

Exploring Relationships Between Career Retention Factors and Personal and Professional Characteristics of Illinois Agriculture Teachers

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Abstract

The shortage of school-based agricultural education (SBAE) teachers in the United States has been a chronic issue for decades. Besides not having sufficient graduates in our teacher preparation programs, the number of SBAE teachers annually leaving the profession further exacerbates the problem. While the reasons why SBAE teachers leave the profession are well-documented, little research has examined career retention factors and the reasons they stay. The purpose of our study was to determine the relationships between selected career retention factors and specific demographic characteristics of SBAE teachers. Using a census design, we administered an electronic questionnaire to all 432 SBAE teachers in Illinois to determine perceived levels of occupational commitment, work engagement, and work-life balance and their relationship to nine demographic characteristics. We found no significant differences among the career retention factors under investigation and sex, marital status, parental status, possessing CASE certification, length of teaching contract, and the number of teachers employed in the agriculture department. However, we did discover that occupational commitment was significantly higher for both SBAE teachers who were fully-state certified and those with an advanced degree. Further, our findings indicate late-career teachers possess significantly higher levels of occupational commitment and work engagement than those in the novice or mid-career professional life stages. A large, positive relationship was found between levels of work engagement and occupational commitment. Two small, negative relationships existed between perceived levels to achieve a work-life balance and both work engagement and occupational commitment. Recommendations for practitioners and researchers are provided.

Keywords: agricultural education; career retention; work engagement; occupational commitment; work-life balance; teacher shortage

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Introduction

The shortage of qualified secondary school-based agricultural education (SBAE) teachers is well documented and has been a chronic issue for decades (Camp et al., 2002; Foster et al., 2020; Kantrovich, 2010). This shortage is due to the lack of qualified SBAE teachers produced by teacher preparation

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programs as well as high attrition rates amongst those in the profession (Foster et al., 2020). According to Ingersoll et al. (2018), 44% of classroom teachers chose to leave the profession within five years and the trend is likely to continue (Eck & Edwards, 2019; Foster et al., 2020).

In the United States, the financial cost of teacher attrition can be up to \$2.2 billion annually (Haynes, 2014). Replacing just one teacher exceeds \$20,000 for some school districts (Carver-Thomas & Darling-Hammond, 2017). Further, researchers have shown when good teachers leave, student achievement can be negatively affected (Carver-Thomas & Darling-Hammond, 2017; Ronfeldt et al., 2012). Richard Ingersoll, a leading authority on teacher turnover and retention, disclosed in an interview that there is much information on why teachers move to other schools or leave the profession but little on a teachers' decision to stay (Phillips, 2015). For these reasons, it is imperative to determine not only why good teachers leave but how to retain them within the profession.

Top teacher attrition factors previously identified include family or personal reasons (Ingersoll, 2000; Flynt and Morton, 2009; Murray et al., 2011; Solomonson et al., 2018), perceptions of low administrative support (Kelsey, 2006; Sutchter et al., 2016), heavy workload and responsibilities outside the normal workday (Lemons et al., 2015; Murray et al., 2011; Solomonson et al., 2018), and stress and burnout (Kitchel et al., 2012; Maslach et al., 2001, Myers et al., 2005). Fewer studies, however, have sought to explain why teachers stay in the profession. Positive administrative support (Clark et al., 2014; Rice et al., 2001) and teacher preparedness have been shown to be strongly correlated to a teacher's decision to stay in the classroom (Darling-Hammond et al., 2002; Tippens et al., 2013), as are high levels of self-efficacy (Blackburn et al., 2017). Other influential career retention factors, such as high levels of occupational commitment, work engagement, and the ability to balance work and life responsibilities, have also been shown to influence teacher retention rates (Crutchfield et al., 2013; Sorensen & McKim, 2014).

Blau et al. (1993) defined occupational commitment as an individual's attitude toward their chosen profession. Increased levels of occupational commitment have been linked to both SBAE teachers with high self-efficacy (Knobloch & Whittington, 2003; McKim & Valez, 2015) and those with strong social connections in their school and with other SBAE teachers (Moser and McKim, 2020). Strong levels of occupational commitment have also been found to be a positive predictor of teacher retention (Chapman, 1983; Crutchfield et al., 2013; Singh & Billingsley, 1996).

Work engagement originated in the field of organizational behavior (Kahn, 1990) and is typically defined as a "positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002, p. 74). Schaufeli & Bakker (2004) defined *vigor* as possessing "high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the face of difficulties" (p. 295), *dedication* as "being strongly involved in one's work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge" (p. 295), and *absorption* as "by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work." (p. 295). Schaufeli & Bakker (2006) reported that employees who are engaged will feel energetic and connected with their work and are better able to deal with the demands of their jobs. Further evidence has shown work engagement levels can be improved through access to support resources and motivators, such as professional development, mentoring, task variety, and co-worker support (Schaufeli & Bakker, 2003) in addition to perceptions of possessing a healthy work-life balance (Znidarsic & Bernik, 2021).

