animal Systems	44	12.4
Education, Communication, & Leadership	38	10.7
Environmental & Natural Resource Systems	25	7
Food & Biotechnology Systems	8	2.2
Plant Systems	70	19.7
Power, Structural, & Technical System	10	2.8
Not Agriculturally Related	111	31.2
Total	356	100

To further examine career alignment, responses were grouped into agriculture-related and non-agriculture-related categories (see Table 3.3). Results indicated that a majority of participants (67.3%, n = 228) planned to pursue agriculture-related careers, while 32.7% (n = 111) reported plans to pursue careers outside agriculture. These findings suggest that while a majority of participants intend to pursue agriculture-related careers, a substantial portion plan to enter other fields, indicating the broader applicability of skills gained through participation.

Table 3.4
Agricultural vs. Non-Agricultural Career Intentions

Career Alignment	n	%
Agriculture	228	67.3
Not Agriculture	111	32.7
Total	339	100

Objective 3: Examine students' perceptions of the Floriculture CDE's contribution to career success and influence on their knowledge of agricultural careers.

National Floriculture CDE participants reported generally positive perceptions regarding the CDE's contribution to their future success and their knowledge of agricultural careers.

As shown in Table 3.5, the majority of participants agreed that the Floriculture CDE contributed to their success. More than half of respondents somewhat agreed that participation contributed to their success ($n = 187$, 56.2%), additional 37.5% ($n = 125$) strongly agreed. Only a small percentage of participants disagreed.

Table 3.5
Perceived Contribution of Floriculture CDE to Future Success

Response	<i>n</i>	%
Strongly Disagree	2	0.6
Somewhat Disagree	19	5.7
Somewhat Agree	187	56.2
Strongly Agree	125	37.5
Total	333	100

Descriptive statistics for selected study variables are presented in Table 3.6. Participants reported relatively high perceptions regarding the Floriculture CDE's contribution to future success ($M = 3.31$, $SD = 0.60$) and increased knowledge of agricultural careers ($M = 3.48$, $SD = 0.62$).

Participants also averaged more than three years of FFA involvement ($M = 3.46$, $SD = 1.06$), indicating that many respondents had sustained participation within agriculture education and FFA activities prior to competing at the national level.

Table 3.6
Descriptive Statistics for Selected Study Variables

Variable	<i>M</i>	SD	<i>n</i>
Career Plan Alignment	1.33	0.47	339
Contribution to Future Success	3.31	0.60	333
Increase Knowledge of Careers	3.48	0.62	316
Years in FFA	3.46	1.06	202

A Pearson product-moment correlation analysis was conducted to examine relationships among career plan alignment, perceived contribution to future success, and increased knowledge of careers, and years of FFA involvement (see Table 3.6). Results indicated a statistically significant, moderate positive relationship between perceived contribution to future success and increased knowledge of agricultural careers ($r = .490, p < .001$).

Career plan alignment was also positively correlated with perceived contribution to future success ($r = .251, p < .001$), increased knowledge of careers ($r = .163, p = .004$), and years of FFA involvement ($r = .201, p = .004$), although these relationships were small in magnitude.

These findings suggest that participants who perceive greater benefits from the Floriculture CDE also report higher levels of career knowledge and are slightly more likely to pursue agriculturally related careers.

Table 3.7
Correlations Among Career Alignment, Perceived Outcomes, and Years in FFA

Variable	1	2	3	4
Career Plan Alignment	-	-	-	-
Contribution to Future Success	0.25**	-	-	-
Increased Knowledge of Careers	0.16**	0.49**	-	-
Years in FFA	0.20**	0.18*	0.04	-

Note. N= 200-339 $p < 0.05^{**}$,
 $p < 0.01^{*}$

Objective 4: Examine the relationship between years of FFA involvement and students' intentions to pursue agriculturally related careers.

Participants reported varying levels of FFA involvement, with the largest proportion indicating four years of membership (36.6%, $n = 74$), followed by three years (27.2%, $n = 55$), two years (16.3%, $n = 33$), and five years (16.3%, $n = 33$). A small percentage reported one year of involvement (3.5%, $n = 7$) (see Table 3.7). The average length of FFA involvement was 3.46 years ($SD = 1.06$).

A Pearson product-moment correlation analysis indicated a small but statistically significant positive relationship between years of FFA involvement and intentions to pursue agriculturally related careers ($r = .201$, $p = .004$) (see Table 3.6). This finding suggests that students with more years of FFA involvement were slightly more likely to report plans to pursue agricultural careers.

