

Stability in a Transitional Time: Factors Contributing to Agricultural Educator's Decision to Remain in the Profession

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Abstract

Agricultural education's most pressing issue is a lack of qualified classroom teachers. In 2020-2021, 30 states reported the loss of over 70 agricultural education positions, with many schools closing these positions due to inadequate staffing. Furthermore, in 2021-2022, there were 1,680 agricultural education vacancies nationwide and only 789 graduates of license-eligible agricultural education teacher preparation programs. The teacher attrition rate is cited as one of the main contributors to the shortage of agricultural educators. While many studies have examined why teachers leave the profession, the purpose of this study was to ascertain the impacts of various personal, employment, and instructional factors on the decision of agricultural educators to remain in the profession. It was determined that participating agricultural educators valued all individual personal, employment, and instructional factors as Somewhat Impactful or Moderately Impactful in their decision to remain in the profession. Furthermore, the results from the Multivariate Analysis of Variance (MANOVA) suggested that Florida agricultural educators regarded the impact of personal factors and employment factors statistically more in their decision to remain in the profession than agricultural educators in Georgia. A Principal Component Analysis was used to assess correlations between each personal, employment, and instructional factor and reduce the data to the most influential components. This analysis reduced the data from the original twenty-two factors to seven principal components: 1.) Teacher Support 2.) Working with Students 3.) Resource Management 4.) Retirement 5.) Location of Employment 6.) Personal/Family Expectations 7.) Professional Development.

Introduction

Over the last few decades, the most pressing issue surrounding School-Based Agricultural Education (SBAE) has been the lack of qualified agricultural educators (Foster et al., 2020; Moore & Camp, 1979). The lack of agricultural educators has largely been contributed to teacher attrition (Blackburn et al., 2017; Clemons et al., 2021; Hainline et al., 2015; Lemons et al., 2015; Mack et al., 2019; Solomonson & Retallick, 2018; Solomonson et al., 2021; Traini et al., 2021). In fact, 41% of teachers exit the profession within their first five years of employment (Ingersoll et al., 2014). In addition to high attrition rates, low enrollment in teacher preparation programs has exacerbated the shortage of educators (Smith et al., 2022; Solomonson et al., 2019). In 2022, there were 1,680 agricultural teacher vacancies and only 789 individuals completing a teacher licensure program in agricultural education (Smith et al., 2022). If agricultural education is going to improve attrition rates and retain qualified teachers, education stakeholders must understand why active agricultural educators remain in the profession (Clemons et al., 2021; Solomonson et al., 2021).

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Review of Literature

For decades, teacher attrition has plagued American public education (Foster et al., 2020; Moore & Camp, 1979; Shen, 1997). Over 157,000 teachers leave the profession annually, and another 232,000 transfer school districts (Mack et al., 2019). This plight costs American education approximately \$7 billion annually and has been cited as the most pressing issue in public education (Mack et al., 2019).

Unfortunately, Agricultural Education faces similar challenges, and the demand for qualified educators has increased while the supply has decreased (Blackburn et al., 2017; Clemons et al., 2021; Hainline et al., 2015; Lemons et al., 2015; Mack et al., 2019; Solomonson & Retallick, 2018; Solomonson et al., 2021; Traini et al., 2021). This demand for qualified agricultural educators is evident in the rising number of U.S. secondary agricultural programs, the increased number of active agricultural educators, and the total national enrollment of secondary agricultural students (Foster et al., 2020; Smith et al., 2022). Furthermore, over 674 SBAE educators employed in the 2020-2021 school year would not return for the 2021-2022 school year (Smith et al., 2022).

Not only has there been a shortage of educators entering and continuing their careers in education, but teacher education programs at the post-secondary level have also experienced a dramatic decrease in enrollment (Sawchuk, 2015). This reduced interest in becoming a career educator is startling and has placed a great deal of stress on the educational system in the U.S. (Mack et al., 2019; Sawchuk, 2015). Unfortunately, agricultural education has not been immune to the decline in teacher education enrollment (Foster et al., 2020; Smith et al., 2022). In 2021-2022, the National Association of Agricultural Education (NAAE) identified that over 30 states had a deficit of agricultural educators, with 1680 new hires nationally and only 789 students completing a license-eligible teacher preparation program (Smith et al., 2022). Additionally, in 2013, there were 10,874 SBAE teachers throughout the U.S. (Foster et al., 2014), but in 2021 there were 13,349 (Smith et al., 2022). This 23% increase in teachers is contrasted by the decline in teacher education program enrollment (Foster et al., 2014; Sawchuk, 2015; Smith et al., 2022). While there was a net increase in agricultural educators from 2013-2022, approximately 22.8% of new agricultural educators hired are either unlicensed or alternatively certified (Smith et al., 2022).

While teacher attrition has plagued American education on multiple levels, research shows that various demographics are more susceptible to attrition than their peers. Overall, some studies show that nearly 41% of educators leave the teaching field in their first five years (Ingersoll et al., 2014), but teachers with more than five years of experience are more likely to remain in the profession (Billingsley, 2004; Mack et al., 2019; Shen, 1997; Solomonson et al., 2019). Furthermore, research suggests that women are more likely to exit the profession earlier than men (Kelsey, 2006; Mack et al., 2019) and that Caucasians are more likely to have higher attrition rates than other races (Mack et al., 2019). While there are numerous reasons for teachers leaving the profession, the most common reason cited is career dissatisfaction (Blackburn et al., 2017; Clemons et al., 2021; Lemons et al., 2015; Mack et al., 2019; Traini et al., 2021).