Work-life balance refers to the ability to manage the potential conflict between the pressures of family roles and the workplace (Greenhaus & Beutell, 1985). As previously mentioned, teaching can be a taxing career that can lead to stress and burnout (Chenevey et al., 2008; Croom, 2003; Kitchel et al., 2012; Lambert et al., 2006; Myers et al., 2005). Stressors and additional responsibilities make achieving balance difficult (Blackburn et al., 2017; Murray et al., 2011; Sorenson et al., 2016). The stressors

generated by the conflict of work roles and personal roles have been characterized as spillover by Wilensky (1960). When a teacher's classroom stressors spill over into other parts of their life, or factors from outside their job spill over into their workplace that disrupt work-life balance, teachers' attitudes about their job and life outside of work can be negatively affected (Sorenson et al., 2016; Wilensky, 1960). These statements are consistent with Sorenson and McKim's (2014) findings of a positive relationship between a SBAE teachers' work-life balance, job satisfaction, and professional commitment, which often lead to increased retention.

Our study expanded upon previous SBAE teacher career retention research conducted by Crutchfield et al. (2013) and Sorenson and McKim (2014). Crutchfield et al.'s (2013) research explored the relationships among occupational commitment, work engagement, and work-life balance and how they relate to a SBAE teachers' professional career stage. Their study found positive relationships between teachers' professional career stage and both their level of work engagement and their perceived ability to achieve a work-life balance. Further, they discovered SBAE teachers were moderate to strongly committed to the profession and that occupational commitment can be partially attributed to levels of work engagement and the ability to achieve a work-life balance.

Sorenson and McKim (2014) sought to further generalize Crutchfield et al.'s (2013) findings and examined career retention factors and their relationship to specific demographic characteristics. They found small to negligible effects on occupational commitment as they related to sex, marital status, parental status, and career stage but recommended further research exploring relationships among other demographic characteristics (Sorenson & McKim, 2013). This recommendation provided the foundation for our study. The need for our research was directed by the American Association for Agricultural Education's (AAAE) National Research Agenda, Research Priority 3: Sufficient Scientific and Professional Workforce that Addresses the Challenges of the 21st Century (Roberts et al., 2016), specifically examining the question, "What methods, models, and practices are effective in recruiting agricultural leadership, education, and communication practitioners and supporting their success at all stages of their careers?" (Stripling & Ricketts, 2016, p. 31).

Conceptual Framework

Our study was conceptualized around the body of work related to attributional theory. "Attribution theorists investigate the perception of causality, or the judgment of why a particular incident occurred" (Weiner, 1972, p. 203). This framework was useful in understanding observed and intentional behaviors of our participants. In this situation, it helped us to become aware of reasons behind the behavioral result of an individual choosing to remain in the teaching profession. However, according to Harvey and Weary (1984), "there is no monolithic theory of attribution" (p. 429). Much of Weiner's work and other literature surrounding this topic had grown from the work of Heider (1958) and Kelley (1967).

Heider's early work focused on how humans perceive the world around them and to explain the relationship between how sensory data is used to understand a real object (Malle, 2011). From here, he began to investigate the more complex social interactions between people where he described a process of attribution to explain how individuals make sense of the behavior of another. Most notably, Heider proposed a distinction between what he termed impersonal causality or causes of uncontrollable behavior or physical events versus personal causality, which explains intentional behaviors (Malle, 2011). Personal causality encompasses purposive action or as Heider (1958) stated, "refers to instance in which *p* cause *x* intentionally" (p. 100). Kelly (1967) sought to "highlight some of the central ideas contained in Heider's theory" (p. 194). His work attempted to clarify the complex relationship between intentional and unintentional behaviors as well as the judgments that individuals make regarding the potential consequences of their actions (Malle, 2011).

Weiner (1972) suggested people are affected by environmental factors (external factors), such as their home and work environment, and personal factors (internal factors) such as lived experiences and previously learned knowledge. These two factors influence the attributions people make which influence their future behavior. Attributions are often classified along three causal dimensions: locus of control, stability, and controllability (Weiner, 1974). Locus refers to the location, external or internal, of the perceived cause of failure or success. Stability relates to whether the cause of the failure or success is stable over time and in different settings. Controllability deals with the ability of the individual to control the cause of a success or failure (Weiner, 2010). Using attribution theory as our framework, we attempted to determine which personal and professional attributes of Illinois SBAE teachers influenced their decision to remain in the profession.

Purpose and Objectives

The purpose of our study was to examine the relationships between career retention factors (occupational commitment, work engagement, and work-life balance) and selected personal and professional demographic characteristics of Illinois SBAE teachers. The specific objectives of this study were to:

1. Describe the personal and professional demographic characteristics of Illinois SBAE teachers.
2. Determine Illinois SBAE teachers' perceived levels of occupational commitment, work engagement, and work-life balance and examine potential differences across selected demographic characteristics.
3. Determine the relationship between occupational commitment, work engagement, and work-life balance among Illinois SBAE teachers.

Methodology

We used a census study design to survey current SBAE teachers in Illinois. Our instrument consisted of four sections. The first three sections examined areas of influence related to career retention: (1) occupational commitment, (2) work engagement, and (3) work-life balance. Questions from these three sections were chosen from a validated instrument previously used by Crutchfield et al. (2013). The fourth section was composed of questions related to personal and professional demographics. Our instrument was developed and administered using Qualtrics.