Additional analysis indicated that years of FFA involvement were also positively related to perceived contribution to future success ($r = .182$, $p = .010$), although no statistically significant relationship was found between years of involvement and increased knowledge of agricultural careers ($r = .042$, $p = .555$). These findings suggest that while FFA involvement is associated with career alignment and perceived success, its relationship with perceived career knowledge is limited.

Table 3.8
Years of FFA Involvement

Years in FFA	<i>n</i>	Valid %
1	7	3.5
2	33	16.3
3	55	27.2
4	74	36.6
5	33	16.3
Total	202	100

Note. Valid percentages reported due to missing responses.

Conclusions, Implications, and Recommendations

Conclusion

Findings from this study indicate that participation in the National FFA Floriculture CDE is associated with strong postsecondary aspirations and generally positive perceptions of career preparation. The majority of participants reported plans to attend a four-year university (75.8%), suggesting that students who engage in this event are highly college-oriented. This aligns with previous research indicating that agricultural education students often pursue postsecondary education after high school (Talbert & Balschweid, 2006; Croom et al., 2009).

Although a majority of participants expressed intentions to pursue agriculture-related careers (67.3%), a substantial portion reported plans outside the AFNR pathways (32.7%). This suggests that while the Floriculture CDE supports career exploration within agriculture, it also provides transferable skills that extend to other career fields. This finding aligns with prior research indicating that Career Development Events contribute to employability skills and career readiness beyond specific agricultural occupations (Boardman, 2008; Jones, 2013).

Participants reported positive perceptions of the Floriculture CDE's contribution to their future success ($M=3.31$, $SD=0.60$) and to their knowledge of agricultural careers ($M=3.48$, $SD=0.62$). The majority of students agreed that participation enhanced their understanding of career opportunities and prepared them for future success (93.7%). Additionally, a moderate positive relationship was found between perceived contribution to future success and increased knowledge of agricultural careers ($r=0.490$, $p<.001$), suggesting that students who perceived greater benefits from participation also reported

stronger awareness of career pathways. These findings support research indicating that CDE participation enhances career-related knowledge and confidence (Croom et al., 2009; Ball et al., 2016).

Years of FFA involvement were positively associated with intentions to pursue agriculturally related careers ($r=.201$, $p=.004$), though the relationship was modest. This suggests that sustained FFA participation may contribute to career alignment within agriculture, but it is not the sole factor. Similarly, years of involvement were modestly related to perceptions of future success ($r=.182$, $p=.010$) but not significantly related to increased career knowledge ($r=.042$, $p=.555$). These findings indicate that while FFA experience contributes to student outcomes, other factors, such as individual interests, perceived value, and experiences in specific activities, may play a larger role in shaping career decisions.

Guided by Expectancy-Value Theory, these findings suggest that participation in the Floriculture CDE shapes students' EVT-predicted outcomes, particularly perceptions of career relevance and future success, consistent with EVT's proposition that high-value participation experiences translate into career aligned aspirations and perceptions of readiness. However, expectancy beliefs and long-term career decisions appear to be influenced by a combination of participation experiences and individual factors, rather than by years of involvement alone.

Implications

The findings of this study have several implications for agricultural education, FFA programming, and workforce development in the green industry. First, the strong interest in postsecondary education among Floriculture CDE participants indicates that

agricultural education programs are effectively preparing students for continued learning beyond high school. Educators and program leaders can build on this strength by intentionally linking CDE participation to postsecondary pathways, including degree programs, technical training, and certifications in the agriculture and horticulture industries. Providing explicit connections between CDE content and college or career pathways may further strengthen students' perceptions of utility value, a key component of Expectancy-Value Theory.

Second, although most participants indicated agriculture-related career intentions, the presence of a substantial group pursuing non-agricultural careers highlights the broader impact of CDE participation. Skills developed through the Floriculture CDE, such as problem-solving, teamwork, and technical knowledge, appear to be transferable across career fields. This suggests that agricultural educators should emphasize both industry-specific and transferable employability skills when preparing students for CDE participation.

Third, participants' positive perceptions of the Floriculture CDE's role in career success and career knowledge underscore the importance of experiential learning opportunities in agricultural education. These findings suggest that CDEs effectively increase students' awareness of career opportunities and help them make informed decisions about their futures. Educators should continue to integrate real-world applications, industry connections, and career exploration opportunities into CDE preparation to maximize these benefits.

Finally, the relatively small relationship between years of FFA involvement and career alignment suggests that simply increasing participation duration may not be

sufficient to influence career outcomes. Instead, the quality and relevance of experiences in FFA and CDE may be more impactful. This highlights the importance of intentional program design, meaningful engagement, and alignment between student interests and learning opportunities.