This career dissatisfaction stems from a multitude of sources, including lower pay than other similarly educated careers, presumably better career options, work/life balance, student discipline, workplace conditions, and administrative interference (Blackburn et al., 2017; Clemons et al., 2021; Lemons et al., 2015; Mack et al., 2019; Traini et al., 2021). In many cases, the COVID-19 pandemic exacerbated this feeling of dissatisfaction among educators (Shoulders et al., 2021). Peake et al. (2022) found that of the 297 agricultural educators who left the profession in Georgia from 2009-2019, the most common reasons for leaving included retirement, accepting positions in industry, choosing to stay home with their personal children, and transitioning to teach other subjects.

Research further suggests that student discipline, school location, and school demographics are all significant factors in an educator's decision to leave the profession prematurely (Blackburn et al., 2017;

Clemons et al., 2021; Lemons et al., 2015; Mack et al., 2019; Traini et al., 2021). Furthermore, poor student behavior, attitude, and motivation have been identified as reasons negatively affecting attrition rates (Mack et al., 2019; Solomonson et al., 2019; Solomonson et al., 2021). Teachers employed in urban schools, schools with limited resources, or overcrowded classrooms have all indicated a higher intent to quit (Mack et al., 2019). In many cases, teachers have higher amounts of stress and more health issues caused by stress and report an overall lower quality of life than people in other careers (Mack et al., 2019). These physical and mental issues can arise from a misbalance between professional and personal responsibilities, often influencing an educator's decision to exit the profession (Clemons et al., 2021; McKim & Sorensen, 2020; Traini et al., 2020).

Retaining quality educators is imperative to reduce the effects of teacher attrition on agricultural education (Guffey & Young, 2020; Moser & McKim, 2020; Solomonson et al., 2022). According to Solomonson et al. (2021), agricultural educators' top retention factors were the teacher's ability to engage students, having a supportive family, school building administrator, and school board, and their attitude toward students. Furthermore, Ismail and Miller (2021) examined the motivations behind choosing teaching as a career, categorizing them into intrinsic and extrinsic factors. Intrinsically, individuals are attracted to teaching for the personal satisfaction it promises, including the joy of teaching, compatibility with their personality, a love for working with children, and the opportunity to be a positive influence. Extrinsically, the profession appeals for its practical benefits, such as favorable job perks, flexible schedules, and a positive work environment. As agricultural educator stakeholders strive to retain teachers, understanding why agricultural educators have chosen to remain in the profession will be vital.

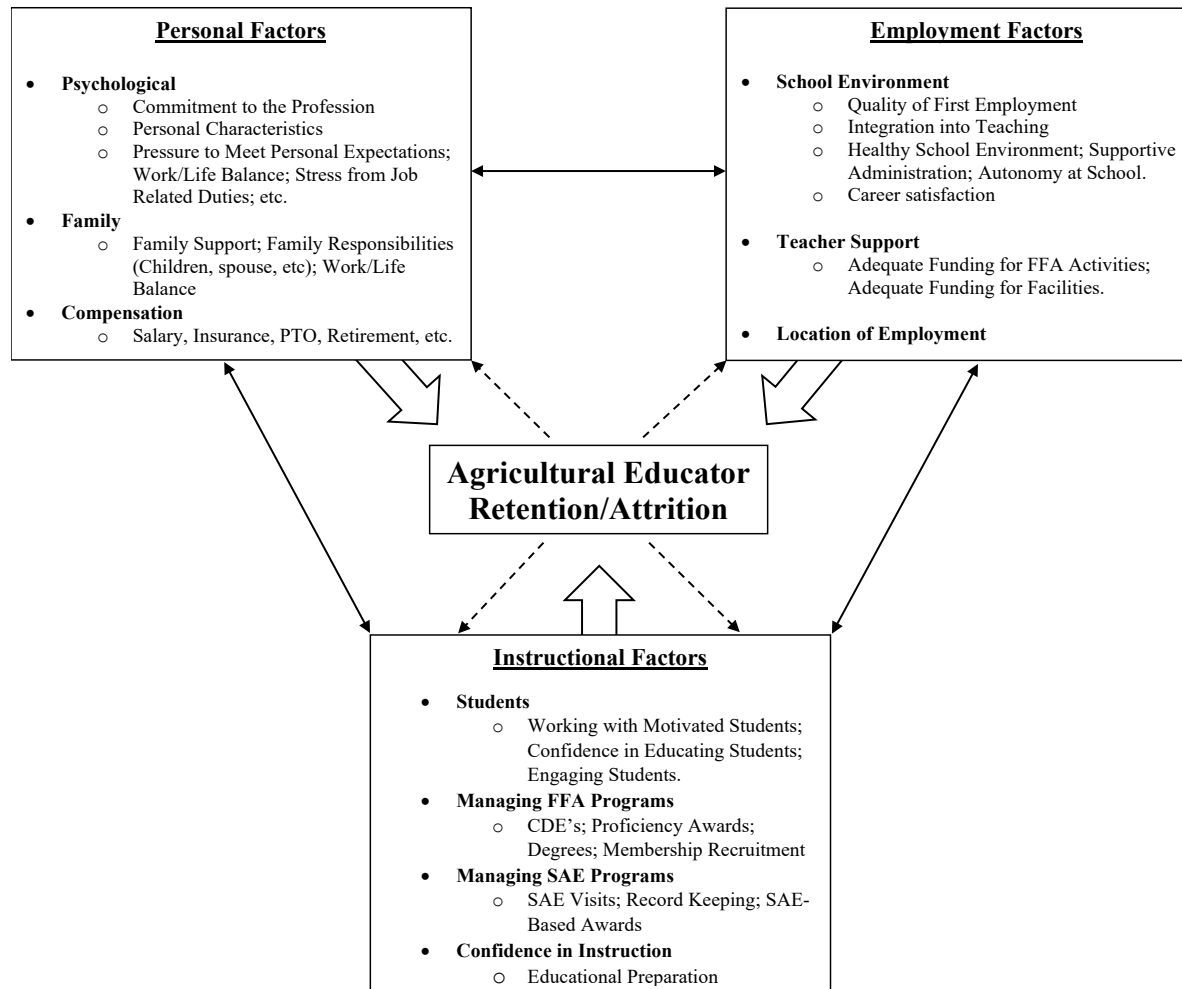
While there is a great deal of literature on why teachers are leaving the agricultural education classroom, there is a lack of literature on why active agricultural educators remain in the profession. If agricultural education is going to lower the attrition rate, retain teachers, and increase teacher education enrollment, education stakeholders must understand what factors impact teachers' decisions to remain in the profession. Understanding these impactful factors will assist in advertising the benefits of being an educator, improving the working environment for teachers, and replicating the most impactful influences.