Levels of occupational commitment were measured using questions from Blau et al.'s (1993) Work Commitment Index ($\alpha = .91$). Participants evaluated 11 career-related statements using a six-point Likert-type scale ranging from *strongly agree* to *strongly disagree*. To measure work engagement, we used the Utrecht Work Engagement Scale ($\alpha = .94$) (Schaufeli & Bakker, 2003). Our instrument had participants evaluate 17 statements on a seven-point Likert-type scale ranging from *always* to *never*. Statements sought to identify the participant's feelings towards three work-related factors: vigor, dedication, and absorption (Schaufeli & Bakker, 2003). Work-life balance levels were measured using questions from Chaney (2007) and Gutek et al. (1991). Five questions were drawn from Chaney's (2007) research on perceptions of achieving balance ($\alpha = .95$) and the belief that balance influences teacher retention or attrition ($\alpha = .76$). Eight questions were drawn from Gutek et al.'s (1991) work-family conflict instrument ($\alpha = .83$). Both used a six-point Likert-type scale ranging from *strongly agree* to *strongly disagree*.

After receiving Institutional Review Board approval, we distributed our electronic questionnaire to all 432 full-time SBAE teachers in Illinois via Qualtrics in June of 2020. We used the Illinois agricultural education online directory to obtain email addresses for all the teachers. Following recommendations from Dillman et al. (2014), we scheduled five points of contact over a period of four weeks. The first point of contact, providing information on the study and inviting our population to

participate, was sent on June 2, 2020. Two days later the electronic questionnaire was forwarded to participants. This was followed by two reminders, scheduled a week apart, and a final reminder during the SBAE teachers' virtual professional development conference the following week. Our efforts yielded a 47.0% response rate ($n = 203$). Non-response error was calculated by comparing mean scores of the work engagement factors of those individuals responding in the first week and the last week of data collection. No significant differences between groups ($p < .05$) were found. Comparing early- and late-respondents has been deemed an acceptable method of determining non-response error in agricultural education research (Lindner et al., 2001).

Data were analyzed using the Statistical Package for the Social Sciences (SPSS[®]) program version 24.0. To address our first research objective, frequencies and percentages were calculated to determine the personal and professional characteristics of the chosen population. To answer our second research objective, overall means and standard deviations of perceived levels of occupational commitment, work engagement, and work-life balance were calculated, as well as across selected personal and professional characteristics. To determine if significant differences existed across selected characteristics, unpaired samples t -tests were used when comparing the means of two groups. We used a one-way analysis of variance (ANOVA) when comparing groups of three or more. Research objective three was analyzed using a Pearson product-moment correlation to determine the relationship between the three career retention factors.

Findings

Objective 1

To address objective one, we used descriptive statistics (frequencies and percentages) to describe the personal and professional characteristics of SBAE teachers in Illinois. Of the respondents, 34.0% ($f = 69$) were 30 years of age or younger, 29.6% ($f = 60$) were between the ages of 31 and 40, 20.7% ($f = 42$) were between the ages of 41 and 50, and 15.3% ($f = 31$) were older than 51 years of age. Nearly all participants ($f = 201$; 99.0%) identified as White, non-Hispanic.

When examining professional characteristics, approximately 80% ($f = 164$; 80.8%) reported teaching in a rural community of less than 10,000 people while only 3.9% ($f = 8$) reported teaching in an urban setting of more than 50,000 people. When examining yearly salary of Illinois SBAE teachers, 7.9% ($f = 16$) self-reported earning less than \$40,000 annually with 25.6% ($f = 52$) earning between \$40,000 and \$49,999, 19.7% ($f = 40$) between \$50,000 and \$59,999, 16.7% ($f = 34$) between \$60,000 and \$69,999, 15.8% ($f = 32$) between \$70,000 and \$79,999, 6.4% ($f = 13$) between \$80,000 and \$89,999, and 7.4% ($f = 15$) earning above \$90,000 annually, respectively.

Using the years of experience outlined in Solomonson and Retallick's (2018) Professional Agriculture Teacher Life Cycle Stage model, 35.0% ($f = 71$) of respondents would be classified as novice teachers, 31.0% ($f = 63$) would be classified as mid-career teachers, and 34.5% ($f = 68$) would be classified as late-career teachers. When asked their career plans for the next five years, 83.2% ($f = 169$) indicated they plan to continue teaching agriculture at the secondary level, 7.9% ($f = 16$) specified they plan to retire, and 1.5% ($f = 3$) stated they plan to leave the education profession entirely. Fourteen participants (6.9%) chose *Other* when asked about their career plans. All other personal and professional characteristics of responding Illinois SBAE teachers can be found in Table 1 below.

Table 1*Selected Personal and Professional Demographic Data of Responding Illinois SBAE Teachers**(n = 203)*

Variable	<i>f</i>	%
Sex		
Male	80	39.4%
Female	122	60.1%
Relationship Status		
Married	147	72.4%
Not Married	55	27.1%
Parental Status		
Yes	132	65.3%
No	70	34.5%
Type of Licensure		
Fully-State Certified- Professional Educator License	170	83.7%
Alternatively- Certified- Educator License with Stipulations	32	15.8%
CASE Certified		
Yes	58	28.6%
No	144	70.9%
Highest Education Attained		
Bachelor's Degree	130	64.0%
Master's Degree	72	35.5%
Length of Teaching Contract		
Less than 12 months	93	45.8%
12 months	109	53.7%
Number of Ag Teachers in Department		
One	134	66.0%
Two or More	68	33.5%
Years of Experience (Professional Life Cycle)		
Novice (5 or less years)	71	35.0%
Mid-Career (6-15 years)	63	31.0%
Late-Career (16+ years)	68	34.5%

Note. One individual did not disclose demographic information.