Recommendations

Based on this study's findings, several recommendations are offered for practice and future research. Agricultural educators should continue to integrate Career Development Events as a central component of their programs and intentionally link participation to postsecondary and career pathways. Providing students with clear examples of how CDE skills translate into careers in the green industry and beyond may strengthen both expectancy beliefs and perceived task value.

FFA and agricultural education stakeholders should consider expanding opportunities for students to explore career pathways within and beyond agriculture through CDE participation. This may include greater collaboration with industry partners, guest speakers, internships, and experiential learning opportunities that strengthen career connections.

Because some students pursue non-agricultural careers, educators should emphasize the transferable skills gained through CDE participation. Highlighting these skills may increase the perceived relevance of agricultural education for a broader range of students and support workforce readiness across multiple sectors.

Future research should further examine the factors that influence students' career decisions beyond years of FFA involvement. Additional studies could explore how specific experiences in CDE participation, such as coaching strategies, team

dynamics, and exposure to industry professionals, shape students' perceptions of career opportunities and long-term aspirations.

Further research may also examine how expectancy beliefs and task-value components interact to influence career decision-making among agricultural education students. Qualitative studies of students' experiences in Career Development Events could offer deeper insight into how participation shapes their perceptions of career success and future opportunities.

Chapter 5: Summary, Conclusions, Implications, and Recommendations

Summary

This study examined the personal characteristics, motivation patterns, and career aspirations of students participating in the National FFA Floriculture CDE. The research aimed to provide a comprehensive understanding of who participates in the Floriculture CDE, why they choose to participate, and how participation influences their educational and career pathways. Guided by Expectancy-Value Theory (EVT), the study explored how students' perceptions of competence and task value relate to their motivation, engagement, and career intentions in a national-level competitive experiential learning environment.

This research was conducted as a multi-study investigation. Study 1 described the demographic characteristics and participation patterns of National Floriculture CDE participants. Study 2 examined students' motivational patterns through the lens of subjective task value and expectancy beliefs. Study 3 explored students' postsecondary plans, career aspirations, and perceptions of the Floriculture CDE's contribution to career development.

Study 1 found that participants were predominantly female (82.6%) and White (82.3%), with most students from rural (40.4%) and town (29.2%) settings. Participation was concentrated among upperclassmen, particularly juniors (26.4%) and seniors (35.4%), and most students qualified for national competition during their junior (31.2%) or senior (27.0%) year. Although participation spanned multiple years, findings showed uneven representation across demographic groups and limited diversity at the national level. Chi-square analyses revealed that demographic characteristics remained stable

across years, with statistically significant differences identified only in current grade level ($\chi^2(15)=26.84, p=.03, V=.16$) and prior competition experience ($\chi^2(15)=35.98, p=.002, V=.18$). Additionally, participation in national-level CDEs accounted for a small share of overall FFA membership, emphasizing the selective nature of advancement.

Study 2 examined motivation patterns using Expectancy-Value Theory. Participants reported high levels of both expectancy beliefs ($M=3.73, SD=0.68$) and subjective task value, with intrinsic value ($M=4.37, SD=0.57$) and cost value ($M=4.26, SD=0.72$) rated highest among the task value constructs. A multiple regression model explained 33.6% of the variance in expectancy beliefs ($R^2 = .336, F(5, 296) = 29.97, p < .001$). Among the task value components, cost emerged as the strongest predictor of expectancy beliefs ($\beta = .273, p < .001$), indicating that students who invested greater time and effort in preparation reported higher levels of confidence in their floriculture knowledge and skills. Attainment value ($\beta = .163, p = .036$) and intrinsic value ($\beta = .137, p = .034$) were also significant predictors of expectancy beliefs. Suggesting that students who reported greater interest in floriculture and stronger alignment with personal goals demonstrated higher confidence in their knowledge and skills. Utility value ($\beta = .122, p = .092$) was not a statistically significant predictor, suggesting that students' motivation to participate is more strongly influenced by personal interest and perceived importance than by perceived future career benefit. These findings suggest that students' confidence in competitive floriculture contexts is more strongly shaped by preparation effort, personal meaning, and genuine interest than by anticipated career benefits.