Theoretical Framework

The theoretical framework that guided this study was the Attrition Theory developed by Grissmer and Kirby (1987). The attrition theory asserts that educators leave the profession due to several factors, including 1) personal characteristics, 2) educational preparation, 3) commitment to the profession, 4) quality of first employment, 5) integration into teaching, 6) external influences, and 7) satisfaction of their career (Grissmer & Kirby, 1987). Much of the research on the attrition of agricultural educators compliments the assertions made by Grissmer and Kirby (Blackburn et al., 2017; Clemons et al., 2021; Lemons et al., 2015; Mack et al., 2019; Traini et al., 2021). A conceptual framework was adapted from Solomonson et al. (2018) and Tippens et al. (2013) to depict this theory. The framework depicts the interactions between the seven factors developed by Grissmer and Kirby and the top retention factors determined by Solomonson et al. (2021). It reduces those factors to three primary constructs: personal, employment, and instructional factors. The factors in the conceptual framework portray how agricultural educators consciously decide to remain in the profession and how they view their ability to perform the required tasks of a teacher (Grissmer & Kirby, 1987; Solomonson et al., 2018; Tippens et al., 2013). If the agricultural educator shortage and teacher attrition rates are going to improve, researchers must study the decision-making process of active agricultural educators and determine which specific factors impact their decision to remain in the profession. The interaction between the attrition theory and agricultural educators' decision to remain in the profession is depicted in Figure 1.

Figure 1

Conceptual framework of factors influencing educator’s decision to remain in the profession.



Note. Conceptual Framework was Developed and/or Modified from Grissmer & Kirby (1987), Solomonson et al. (2018), Tippens et al. (2013).

Purpose and Objectives

This study aimed to determine the impact of various personal, employment, and instructional factors on an active agricultural educator’s decision to remain in the profession. This study has the potential to provide insight into Alabama, Georgia, and Florida agricultural educators’ reasoning for choosing to retain their careers as an agricultural educator. The following research objectives were utilized to guide the study:

- 1.) Determine the level of impact that each personal, employment, and instructional factor had on agricultural educators’ decision to remain in the profession.
- 2.) Assess any statistical differences between constructs by state of employment on participating agricultural educators’ decision to remain in the profession.
- 3.) Assess the principal component analytic properties of each personal, employment, and instructional factor and determine any correlational relationships between each factor.

Methods

Participants

The participants in this study included agricultural educators in Alabama ($N = 101$), Georgia ($N = 206$), and Florida ($N = 173$). The frame for this study was developed from agricultural educator directories maintained by the state agricultural education staff. The researchers utilized systematic random sampling to select every third educator from the directory.

Instrumentation

To execute the research objectives of this study, the researchers utilized a descriptive correlational research design. The two-section instrument used in this study was delivered via Qualtrics. Section one of the instrument measured the factors contributing to Alabama, Georgia, and Florida agricultural educators' decision to remain in the profession. Section two collected demographic data on the participants.

The participants were asked to rate factors contributing to their decision to remain in the profession on a five-point Likert-type scale (1 = *Does Not Impact*; 2 = *Very Little Impact*; 3 = *Somewhat Impacts*; 4 = *Moderately Impacts*; 5 = *Strongly Impacts*). The instrument utilized in this study was modified from the instrument developed by Solomonson et al. (2021) and Tippens et al. (2013). Solomonson et al. (2021) utilized 37 items to assess teacher retention. To develop the 22-item instrument used for this study, the top retention factors found in Solomonson et al. (2021) were modified with further additions from Tippens et al. (2013). The constructs measured in the study included employment factors, personal factors, and instructional factors, which were derived from the theoretical and conceptual frameworks developed by Grissmer and Kirby (1987), Solomonson et al. (2018), Solomonson et al. (2021), and Tippens et al. (2013).

The instrument's validity was assessed by forming a committee of two faculty and one doctoral student to evaluate the instrument. The committee evaluated the instrument and provide feedback on improving the face, construct, and content validity. Additionally, Solomonson et al. (2021) and Tippens et al. (2013) assessed their instruments for validity and reliability and determined it acceptable. To further increase the validity and reliability of the instrument for this study's audience, a pilot study was conducted before the data collection of the main study.

Pilot Study

A pilot study was conducted with New Mexico agricultural educators to assess the validity and reliability of the survey instrument. The sample selected for the pilot study consisted of ($n = 50$) agricultural educators and returned a 36.0% response rate ($f = 18$). According to Hill (1998), 10 - 30 responses are necessary for pilot studies. Reliability coefficients (Cronbach's alpha) were utilized to measure the reliability of the survey instrument. The Cronbach's Alpha scores ranged from .71 to .82 (Table 1). According to Ary et al. (2010), these reliability coefficients meet the threshold for an acceptable level of reliability. Therefore, the results of the analysis suggest that the instrument used was reliable.

Table 1

Instrument Reliability Test Results for Personal, Employment, and Instructional Factors

Factors Impacting Employment Decision	α	N Items
Personal Factors	.74	8
Employment Factors	.82	7
Instructional Factors	.71	7

Note. $f = 18$

Data Collection

A list of agricultural educators was compiled using resources from the Alabama State Department of Education, Georgia State Department of Education, and the Florida State Department of Education. The researchers used systematic sampling to select every third teacher for the study, which provided a random sample of educators for the study. The final sample contained 101 teachers from Alabama, 206 teachers from Georgia, and 173 teachers from Florida ($N = 480$). A total response rate of 30.21% ($n = 145$) was achieved. These three states were selected due to their close geographical proximity to each other and their similarities in agricultural education programming.