Objective 2

The intent of research objective two was to determine Illinois SBAE teachers' perceived levels of occupational commitment, work engagement, and work-life balance as well as their relationship to selected demographic characteristics.

Occupational Commitment

The overall perceived levels of occupational commitment across respondents were high ($M = 4.77$, $SD = 1.39$). When examining specific personal and professional characteristics, individuals identifying as male, not married, having children, possessing a CASE certification, receiving a 12-month contract, and being employed in a multi-teacher agriculture program reported slightly higher levels of occupational commitment than the other demographic in their group. Several of these differences were found to be statistically significant. We discovered that occupational commitment was significantly higher for SBAE teachers who were fully-state certified ($p = .00$) as well as for those with an advanced degree ($p = .03$). According to Cohen (1988), the type of licensure was found to have a medium effect ($d = .56$), while their highest education attained was found to have a small effect ($d = -.32$). Further, our findings indicate late-career teachers possess significantly higher levels of occupational commitment than those in the mid-career professional life stage ($p = .04$) with a small effect size ($d = .42$). All statistics related to occupational commitment and the associated demographic groups can be found in Table 2 below.

Table 2

Perceived Levels of Occupational Commitment and Differences in Associated Demographics of Responding Illinois SBAE Teachers (n = 203)

Variable	<i>M</i>	<i>SD</i>	<i>t-test</i>	<i>p</i>	Cohen's <i>d</i>
Sex					
Male	4.86	.77			
Female	4.72	.78	1.27	.21	.18
Relationship Status					
Married	4.75	.83			
Not Married	4.82	.61	.54	.59	.09
Parental Status					
Children	4.78	.78			
No Children	4.76	.77	.13	.90	.02
Type of Licensure					
Fully-State Certified	4.84	.76			
Alternatively- Certified	4.40	.76	3.00	.00*	.56
CASE Certified					
Certified	4.80	.71			
Not Certified	4.76	.80	.27	.78	.04
Highest Education Attained					
Bachelor's Degree	4.68	.76			
Master's Degree	4.93	.78	-2.23	.03*	-.32
Length of Teaching Contract					
Less than 12 months	4.81	.73			
12 months	4.73	.82	-.73	.47	-.10
Number of Ag Teachers in Department					
One	4.72	.79			

Table 2

Perceived Levels of Occupational Commitment and Differences in Associated Demographics of Responding Illinois SBAE Teachers (n = 203), continued...

Two or More	4.89	.73	-1.49	.14	-.22
Professional Life Cycle ^a					
Novice (5 or less years)	4.70	.77			
Mid-Career (6-15 years)	4.64	.76			
Late-Career (16+ years)	4.96	.76	3.35	.04*	.18

Note. The professional commitment scale was based on a 6-point Likert-type scale ranging from 1 = “Strongly Disagree” to 6 = “Strongly Agree”.

^a ANOVA was conducted for the variable “Professional Life Cycle”. The test statistic shown is the F statistic.

* $p < .05$ level, 2-tailed

Work Engagement

According to Schaufeli & Bakker (2003), the overall perceived level of work engagement across respondents was very high ($M = 5.63$, $SD = 1.12$). Two of the three factors that influence work engagement, dedication ($M = 5.79$, $SD = .96$) and vigor ($M = 5.60$, $SD = 1.05$) fell into the high range, while the third factor, absorption ($M = 5.51$, $SD = 1.20$), fell into the very high range.

Within their specific demographic groups, slightly higher levels of work engagement were reported for SBAE teachers identifying as male, married, having children, being fully-state certified, not possessing a CASE certification, having earned a master's degree, receiving less than a 12-month contract, and those employed in a multi-teacher agriculture department. Only one statistically significant difference was discovered between perceived levels of work engagement and the SBAE teachers' professional career stage. Novice teachers reported slightly higher levels of perceived work engagement than mid-career teachers, but significantly lower levels than the late-career teachers ($p = .00$) with a medium effect size ($d = .57$; Cohen, 1988). Further, mid-career teachers also reported significantly lower levels than the late-career teachers ($p = .00$) with a medium effect size ($d = .63$; Cohen, 1988) in this area. All statistics related to work engagement and the associated demographic groups can be found in Table 3 below.

Table 3

Perceived Levels of Work Engagement and Differences in Associated Demographics of Responding Illinois SBAE Teachers (n = 203)

Variable	<i>M</i>	<i>SD</i>	<i>t-test</i>	<i>p</i>	Cohen's <i>d</i>
Sex					
Male	5.66	.70			
Female	5.60	.69	.59	.56	.09
Relationship Status					
Married	5.64	.72			
Not Married	5.60	.65	-.37	.72	-.06
Parental Status					
Children	5.64	.69			
No Children	5.60	.71	.36	.72	.05

Table 3

Perceived Levels of Work Engagement and Differences in Associated Demographics of Responding Illinois SBAE Teachers (n = 203), continued...

Type of Licensure						
Fully-State Certified	5.63	.69				
Alternatively- Certified	5.61	.73	.10	.92	.02	
CASE Certified						
Certified	5.61	.69				
Not Certified	5.63	.70	-.21	.84	-.03	
Highest Education Attained						
Bachelor's Degree	5.57	.68				
Master's Degree	5.73	.72	-1.53	.13	-.22	
Length of Teaching Contract						
Less than 12 months	5.62	.76				
12 months	5.53	.64	-.12	.90	-.02	
Number of Ag Teachers in Department						
One	5.58	.73				
Two or More	5.72	.63	-1.34	.18	-.20	
Professional Life Cycle ^a						
Novice (5 or less years)	5.50	.68				
Mid-Career (6-15 years)	5.47	.65				
Late-Career (16+ years)	5.89	.68	8.44	.00*	.29	

Note. The professional commitment scale was based on a 7-point Likert-type scale ranging from 1 = "Never" to 6 = "Always".