Study 3 examined postsecondary plans and career aspirations. The majority of participants reported plans to attend a four-year university (75.8%), indicating strong postsecondary aspirations. While most students intended to pursue careers in AFNR (67.3%), a substantial portion reported plans outside agriculture (32.7%). Participants also reported positive perceptions of the Floriculture CDE's contribution to future success ($M=3.31$, $SD=0.60$) and increased knowledge of agricultural careers ($M=3.48$, $SD=0.62$), with 93.7% agreeing that participation contributed to their future success. Correlation analyses indicated that perceived contribution to future success was moderately related to increased career knowledge ($r=.490$, $p<.001$), while years of FFA involvement showed a small but significant relationship with intentions to pursue agricultural careers ($r=.201$, $p=.004$) but not with increased career knowledge ($r=.042$, $p=.555$).

Collectively, these findings offer a comprehensive view of National Floriculture CDE participants, highlighting patterns across participation, motivation, and career outcomes.

Conclusions

Several conclusions can be drawn from these findings. First, participation in the National Floriculture CDE is marked by a relatively small demographic profile, with limited representation from diverse populations. This suggests that although the Floriculture CDE offers meaningful learning opportunities, access to and participation in these experiences may not be equally distributed across all student groups.

Second, students who participate in the Floriculture CDE are highly motivated and academically oriented, as evidenced by their strong postsecondary aspirations and

high engagement. Participation in national-level competitions appears to attract students who are already committed to their education and future goals.

Third, motivation for participation is primarily driven by intrinsic and attainment value components. Students are motivated by interest in floriculture, enjoyment of the activity, and the personal importance of developing relevant skills. These findings align with Expectancy-Value Theory, which suggests that students are more likely to engage in activities they find meaningful and enjoyable.

Fourth, participation in the Floriculture CDE positively influences students' perceptions of career readiness and their knowledge of agricultural careers. Students reported that participation helped them better understand career opportunities and prepared them for future success. However, participation does not exclusively lead to agricultural career pathways, as many students intend to pursue careers outside of agriculture.

Finally, years of FFA involvement were only modestly related to career intentions, suggesting that the quality and nature of FFA experiences may be more influential than the duration of participation alone. This highlights the importance of meaningful, high-quality experiential learning opportunities.

Implications

The findings of this study have significant implications for agricultural education, FFA programming, and workforce development in the green industry. From an educational perspective, the results reinforce the value of Career Development Events as experiential learning opportunities that foster student engagement, skill development, and career exploration. Agricultural educators should continue integrating CDE

preparation into classroom instruction while emphasizing real-world applications and industry relevance.

The lack of diversity among participants indicates a need for intentional efforts to expand access to CDE participation. Resource constraints, limited awareness, and underrepresentation may restrict participation among certain student populations. Agricultural education programs should prioritize inclusive practices and targeted recruitment to ensure that all students have access to these opportunities.

The findings on motivation underscore the importance of cultivating intrinsic interest and personal relevance in CDE participation. Educators should design learning experiences that align with students' interests and career goals, rather than relying solely on competition or external rewards as motivators.

From a workforce development perspective, the Floriculture CDE serves as a valuable pipeline for developing technical and employability skills relevant to the green industry. However, because many participants pursue careers outside agriculture, these skills are transferable and applicable across multiple fields. This underscores the broader value of agricultural education in preparing students for a wide range of career pathways.

Recommendations for Practice

Based on this study's findings, several recommendations are offered for agricultural educators, FFA advisors, and program leaders.

Recommendations for National FFA

The National FFA Organization should implement targeted strategies to expand access to and participation in Career Development Events among underrepresented

student populations. These strategies may include expanding outreach to diverse programs, providing additional financial or instructional resources to schools with limited capacity, and promoting inclusive messaging that reflects a broader range of student backgrounds.

National FFA should also strengthen the link between Career Development Events and postsecondary and career pathways. This could be achieved by incorporating more explicit career exploration components into event materials, highlighting AFNR career pathways at national events, and expanding partnerships with postsecondary institutions and industry organizations. These efforts may enhance students' perceptions of the value and relevance of participation, supporting stronger alignment between CDE experiences and future career decisions.

Recommendations for CDE Committee Members

CDE superintendents and committee members should continue designing events that emphasize authentic, hands-on tasks aligned with real-world industry expectations. Because students are motivated by interest and personal relevance, event components should reflect meaningful applications of knowledge and skills in the floriculture and green industry sectors. Authenticity is consistent with agricultural education scholarship that has connected meaningful, real-world task design to project-based learning in SBAE (McKibben & Murphy, 2021).

Committees should also assess event structure and preparation requirements to identify potential barriers to participation. Reducing unnecessary resource demands and ensuring equitable access to materials and preparation opportunities may increase participation across a wider range of programs. Additionally, incorporating a broader

range of industry skills and career pathways into event design may better engage students with varying interests and career goals.