To assess non-response bias, an independent samples *t*-test was used to compare differences among early responders and late responders (Lindner et al., 2001). Overall, four emails were sent in weekly intervals to each teacher selected in the sampling to stimulate responses (Dillman et al., 2014). To assess non-response bias, participants who responded to the first email were considered early respondents ($n = 64$), and participants who responded to the other three emails were considered late respondents ($n = 81$). No statistical differences were found after analyzing for non-response bias.

Analysis of the Data

To analyze research objective one a set of frequencies, percentages, means, standard deviations, and construct scores were utilized. Research objective two was analyzed using a Multivariate Analysis of Variance (MANOVA), and research objective three was analyzed using a Principal Component Analysis (PCA).

Limitations

The findings of this study should not be generalized beyond the assessed agricultural educators due to the limited response rate of 30.21%. Furthermore, the data collected is limited because it represents the perceptions of agricultural educators from three geographically close states. Additionally, all data collected was self-reported by the educators and could be skewed due to misestimations in their perceptions.

Demographics of the Participants

Demographic information from this study is presented in Table 2. Female agricultural educators comprised the largest gender group (55.2% or $f = 80$), while 44.8% ($f = 65$) of participants were male. A total of 91.0% of participants were white ($f = 132$), 6.2% were African American ($f = 9$), 2.1% were Hispanic ($f = 3$), and 0.7% of participants were of another race ($f = 1$). The average age of participants was 38.71 years old ($SD = 11.17$). Furthermore, 13.1% of the participants were 25 years old or less ($f = 19$), 35.1% were 26-35 years old ($f = 51$), 34.5% were between 36-50 years old ($f = 50$), 16.6% were 51-65 years old ($f = 24$), and 0.7% were 65 or older ($f = 1$). Approximately 37.2% ($f = 54$) of participants' highest degree earned was a bachelor's degree, 40.1% had a master's degree ($f = 58$), 17.2% had a specialist degree ($f = 25$), and 5.5% ($f = 8$) had a doctoral degree.

The average years of experience as an agricultural educator was 12.03 years ($SD = 9.06$). Additionally, 2.8% had less than one year of experience ($f = 4$), 26.9% had 1-5 years of experience ($f = 39$), 26.9% had 6-10 years of experience ($f = 39$), 23.4% had 11-20 years of experience ($f = 34$), and 20.0% had 20 years of experience or more ($f = 29$). Over 79% of participants were traditionally certified ($f = 115$), and 20.7% were alternatively certified ($f = 30$). In addition, 70.3% of participants reported that they were married ($f = 102$), 3.4% reported they were divorced/widowed ($f = 5$), 9.7% claimed they were dating/engaged ($f = 14$), 13.8% are single ($f = 20$), and 2.8% preferred to not disclose ($f = 4$).

Table 2*Demographics Characteristics of Participating Agricultural Educators*

		<i>f</i>	<i>%</i>
State of Employment	Alabama	48	33.1
	Georgia	69	47.6
	Florida	28	19.3
Gender	Male	65	44.8
	Female	80	55.2
Race	White	132	91.0
	African American	9	6.2
	Hispanic	3	2.1
	Other	1	0.7
Age	25 Years or Less	19	13.1
	26-35 Years	51	35.1
	36-50 Years	50	34.5
	51-65 Years	24	16.6
	65+ Years	1	0.7
Highest Degree Earned	Bachelors	54	37.2
	Masters	58	40.1
	Specialist	25	17.2
	Doctoral	8	5.5
Years of Experience Teaching Agriculture	Less Than One Year	4	2.8
	1-5 Years	39	26.9
	6-10 Years	39	26.9
	11-19 Years	34	23.4
	20 + Years	29	20.0
Teaching Certification	Traditional Certification	115	79.3
	Alternative Certification	30	20.7
Relationship Status	Married	102	70.3
	Divorced/Widowed	5	3.4
	Dating/Engaged	14	9.7
	Single	20	13.8
	Prefer to Not Disclose	4	2.8
Do you have Children?	Yes	99	68.3
	No	45	31.0
	Prefer to Not Disclose	1	0.7
Length of Teaching Contract with State Sponsored Days	9 Month	12	8.3
	10 Month	28	19.3
	11 Month	38	26.2
	12 Month	67	46.2
# of Teachers in Agriculture Department	1	76	52.4
	2-3	57	39.3
	4+	12	8.3

Note. $n = 145$.

Approximately 68.3% of the participants had children ($f = 99$), 31.0% did not have children ($f = 45$), and 0.7% preferred to not disclose this information ($f = 1$). The length of employment contracts varied with 8.3% of participants claiming to be on a nine-month contract ($f = 12$), 19.3% are on a ten-month contract ($f = 28$), 26.2% are on an eleven-month contract ($f = 38$), and 46.2% are on a twelve-month contract ($f = 67$). The data on employment contracts includes state sponsored days such as extended day/year and RFP grants. Lastly, the size of agriculture programs varied with 52.4% of participants reporting they taught in a one teacher department ($f = 76$), 39.3% taught in a 2-3 teacher department ($f = 57$), and 8.3% taught in a department with 4 or more agriculture teachers ($f = 12$).

Results

Research Objective One

The factors utilized in research objective one assessed the motivation of agricultural educators to remain in the teaching profession. Means, standard deviations, and construct scores for research objective one are presented in Table 3.