^a ANOVA was conducted for the variable "Professional Life Cycle". The test statistic shown is the F statistic.

* $p < .05$ level, 2-tailed

Work-life Balance

Overall perceived levels of ability to achieve a work-life balance were in the moderate range ($M = 3.63$, $SD = 1.71$). No significant differences were found between any of the demographic groups and their perceived ability to achieve a work-life balance. Slightly higher work-life balance levels were reported for the demographic that identified as female, not married, having children, possessing CASE certification, having earned a master's degree, and those employed in a single-teacher agriculture program.

Interestingly, work-life balance levels were identical for the type of licensure and length of teaching contract demographic. When examining the professional life stage demographic, mid-career teachers reported the highest level in the area of work-life balance, followed by novice teachers, and lastly late-career teachers. All statistics related to work-life balance and the associated demographic groups can be found in Table 4 below.

Table 4

Perceived Levels of Work-Life Balance and Differences in Associated Demographics of Responding Illinois SBAE Teachers (n = 203)

Variable	<i>M</i>	<i>SD</i>	<i>t-test</i>	<i>p</i>	Cohen's <i>d</i>
Sex					
Male	3.57	.38			
Female	3.67	.41	-1.82	.07	-.26
Relationship Status					
Married	3.62	.41			
Not Married	3.66	.38	.52	.60	.08
Parental Status					
Children	3.65	.41			
No Children	3.60	.39	.76	.45	.11
Type of Licensure					
Fully-State Certified	3.63	.42			
Alternatively- Certified	3.63	.33	-.03	.98	-.01
CASE Certified					
Certified	3.67	.43			
Not Certified	3.61	.39	.96	.34	.15
Highest Education Attained					
Bachelor's Degree	3.61	.37			
Master's Degree	3.67	.46	-1.05	.30	-.16
Length of Teaching Contract					
Less than 12 months	3.63	.40			
12 months	3.63	.41	.01	.99	.00
Number of Ag Teachers in Department					
One	3.65	.42			
Two or More	3.60	.37	.82	.42	.12
Professional Life Cycle ^a					
Novice (5 or less years)	3.62	.40			
Mid-Career (6-15 years)	3.72	.39			
Late-Career (16+ years)	3.57	.41	2.37	.10	.15

Note. The professional commitment scale was based on a 6-point Likert-type scale ranging from 1 = "Strongly Disagree" to 6 = "Strongly Agree".

^a ANOVA was conducted for the variable "Professional Life Cycle". The test statistic shown is the F statistic.

**p* < .05 level, 2-tailed

Objective 3

The purpose of objective three was to describe the relationship between occupational commitment, work engagement, and work-life balance for Illinois SBAE teachers. Pearson product-

moment correlation coefficients (r) were calculated to determine the relationships among occupational commitment, work engagement, and work-life balance (see Table 5). A large, positive relationship (Cohen, 1990) existed between work engagement and occupational commitment ($r = .55$), while two small, negative relationships (Cohen, 1990) existed between work-life balance and work engagement ($r = -.16$) and work-life balance and occupational commitment ($r = -.25$).

Table 5

Pearson Correlation Coefficients Between the Career Retention Factors (n = 203)

	1	2	3
1. Occupational Commitment	-	.55*	-.25*
2. Work Engagement		-	-.16*
3. Work-Life Balance			-

* $p < .05$ level, 2-tailed

Conclusions, Implications, and Recommendations

The purpose of our study was to examine the relationships between career retention factors and selected personal and professional characteristics of Illinois SBAE teachers. We collected demographic data and analyzed perceived levels of occupational commitment, work engagement, and work-life balance from our 203 respondents to address our research objectives. While yielding valuable descriptive data, it should be noted that these results are not generalizable beyond the target population, which is a limitation of our study.

Our first objective was to describe the personal and professional demographic characteristics of Illinois SBAE teachers. When examining personal characteristics, 99% of our respondents identified as White, non-Hispanic while 34% reported being 30 years of age or younger, and 15.3% were older than 50 years of age. Our findings are consistent with data provided in the most recent Illinois Ag Ed Report (Illinois Annual Ag Ed Report, 2020). When looking at other specific personal demographic factors, 72.4% of our respondents reported being married and 65.3% reported having children. As family reasons and feelings of guilt for time spent away from family having been previously identified as leading teacher attrition factors (Solomonson et al., 2018), it is important to acknowledge that many of these SBAE teachers may be struggling to balance their work responsibilities with their family obligations (Sorensen et al., 2016). Another noteworthy finding was that 39.4% of our respondents identified as male and 60.1% identified as female. This is consistent with the growing number of female SBAE teachers in the state, with the percentage of female SBAE teachers surpassing males for the first time in the state's history (Illinois Annual Ag Ed Report, 2020).