Recommendations for SBAE Teacher Development

Agricultural educators should intentionally connect Career Development Event participation to students' personal interests, career goals, and real-world applications. Instruction should emphasize not only competition outcomes but also the development of skills, knowledge, and experiences relevant to future careers.

Teacher professional development programs should focus on strategies that build student confidence and underscore the value of participation. Professional development should be content-specific. SBAE research consistently prioritizes teacher efficacy varies between subject domains rather than as a single, uniform confidence construct (Hendrix, et al.,2024). Prior needs-assessment research in agriscience education has emphasized the value of identifying teachers' technical expertise and content needs directly when designing professional development (Clemons et al., 2018). This includes integrating CDE preparation into classroom instruction, using real-world problem-solving activities, and providing students with opportunities for autonomy and meaningful engagement. Recent findings by McKibben et al. (2024) suggest that the design of learning experiences, their novelty and applied structures may influence student engagement and deserve consideration when preparing SBAE teachers for CDE coaching (McKibben et al., 2024). Emphasizing high-quality experiential learning may have a greater impact on student outcomes than simply increasing participation over time.

Recommendations for Industry Partners

Industry partners should broaden their engagement with agricultural education programs to strengthen the link between Career Development Events and workforce opportunities. This may include participating in event development, providing mentorship, offering internships or job-shadowing experiences, and supporting events through sponsorship and resource contributions.

Increased interaction between students and industry professionals may enhance students' understanding of career pathways and reinforce the relevance of the skills developed through CDE participation. Industry partners should also collaborate with educators and FFA leaders to ensure that event content reflects current workforce expectations and emerging trends in the green industry.

Recommendations for Future Research

Future research should continue to examine participation patterns in CDEs, with particular attention to access, representation, and equity. Findings from this study indicated relatively consistent participant characteristics across years and limited diversity within the National Floriculture CDE. Additional research is needed to better understand the factors that influence who participates at the highest levels of competition. Studies should investigate structural and contextual barriers, such as program availability, access to resources, geographic location, and advisor support, that may limit participation among underrepresented groups. Research evaluating targeted interventions, such as outreach efforts, funding opportunities, or programmatic supports, would provide valuable insights into strategies to increase inclusivity and expand access to national-level CDE participation.

Qualitative research approaches would further deepen understanding of student experiences in the Floriculture CDE and similar competitive environments. While quantitative findings explain patterns and relationships, they do not fully capture the complexity of students' perceptions and decision-making processes. Interviews, focus groups, and case studies could be used to explore how students interpret their experiences, which factors most influence their motivation, and how participation shapes their identity, confidence, and career thinking. Such approaches may also reveal nuances related to belonging, advisor influence, and peer dynamics that are not easily captured by survey instruments.

Future studies should also examine specific programmatic components of CDE participation and their effects on student outcomes. These include coaching strategies, preparation methods, team dynamics, and exposure to industry professionals. Understanding how these elements contribute to motivation and skill development would yield actionable insights for educators and program leaders. Additionally, research could explore implementation differences across programs to identify best practices that support student success and meaningful learning experiences.

Finally, there is a need for research that examines the long-term impact of CDE participation on educational and career trajectories. While this study identified relationships between participation and career-related perceptions, little is known about how these experiences influence students beyond high school. Long-term tracking of former participants could provide valuable information on postsecondary enrollment, career entry, and workforce outcomes. Such research would help determine the extent to which CDE participation contributes to workforce development within agriculture and

related industries, as well as its broader impact on career readiness across diverse fields.

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Appendix 1: IRB Determination



NOT HUMAN RESEARCH DETERMINATION

July 10, 2025

Jason McKibben
345 W Samford Ave. Suite 2406
Auburn Univ, AL 36849
334-844-4434
jdm0184@auburn.edu

Dear Jason McKibben:

On 7/10/2025, the IRB reviewed the following submission:

Protocol Information	Submission Details
Type of Review:	NHSR
Title:	Career Development Event Archived Data Exploration
Investigator:	Jason McKibben
IRB ID:	STUDY00000710
Funding:	None
Grant Title:	N/A
Grant ID:	None
IND, IDE or HDE:	None
Documents Reviewed:	• Human Subjects determination , Category: IRB Protocol; • questions from FFA CDEs coaches and participants, Category: Survey/Questionnaire; • Secondary Use of Data application, Category: Other;

The IRB determined that the proposed activity is not research involving human subjects as defined by DHHS and FDA regulations.

IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities are research involving human subjects, please submit a new request to the IRB for a determination.

Sincerely,
IRB Administration
540 Devall Drive
Auburn, AL 36849
irbadmin@auburn.edu
(334) 844-5966