Table 3

Means and Construct Scores for Factors Impacting Teacher Retention

Individual Factors	<i>M</i>	<i>SD</i>
Instructional Factors	4.13	.85
Working with Motivated Students	4.37	.75
Attitude Towards Students	4.37	.73
Confidence in Educating Students	4.26	.85
Engaging Students	4.26	.80
Confidence in Instruction	4.24	.81
Managing FFA Programs	4.05	.96
Managing SAE Programs	3.38	1.03
Employment Factors	3.98	1.09
Location of Employment	4.09	1.02
Adequate Funding for Facilities	4.07	1.07
Healthy School Environment	4.06	1.00
Supportive Building Administration	3.99	1.12
Adequate Funding for FFA Activities	3.97	1.11
Autonomy at School	3.96	1.06
Supportive School Board	3.74	1.23
Personal Factors	3.64	1.15
Fulfillment of Personal Expectations as a Teacher	4.17	.90
Retirement Benefits	4.06	.95
Family Support	3.91	1.20
Salary	3.78	1.18
Work/Life Balance	3.78	1.23
Insurance Benefits	3.64	1.16
Paid Time Off	3.01	1.41
Professional Development Opportunities	2.79	1.14

Note. $n = 145$. 1 = Does Not Impact; 2 = Very Little Impact; 3 = Somewhat Impacts; 4 = Moderately Impacts; 5 = Strongly Impacts.

The three factors evaluated in this study included personal, employment, and instructional factors. Instructional factors had the highest construct score ($M = 4.13, SD = 0.85$) with working with motivated students ($M = 4.37, SD = 0.75$), attitude towards students ($M = 4.37, SD = 0.73$), confidence in educating students ($M = 4.26, SD = 0.85$), engaging students ($M = 4.26, SD = 0.80$), confidence in instruction ($M = 4.24, SD = 0.81$), and managing FFA programs ($M = 4.05, SD = 0.96$) being rated as *Moderately Impactful*. In addition, managing SAE programs ($M = 3.38, SD = 1.03$) was rated as *Somewhat Impactful*.

Employment factors had the second highest construct score ($M = 3.98, SD = 1.09$) with location of employment ($M = 4.09, SD = 1.02$), adequate funding for facilities ($M = 4.07, SD = 1.07$), healthy school environment ($M = 4.06, SD = 1.00$), supportive building administration ($M = 3.99, SD = 1.12$), adequate funding for FFA activities ($M = 3.97, SD = 1.11$), autonomy at school ($M = 3.96, SD = 1.06$), and a supportive school board ($M = 3.74, SD = 1.23$) all being rated as *Moderately Impactful*.

Personal factors had the lowest construct score ($M = 3.64, SD = 1.15$) with fulfillment of personal expectations as a teacher ($M = 4.17, SD = .90$), retirement benefits ($M = 4.06, SD = 0.95$), family support ($M = 3.91, SD = 1.20$), salary ($M = 3.78, SD = 1.18$), work/life balance ($M = 3.78, SD = 1.23$), and insurance benefits ($M = 3.64, SD = 1.16$) all rated as *Moderately Impactful*. Additionally, paid time off ($M = 3.01, SD = 1.41$) and professional development opportunities ($M = 2.79, SD = 1.14$) were rated *Somewhat Impactful*.

Research Objective Two

To evaluate research objective two, a Multivariate Analysis of Variance (MANOVA) was used to compare construct scores for personal factors, employment factors, and instructional factors for Alabama ($f = 48$), Georgia ($f = 69$), and Florida ($f = 28$) agricultural educators. The means, construct scores, and standard deviations for each factor by state are listed in Table 4.

Table 4

Construct Scores for Factors Impacting Employment Decision (n = 145)

Construct Scores	<i>M</i>	<i>SD</i>	<i>N</i>
Total Instructional Factor’s Construct Scores	4.13	.58	145
Alabama	4.05	.59	48
Georgia	4.13	.60	69
Florida	4.29	.49	28
Total Employment Factor’s Construct Scores	3.98	.77	145
Alabama	3.86	.80	48
Georgia	4.19	.65	69
Florida	3.66	.88	28
Total Personal Factor’s Construct Scores	3.64	.70	145
Alabama	3.58	.72	48
Georgia	3.84	.64	69
Florida	3.24	.64	28

Note. $n = 145$. 1 = Does Not Impact; 2 = Very Little Impact; 3 = Somewhat Impacts; 4 = Moderately Impacts; 5 = Strongly Impacts.

Mahalanobis distance scores were computed to identify multivariate outliers among variables. One case exceeded the critical value of 13.82 ($\alpha = .001$) based on two degrees of freedom, but it was retained due to its limited nature. Multicollinearity was assessed using a threshold tolerance level of .20 (Menard, 1995). It was determined that the condition was not violated with Personal Factor’s Construct Scores,

Tolerance = .75; Employment Factor’s Construct Scores, Tolerance = .73; and Instructional Factor’s Construct Scores, Tolerance = .96 all meeting the threshold (Menard, 1995).

Bartlett’s Test of Sphericity was statistically significant ($p < .001$), indicating that the data were sufficiently correlated and the assumption was not violated. The Shapiro-Wilk’s test revealed that two of the three dependent variables violated the multivariate normality assumption. Olson (1974) suggests that the MANOVA is robust against deviations from normality. Linearity was evaluated through Q-Q plots and individual scatterplot matrices, and it was determined that the assumption was met. Box’s test was used to assess the homogeneity of covariance matrices, which yielded a nonsignificant result (Box’s $M = 10.47$, $F(12, 33546) = .84$, $p = .61$), indicating that the assumption was met.

A MANOVA was then conducted to assess the impact of various personal, employment, and instructional factors on agricultural educators' decisions to remain in the profession by state of employment. It was determined that there was a significant effect: Wilk’s $\lambda = .845$, $F(6, 278) = 4.07$, $p < .001$. The analysis measured a medium effect size using partial eta squared ($\eta_p^2 = .141$) (Cohen, 1988). The results from the MANOVA are presented in Table 5.