Similar to our personal characteristics data, the professional demographic data we collected complemented the data provided in the Illinois Ag Ed Report (2020). Of our respondents, 83.7% indicated having been issued a Professional Educators License and 35.5% have earned an advanced degree. Since effective teaching preparation and purposeful professional development opportunities have been cited as key factors in retaining teachers (Haynes, 2014; Ingersoll, 2003; Solomonson et al., 2018), providing resources or outlets for SBAE teachers to receive full-licensure or obtain an advanced degree is suggested. Further, while previous research indicating personal and professional characteristics having only negligible effects on career retention factors (Sorensen & McKim, 2014), as the demographics of Illinois SBAE teachers change, we recommend that current professional development activities and

efforts to increase career retention factors be evaluated to ensure they are meeting the needs of the population.

We used objective two to determine Illinois SBAE teachers' perceived levels of occupational commitment, work engagement, and work-life balance and if differences exist between selected demographic characteristics. Generally, we conclude that Illinois SBAE teachers possess a high level of occupational commitment. Of the eight personal and professional characteristics examined within the occupational commitment construct, significant differences were found in three areas. We conclude that respondents who were fully-state certified have a significantly higher level of occupational commitment when compared to their counterparts who were alternatively certified. The type of certification held had a medium effect size on teachers' level of occupational commitment. Previous research by Solomonson et al. (2021) indicated that several factors related to why SBAE teachers remain in the profession can be directly influenced by preservice teacher education programs. However, a study by Strunk and Robinson (2006) revealed teachers with alternative licensure were not significantly more likely than teachers with full-licensure to leave the teaching profession. Weiner (1972) suggested these personal or internal factors related to lived experiences and previously learned knowledge can also influence future beliefs and behaviors. We recommend that efforts be directed at supporting those teachers who are alternatively certified with targeted professional development aimed at providing them with the tools and resources to increase their self-efficacy and thereby, levels of occupational commitment.

The remaining two significant personal and professional characteristics were the highest level of education attained and where the teacher was in their professional life cycle (novice, mid-career, late-career). Earning a master's degree and identifying as late-career were both found to have slight, but significant, impacts on occupational commitment. We recommend that efforts be made to increase access to graduate coursework and to assist teachers in earning a master's degree. Perhaps earning a master's degree could become a predictor of a SBAE teachers intentions to remain in the profession. Additionally, since novice and mid-career teachers indicated lower levels of occupational commitment, it is recommended that an early career mentoring program be developed. This is congruent with previous research suggesting the value of such programs (Ingersoll, 2003; Krasnoff, 2014).

Schaufeli and Bakker (2006) indicated employees who are engaged feel energetic and connected with their work and are better able to deal with the demands of their jobs. When examining overall levels of work engagement, it can be concluded that Illinois SBAE teachers perceive themselves as being very highly engaged in their work. Significant differences existed between work engagement levels when considering SBAE teachers professional career stage. Specifically, it was concluded that the longer one remains a SBAE teacher the higher their level of work engagement will be. We recommend that efforts be made to support novice and midcareer teachers with professional development opportunities aimed at addressing the three constructs of dedication, vigor, and absorption as they relate to work engagement. Further, additional research should be conducted to more clearly identify specific factors that decrease the levels of work engagement among novice and mid-career SBAE teachers in Illinois.

Perhaps most concerning is the conclusion that Illinois SBAE teachers struggle to achieve balance between their professional and personal lives with respondents only indicating a moderate level of ability to achieve work-life balance. Sorensen and McKim (2014) reported similar findings with Oregon SBAE teachers. Beyond this, studies over the last two decades have consistently suggested teachers struggle to achieve work life balance, suggesting this trend is not new (Foster, 2001; Lawver, 2007; Murray et al., 2011; Traini et al., 2019; Traini et al., 2020). While slightly different levels of work-life balance were observed across the various personal and professional characteristics examined, no significant differences were observed, which suggests that the issue of work life balance is prevalent across the profession in every demographic. We recommend that further research attempts to address specific causes of the perceived inability to achieve a work-life balance as a SBAE teacher.

Objective three focused on describing the relationship between work engagement, occupational commitment, and work-life balance for Illinois SBAE teachers. Based on the positive relationship between the two, we conclude that work engagement is moderately correlated with occupational commitment. Similar conclusions were reached by Crutchfield et al. (2013), Sorenson and McKim (2014), and Sorenson et al. (2016). We recommend that research-based professional development and mentoring for SBAE teachers be implemented to increase awareness of how to maintain an appropriate level of work engagement. Work-life balance showed weak negative correlations to work engagement and occupational commitment. These findings align with those of Sorenson et al. (2016) and Solomonson et al. (2018), who detailed predictive relationships between SBAE teachers' perceptions of a workload which could interfere with work-life balance and the probability that the teachers would leave the teaching profession due to this imbalance. We recommend that targeted professional development be made available to SBAE teachers on maintaining an appropriate work-life balance. Additionally, Illinois teacher educators should incorporate strategies for achieving work-life balance in their pre-service agricultural education curriculum.

We recommend the agricultural education stakeholders in Illinois use our collective findings as they develop their SBAE teacher recruitment and retention plan with the strategic goal to increase occupational commitment, work engagement, and the ability to obtain a healthy work-life balance for their teachers. Per the recommendations we outlined earlier, a focus should be on creating an alternative route to obtain a Professional Educators Licensure, offering resources to obtain an advanced degree, and providing professional development and training on achieving a work-life balance for our practicing SBAE teachers. We further recommend the study be replicated every five years as the demographics of the population change and the culture within the profession continues to evolve.

