The Power of Practice: Predicting Career Decision Self-Efficacy Among High School Agricultural Education Students

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Introduction and Need for Research

The workforce is evolving at an unprecedented pace, requiring students to graduate from secondary education with not only academic and technical competencies but also employability and career decision-making skills (Advance CTE, 2015; Hassock & Hill, 2022). Without intentional career preparation, students are at risk of making impulsive or uninformed career decisions that may limit long-term success (Marx et al., 2014). Career and Technical Education (CTE) programs address this challenge by integrating academic instruction with authentic, applied learning experiences designed to prepare students for high-skill, high-demand occupations. A central component of CTE is work-based learning (WBL), defined as an educational strategy that allows students to apply classroom learning in authentic workplace settings while exploring potential career pathways (Advance CTE, 2015). Within school-based Agricultural Education, Supervised Agricultural Experiences (SAEs) serve as a structured form of WBL that emphasizes experiential learning and career exploration (Newcomb et al., 2004). Although prior research highlights perceived benefits of SAEs (Cheatham, 1980; Lamberth, 1986; Williams & Dyer, 1997), limited empirical evidence exists examining how participation in experiential learning can predict students' Career Decision Self-Efficacy. This study was guided by three objectives: 1) to determine the best predictor of CDSE among students with active SAEs, 2) to evaluate the relationship between hours invested in experiential learning and years of SAE participation, and 3) to evaluate the relationship between hours invested in experiential learning and type of SAE.

Theoretical Framework

The Social Learning Theory of Career Decision-Making and the Social Cognitive Career Theory served as the theoretical framework. Krumboltz (1974) emphasizes how chance events, reinforcement, and observational learning contribute to the development of career preferences and behaviors. The Social Cognitive Career Theory (SCCT) explains how self-efficacy beliefs, outcome expectations, and personal goals interact with contextual support to shape career interests, choices, and performance (Lent, et al., 2002). Participation in an SAE allows students to operationalize content knowledge from their coursework and align their strengths with potential career opportunities. As a student experiences success in their SAEs, they will develop a stronger sense of self-efficacy and positive outcome expectations for future actions resulting in an improved ability to make an informed career decision and higher levels of career-preparation behaviors.

Methods

An IRB-approved instrument adapted from Betz & Taylor (2006) was utilized for this study. The instrument included validated scales from the Career Decision Self-Efficacy Short Form ($\alpha = 0.94$) and sections to collect information on students' participation in their respective SAEs. 240 students and their parents consented to participate; the population of interest comprised students enrolled in eight SBAE programs in central [STATE], representing rural, suburban, and urban classifications. Participants voluntarily completed the instrument via Qualtrics. An index for CDSE scores was created (0 – 125) for use in regression analysis, which was conducted in R. Descriptive statistics were calculated for all quantitative and qualitative variables.

Results

Objective 1 sought to determine the best predictor of Career Decision Self-Efficacy among students with an active SAE. Table 1 summarizes descriptive statistics about the participants.

Table 1. *Descriptive Statistics of Students with Active SAEs (n = 240)*

Variable Name	μ	σ	N	%
Career Decision Self-Efficacy (CDSE) Score	93.94	15.11		
Age	16.62	1.14		
Years in Agriculture Education	2.05	1.08		
Hours Invested in Experiential Learning	95.14	125.16		
SAE Type				
Foundational			112	46.67
Entrepreneurship			52	21.67
Placement			39	16.25
Research			20	8.33
Service-Learning			17	7.08

Four multiple linear regression models were estimated (Table 2) to determine statistically significant predictors of Career Decision Self-Efficacy (CDSE).

Table 2. *Condensed Summary of Regression Models Predicting CDSE (n =240)*

Model	Predictors	Adjusted R^2	F(df)	p
A	Age, Hours	0.033	5.13 (2, 237)	0.006
B	Age, Hours*Years	0.023	2.14 (5, 234)	0.061
C	Age, Hours*SAE Type	0.031	2.26 (6, 233)	0.039
D	ln(hours), Age	0.040	5.97 (2, 237)	0.003

Model D, which included age and a natural log transformation of hours invested in experiential learning, provided the best fit. This model explained approximately 4% of the variance in CDSE scores (adjusted $R^2 = .04$) after accounting for model complexity. The overall regression model was statistically significant, $F(2, 237) = 5.97$, $p < .01$. Both predictors contributed significantly to the model, indicating that greater time investment in experiential learning and increased age were associated with higher CDSE scores.

Objectives 2 and 3 aimed to evaluate the relationship between hours invested in experiential learning and years of SAE participation & type of SAE, respectively. Models B & C were developed with interaction terms (Hours*Years and Hours*SAE Type), but the interaction terms were non-significant and excluded from forward selection in future models.

Conclusions and Recommendations

Regarding objective 1, hours invested in experiential learning and age were the best variable to predict CDSE scores among students ages 14-18. This is consistent with the literature that career decision-making abilities increase with additional occupational experience and maturity (Chasanah & Salim, 2019). Objectives 2 and 3 revealed that type of SAEs and years of involvement in agriculture coursework were not statistically significant predictors of CDSE in this sample. Future recommendations for research include a longitudinal design to capture changes in CDSE scores over 3-4 years, obtaining a larger sample size to provide generalizable recommendations on a statewide level, and collecting additional quantitative data about SAE involvement to create additional models to predict students' career decision-making abilities.

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