Table 5

MANOVA Results for Factors Impacting Employment Decisions by State of Employment

Wilks’ λ	F	Hypothesis df	Error df	p	η_p^2
.845	4.07	6	278	<.001	.141

Note. $\alpha = .05$

To further investigate the statistically significant determination, three univariate Analysis of Variance (ANOVA) tests were used to assess any statistical differences. The test indicated that there are statistical differences within the Employment Factor’s construct scores from each state $F(2, 141) = 5.85$, $p = .004$ and the Personal Factor’s construct scores from each state $F(2,141) = 8.26$, $p < .001$ at the $\alpha = .05$ level. Furthermore, the univariate ANOVA’s indicated no statistical differences among the Instructional Factor’s construct scores from each state $F(2, 141) = 1.44$, $p = .241$. The effect size for the Employment factors ($\eta_p^2 = .077$), Personal Factors ($\eta_p^2 = .105$), and Instructional Factors ($\eta_p^2 = .020$) all suggested a small to medium effect was present (Cohen, 1988). The results from the univariate ANOVA’s are presented in Table 6.

Table 6

Univariate ANOVA Results for Factors Impacting Employment Decisions by State

Dependent Variable	Type III Sum of Squares	df	F	p	η_p^2	Observed Power
Instructional Factor’s Construct Scores	.96	2	1.44	.24	.020	.30
Employment Factor’s Construct Scores	6.52	2	5.85	<.001	.077	.87
Personal Factor’s Construct Scores	7.37	2	8.26	<.001	.105	.96

Note. $\alpha = .05$

In the post hoc analysis, the Bonferroni criterion was used to discern any differences among Alabama, Georgia, and Florida construct scores. The results from the post hoc analysis are listed in Table 7.

Table 7

Post Hoc Analysis for Factors Impacting Employment Decisions by State of Employment

Dependent Variable	State of Employment	State of Employment	SE	<i>p</i>	95% Confidence Interval	
					Lower Bound	Upper Bound
Personal Factor's Construct Score	Alabama	Florida	.16	.11	-.05	.73
		Georgia	.13	.11	-.57	.04
	Florida	Alabama	.16	.11	-.73	.05
		Georgia	.15	<.001	-.97	-.24
	Georgia	Alabama	.13	.11	-.04	.57
		Florida	.15	<.001	.24	.97
Employment Factor's Construct Score	Alabama	Florida	.18	.77	-.23	.64
		Georgia	.14	.06	-.67	.01
	Florida	Alabama	.18	.77	-.64	.23
		Georgia	.17	.01	-.94	-.12
	Georgia	Alabama	.14	.06	-.01	.67
		Florida	.17	.01	.12	.94
Instructional Factor's Construct Score	Alabama	Florida	.14	.28	-.57	.10
		Georgia	.11	1.00	-.34	.19
	Florida	Alabama	.14	.28	-.10	.57
		Georgia	.13	.67	-.16	.48
	Georgia	Alabama	.11	1.00	-.19	.34
		Florida	.13	.67	-.48	.16

Note. $\alpha = .05$

The post hoc analysis indicated that there were statistical differences ($\alpha = .05$) in how Georgia and Florida agricultural educators regarded the impact of personal factors ($p < .001$) and employment factors ($p = .006$) in their decision to remain in the profession.

Research Objective Three

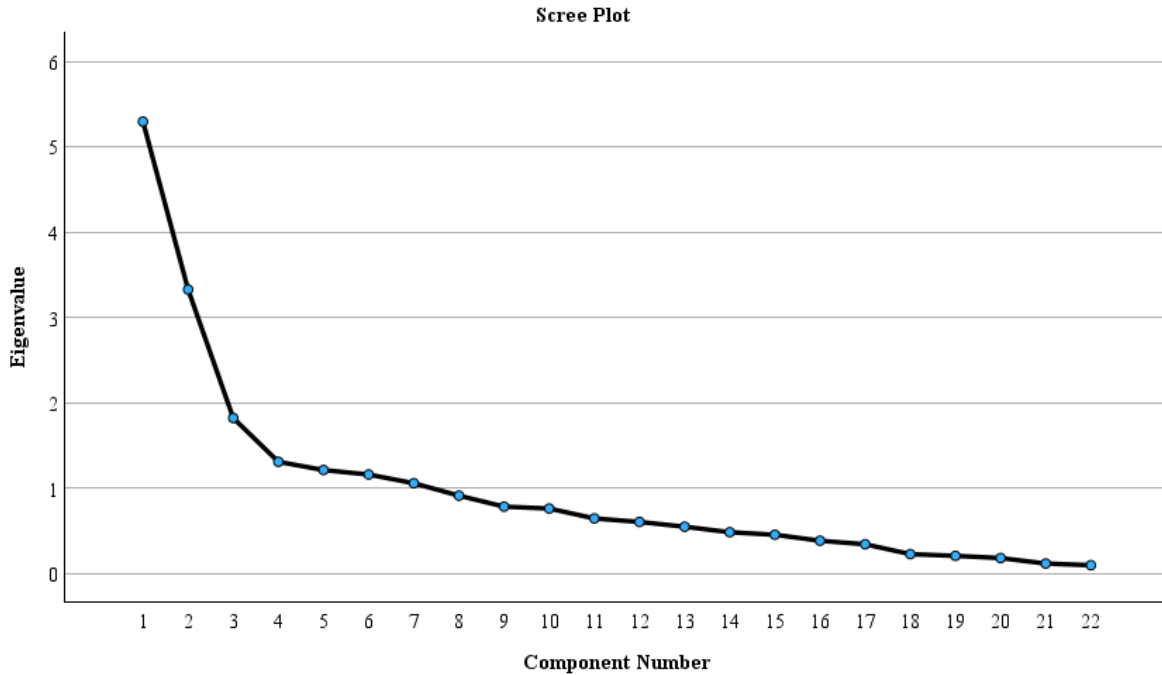
Principal Component Analysis (PCA) was used as the extraction method to reduce the number of factors assessed. The data were rotated using promax rotation with Kaiser Normalization for the twenty-two originally assessed personal, employment, and instructional factors. According to Tabachnick & Fidell (2001), "PCA is the solution of choice for the researcher who is primarily interested in reducing a large number of variables down to a smaller number of components" (p. 612).