References

- Blackburn, J. J., Bunch, J. C., & Haynes, J. C. (2017). Assessing the relationship of teacher self efficacy, job satisfaction, and perception of work-life balance of Louisiana agriculture teachers. *Journal of Agricultural Education*, 58(1), 14-35. <https://doi.org/10.5032/jae.2017.01014>
- Blau, G. J., Paul, A., & St. John, N. (1993). On developing a general index of work commitment. *Journal of Vocational Behavior*, 42(3), 298-314. <https://doi.org/210.1006/jvbe.1993.1021>
- Camp, W. G., Broyles, T., & Skelton, N. S. (2002). *A national study of the supply and demand for teachers of agricultural education in 1999-2001*. Virginia Polytechnic Institute and State University.
- Carver-Thomas, D. & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it*. Learning Policy Institute.
- Chaney, C. A. (2007). *Work-Life variables influencing attrition among beginning agriscience teachers of Texas* [Doctoral dissertation, Texas Tech University]. OAKTrust.
- Chapman, D. W. (1983). A model of the influences on teacher retention. *Journal of Teacher Education*, 34(5), 43-49. <https://doi.org/10.1177/002248718303400512>
- Chenevey, J. L., Ewing, J. C., & Whittington, M. S. (2008). Teacher burnout and job satisfaction among agricultural education teachers. *Journal of Agricultural Education*, 49(3), 12-22. <https://doi.org/10.5032/jae.2008.03012>
- Clark, M. S., Kelsey, K. D., & Brown, N. R. (2014). The thornless rose: A phenomenological look at decisions career teachers make to remain in the profession. *Journal of Agricultural Education*, 55(3), 43-56. <https://doi.org/10.5032/jae.2014.03043>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Routledge Academic.

- Cohen, J. (1990). Things I have learned (so far). *American Psychologist*, 45(12), 1304-1312. <https://doi.org/10.1037/0003-066X.45.12.1304>
- Croom, D. B. (2003). Teacher burnout in agricultural education. *Journal of Agricultural Education*, 44(2), 1-13. <https://doi.org/10.5032/jae.2003.02001>
- Crutchfield, N., Ritz, R., & Burris, S. (2013). Why agricultural educators remain in the classroom. *Journal of Agricultural Education*, 54(2), 1-14. <https://doi.org/10.5032/jae.2013.02001>
- Darling-Hammond, L., Chung, R., & Frelow, F. (2002). Variation in teacher preparation: How well do different pathways prepare teachers to teach? *Journal of Teacher Education*, 53(4), 286-302. <https://doi.org/10.1177/0022487102053004002>
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). John Wiley & Sons, Inc.
- Eck, C. J., & Edwards, M. C. (2019). Teacher shortage in school-based, agricultural education (SBAE): A historical review. *Journal of Agricultural Education*, 60(4), 223-239. <https://doi.org/10.5032/jae.2019.04223>
- Flynt, S. W., & Morton, R. C. (2009). The teacher shortage in America: Pressing concerns. *National Forum of Teacher Education Journal* 19(3), 1-5. <https://doi.org/10.1037/0003-066X.45.12.1304>
- Foster, D. D., Lawver, R. G., & Smith, A. R. (2020). *National agricultural education supply and demand study, 2019 executive summary*. <https://aaaeonline.org/Resources/Documents/NSD2019Summary.pdf>
- Foster, B. B. (2001). Choices: A dilemma of women agricultural education teachers. *Journal of Agricultural Education*, 42(3), 1-10. <https://doi.org/10.5032/jae.2001.03001>
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of management review*, 10(1), 76-88. <https://doi.org/10.2307/258214>
- Gutek, B. A., Searle, S., & Klepa, L. (1991). Rational versus gender role explanations for work-family conflict. *Journal of Applied Psychology*, 76(4), 560-568. <https://doi.org/10.1037/0021-9010.1076.1034.1560>
- Harvey, J. H., & Weary, G. (1984). Current issues in attribution theory and research. *Annual review of psychology*, 35(1), 427-459. <https://doi.org/10.1146/annurev.ps.35.020184.002235>
- Heider, F. 1958. *The psychology of interpersonal relations*. Wiley.
- Haynes, M. (2014). *On the path to equity: Improving the effectiveness of beginning teachers*. <http://all4ed.org/reports-factsheets/path-to-equity/>
- Illinois Annual Ag Ed Report (2020). *2020 Illinois Agricultural Education Report*. https://www.ilaged.org/docs/FCAE2020AgEdReport-030821_12324.pdf
- Ingersoll, R. (2000). *Turnover among mathematics and science teachers in the US*. University of Pennsylvania. https://repository.upenn.edu/gse_pubs/96/
- Ingersoll, R. (2003). *Is there really a teacher shortage?* University of Pennsylvania. http://repository.upenn.edu/gse_pubs/133
- Ingersoll, R., Merrill, E., Stuckey, D., & Collins, G. (2018). *Seven trends: The transformation of the teaching force, updated October 2018. CPRE Research Reports (#RR-2018-2)*. University of Pennsylvania. https://repository.upenn.edu/cpre_researchreports/108/
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of management journal*, 33(4), 692-724. <https://doi.org/10.5465/256287>