In the current literature, there is a great deal of ambiguity in determining the minimum sample size for a PCA. According to Hair et al. (1998) and Gorsuch (1983), a sample size of 100 or more subjects is needed. In addition, Kline (1979) suggests a 2:1 ratio of participants to individual factors. While some research recommends higher sample sizes, ample evidence indicates that an $n = 145$ sample size is appropriate for the PCA (Gorsuch, 1983; Hair et al., 1988; Kline, 1979). Furthermore, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was .721, which meets the standard of a KMO value of .6 or higher for a quality factor analysis (Shrestha, 2021). Additionally, the communalities of each factor ranged from .53 - .82. This meets the standard threshold of a communality score of .40 or higher (Osbourne et al., 2008).

The main methods to screen the original twenty-two variables include eigenvalues greater than or equal to one and a scree plot to evaluate slope changes in eigenvalues (Figure 2; Tabacknick & Fidell, 2001).

Figure 2

Scree Plot for Eigen Values of Components



In addition, factor loadings of $\pm .4$ were used to further screen variables within each component. The eigenvalues, the percentage of variance explained by each component, and the cumulative percentage of the variance explained are displayed in Table 8. The factor loadings for each component are listed in Table 9. The components retained in the PCA were named 1.) Teacher Support 2.) Working with Students 3.) Resource Management 4.) Retirement 5.) Location of Employment 6.) Personal/Family Expectations 7.) Professional Development.

Table 8

Statistics for Seven Retained Components

Components	Eigen Values	% of Variance	Cumulative %
#1- Teacher Support	5.30	24.08	24.08
#2- Working with Students	3.33	15.14	39.21
#3- Resource Management	1.83	8.29	47.50
#4- Retirement	1.31	5.96	53.47
#5- Location of Employment	1.22	5.52	58.99
#6- Personal/Family Expectations	1.16	5.29	64.28
#7- Professional Development	1.06	4.82	69.10

Table 9

Principle Component Factor Analysis Loadings

	Components						
	1	2	3	4	5	6	7
Family Support	.49	.02	.12	-.14	-.25	.44	-.16
Fulfillment of Personal Expectations as a Teacher	.41	.13	.33	.02	-.11	.48	.12
Paid Time Off	.37	-.31	.51	-.14	.27	.21	.02
Work/Life Balance	.51	-.25	.35	-.08	.15	.35	-.04
Insurance Benefits	.43	-.47	.42	.30	.12	-.21	-.06
Salary	.58	-.36	.26	.12	-.15	-.16	.19
Retirement Benefits	.45	-.32	.37	.40	-.30	-.28	.22
Professional Development Opportunities	.49	.08	.08	.26	.25	-.21	-.51
Supportive Building Administration	.68	-.22	-.22	-.14	.12	-.32	-.04
Location of Employment	.27	-.05	.02	-.39	.59	-.15	.14
Supportive School Board	.70	-.22	-.23	-.11	.08	-.14	-.18
Healthy School Environment	.67	-.08	-.16	-.20	.12	.02	.29
Adequate Funding for Facilities	.68	-.10	-.48	-.06	-.17	.08	-.12
Adequate Funding for FFA	.71	-.10	-.46	.03	-.22	.08	-.11
Autonomy at School	.57	-.24	-.26	-.20	-.17	.09	.09
Engaging Students	.35	.64	.17	-.18	-.16	-.29	.24
Attitude Towards Students	.36	.70	.15	-.15	-.18	-.23	.27
Confidence in Educating Students	.33	.67	.32	-.20	-.10	.00	-.31
Confidence in Instruction	.29	.76	.22	-.09	-.04	-.09	-.32
Working with Motivated Students	.19	.44	-.16	.09	.41	.16	.34
Managing SAE Programs	.33	.48	-.18	.54	.36	.13	-.07
Managing FFA Programs	.42	.41	-.21	.51	-.00	.16	.24

Note. Factor loadings above $\pm .40$ are in bold.

Conclusions and Discussions

The purpose of this study was to determine the impact of various personal, employment, and instructional factors on active Alabama, Georgia, and Florida agricultural educators' decisions to remain in the profession. In addition, this study analyzed the responses from 145 agricultural educators on why they chose to remain in the secondary agriculture classroom.

As the demographic characteristics of the participants were examined, some of the noteworthy qualities were that 55.2% of participants were female. Throughout the 100+ year history of agricultural education, agricultural educators have traditionally been male (Enns & Martin, 2015). However, in recent decades, female agricultural educators have become more prevalent (Enns & Martin, 2015).

Furthermore, 56.6% of participants have less than ten years of experience as an agricultural educator. According to Roberts et al. (2020), early career educators have 0-5 years of experience, mid-career educators have 6-15 years, and career educators have 16+ years in the classroom. This study found that over half of the participants are either in the early-career stage or the first half of the mid-career stage.

This lack of career educators is primarily due to teacher attrition (Blackburn et al., 2017; Clemons et al., 2021; Lemons et al., 2015; Mack et al., 2019; Traini et al., 2021). Furthermore, it was determined that 70.3% of participating agricultural educators are married, and 68.3% have children. Additionally, 91.7% of participants reported being employed on an advanced contract beyond the conventional nine-month contract held by traditional educators. These advanced contracts include 46.2% of participating agricultural educators being employed on the equivalent of a 12-month contract with state-sponsored days. This additional compensation is well deserved, considering agricultural educators report working an average of 55.7 hours per week (Sorensen et al., 2014).

The first research objective sought to examine the extent that agricultural educators regard the impact of the assessed personal, employment, and instructional factors on their decision to remain in the profession. The participants valued all assessed personal, employment, and instructional factors as either *Somewhat Impactful* or *Moderately Impactful*. Within the instructional factors construct, the highest-rated items were “Working with Motivated Students,” “Attitude Towards Students,” “Confidence in Educating Students,” and “Engaging Students;” however, the highest-ranked factors within the employment factors constructs were “Location of Employment,” “Adequate Funding for Facilities,” “Healthy School Environment,” and “Supportive Building Administration.” These rankings are consistent with a study completed by Solomonson et al. (2021), which found that “Teacher’s Ability to Engage Students,” “Having a Supportive Family,” “Supportive School Building Administration and School Board,” “Teacher’s Attitude Towards Students,” and “Employment Location” were the top five most impactful factors affecting the decision of Illinois agricultural educators to remain in the profession. Furthermore, it was determined that these top five factors had a high percentage of agricultural educators, indicating they strongly impacted their decision to stay in the profession (Solomonson et al., 2021). In this study, the four highest-rated items in the Personal Factors construct were “Fulfillment of Personal Expectations as a Teacher,” “Retirement Benefits,” “Family Support,” and “Salary.” These items are consistent with other studies that had similar findings (Lemons et al., 2015; Solomonson et al., 2021; Traini et al., 2021).

The results from this study align with the theoretical and conceptual framework used for this study because it depicts the interactions of these items that correspond to an educator’s retention (Grissmer & Kirby, 1987; Solomonson et al., 2018; Tippens et al., 2013). Furthermore, Solomonson et al. (2018) determined that personal factors, working conditions, teacher development, and compensation influence teacher retention and attrition. This study found that instructional factors were the most influential in a teacher’s decision to remain in the profession. In alignment with the findings of Grissmer & Kirby (1987), if an educator has a negative experience with instruction, it could be the most impactful factor influencing them to exit the profession early.

The second research objective sought to ascertain differences in instructional, employment, and personal factors construct scores by state of employment. The MANOVA utilized to discern statistical differences among personal, employment, and instructional factors by state of employment indicates that Florida and Georgia agricultural educators regarded the impact of personal factors and employment factors differently in their decision to remain in the profession. This suggests that Florida agricultural educators remain in the profession for more altruistic reasons than educators in Georgia. These findings align well with data collected on the starting salaries, retirement benefits, and health insurance benefits of agricultural education teachers in Georgia and Florida (Florida Retirement System, 2022; 2022; Foster et al., 2020; Georgia FFA, 2022; Teacher Retirement Systems of Georgia, 2022). In Georgia, the average starting salary for an agricultural educator in 2021 was \$44,000, while the average starting salary for an agricultural educator in Florida was \$37,000 in 2021 (Foster et al., 2019). This compensation compares to an average starting salary of \$50,944 for all recent graduates of a bachelor’s degree reported by the National Association of Colleges and Employers (NACE, 2021). This 18.91% higher starting salary in Georgia for agricultural educators is coupled with a more lucrative retirement plan than what is offered to educators in

Florida, as well as more affordable and higher-quality health insurance benefits (Florida Retirement System, 2022; Georgia FFA, 2022; Teacher Retirement Systems of Georgia, 2022).

In research objective three, a Principal Component Analysis (PCA) was utilized to examine correlations between each personal, employment, and instructional factor. In the PCA, the original twenty-two factors were reduced to seven components that were named 1) Teacher Support, 2) Working with Students, 3) Resource Management, 4) Retirement, 5) Location of Employment, 6) Personal/Family Expectations, and 7) Professional Development. The correlations between each factor guided the names of the retained components. To determine the final list of components, the components with eigenvalues of 1.0 or more were retained. Furthermore, these seven retained components accounted for 69.1% of the variance. The convergence of these final seven components suggests they are the most influential in impacting a teacher's decision to remain in the profession. The convergence of these final seven components further aligns with the findings of other teacher attrition/retention studies in the literature (Blackburn et al., 2017; Clemons et al., 2021; Igo & Perry, 2019; Lemons et al., 2015; Mack et al., 2019; Solomonson et al., 2018; Solomonson et al., 2019; Solomonson et al., 2021; Sorensen et al., 2014; Traini et al., 2021).

Recommendations

While teacher attrition has plagued agricultural education for decades, educators who have chosen to remain in the profession suggest that intrinsic and extrinsic factors influence their decision (Lemons et al., 2015; Solomonson et al., 2018; Solomonson et al., 2019; Solomonson et al., 2021; Sorensen et al., 2014; Traini et al., 2021). Based on the findings of the study, it is recommended that education stakeholders support and enable the intrinsic reasons educators are retaining their position as an agricultural educator, such as impacting students, improving their confidence in instruction, and fulfilling their personal expectations as a teacher. Furthermore, improving the extrinsic factors that influence educators to remain in the classroom, such as salary, retirement benefits, school culture, etc., could improve the retention of educators. Additionally, comprehensive professional development should be provided to educators on prioritizing work/life balance, improving confidence in instruction, and developing realistic goals for their personal expectations as educators. For future research inquiries, the reasons agricultural educators left the profession should be assessed. Understanding where agricultural educators are going after they leave the profession will help guide the effort to reduce teacher attrition and retain educators. Furthermore, research on ways to improve teachers' experiences in the classroom and how career stage affects retention is warranted.

As agricultural education propels its way into the 21st century, it is critical that teacher attrition is addressed and that the retention of educators is prioritized on a district and legislative level. Furthermore, with 41% of educators leaving the profession in their first five years (Ingersoll et al., 2014), it is imperative that education officials inform legislators and other stakeholders of the dire need for improved benefits such as salary, retirement, and insurance benefits. Improving these influential personal, employment, and instructional factors will assist in this transitional time in education.

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