- Kantrovich, A. J. (2010). *A national study of the supply and demand for teachers of agricultural education from 2007-2009*. American Association for Agricultural Education. <http://www.naae.org/teachag/2010%20AAAE%20Supply%20Demand%20Study.pdf>
- Kelley, H. H. (1967). Attribution theory in social psychology. *Nebraska symposium on motivation, 15*, 192-238. <https://psycnet.apa.org/record/1968-13540-001>
- Kelsey, K. D. (2006). Teacher attrition among women in secondary agricultural education. *Journal of Agricultural Education, 47*(3), 117-129. <https://doi.org/10.5032/jae.2006.03117>
- Kitchel T., Smith, A. R., Henry, A. L., Robinson, J. S., Lawver, R. G., Park, T. D., & Schell, A. (2012). Teacher job satisfaction and burnout viewed through social comparisons. *Journal of Agricultural Education, 53*(1), 31-44. <https://doi.org/10.5032/jae.2012.01031>
- Knobloch, N. A., & Whittington, M. S. (2003). Differences in teacher efficacy related to career commitment of novice agriculture teachers. *Journal of Career and Technical Education, 20*(1), 87-98. <https://doi.org/10.21061/jcte.v20i1.625>
- Krasnoff, B. (2014). *Teacher recruitment, induction, and retention* (Research brief). <http://nwcc.educationnorthwest.org/sites/default/files/research-brief-teacher-recruitment-induction-retention.pdf>
- Lambert, R., O'Donnell, M., Kusherman, J., & McCarthy, C. J. (2006). Teacher stress and classroom structural characteristics in preschool settings. In R. Lambert & C. McCarthy (Eds.), *Understanding teacher stress in an age of accountability*, (pp. 105-120). Information Age Publishing.
- Lawver, R. G. (2007). *Work and family life balance among secondary agricultural educators* (Unpublished master's thesis). University of Missouri-Columbia.
- Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education, 42*(4), 43-53. <https://doi.org/10.5032/jae.2001.04043>.
- Lemons, L. L., Brashears, M. T., Burris, S., Meyers, C., & Price, M. A. (2015). Factors contributing to attrition as reporters by leavers of secondary agriculture programs. *Journal of Agricultural Education, 56*(4), 17-30. <https://doi.org/10.5032/jae.2015.04017>
- Malle, B. F. (2011). Attribution theories: How people make sense of behavior. In D. Chadee (Ed.), *Theories in social psychology* (pp. 72-95). Wiley Blackwell.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52*(1), 397-422. <https://doi.org/10.1146/annurev.psych.52.1.397>
- McKim, A. J., & Velez, J. J. (2015). Exploring the relationship between self-efficacy and career commitment among early career agriculture teachers. *Journal of Agricultural Education, 56*(1), 127-140. <https://doi.org/10.5032/jae.2015.01127>
- Moser, E. M., & McKim, A. J. (2020). Teacher retention: A relational perspective. *Journal of Agricultural Education, 61*(2), 263-275. <https://doi.org/10.5032/jae.2020.02263>
- Murray, K., Flowers, J., Croom, B., & Wilson, B. (2011). The agricultural teacher's struggle for balance between career and family. *Journal of Agricultural Education, 52*(2), 107-117. <https://doi.org/10.5032/jae.2011.02107>
- Myers, B. E., Dyer, J. E., & Washburn, S. G. (2005). Problems facing beginning agriculture teachers. *Journal of Agricultural Education, 46*(3), 47-55. <https://doi.org/10.5032/jae.2005.03047>
- Phillips, O. (2015, March 30). *Revolving door of teachers costs schools billions every year*. [Radio broadcast]. NPR. <https://www.npr.org/sections/ed/2015/03/30/395322012/the-hidden-costs-of-teacher-turnover>

- Roberts, T. G., Harder, A., & Brashears, M. T. (Eds). (2016). *American Association for Agricultural Education national research agenda: 2016-2020*. Gainesville, FL: Department of Agricultural Education and Communication.
- Rice, J. E., LaVergne, D. D., & Gartin, S. A. (2011). Agricultural teacher perceptions of school components as motivational factors to continue teaching and demotivational factors to discontinue teaching. *Journal of Career and Technical Education, 26*(2), 105-115. <https://doi.org/10.21061/jcte.v26i2.529>
- Ronfeldt, M., Loeb, S., & Wyckoff, J. (2012). How teacher turnover harms student achievement. *American Educational Research Journal, 50*(1), 4-36. <https://doi.org/10.3102/0002831212463813>
- Schaufeli, W. B., Salanova, M., Gonazalez-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies, 3*, 71-92. <https://doi.org/10.1023/A:1015630930326>
- Schaufeli, W. B., & Bakker, A. B. (2003). *Utrecht work engagement scale: Preliminary manual*. https://www.wilmarschaufeli.nl/publications/Schaufeli/Test%20Manuals/Test_manual_UWES_English.pdf.
- Schaufeli, W. B., & Bakker, A. B. (2004) Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*(3), 293-315. <https://doi.org/10.1002/job.248>
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and psychological measurement, 66*(4), 701-716.
- Singh, K., & Billingsley, B. S. (1996). Intent to stay in teaching: Teachers of students with emotional disorders versus other special educators. *Remedial and Special Education, 17*(1), 37-47.
- Solomonson, J. K., Korte, D. S., Thieman, E. B., Retallick, M. S., & Keating, K. H. (2018). Factors contributing to Illinois school-based agriculture teachers' final decision to leave the classroom. *Journal of Agricultural Education, 59*(2), 321-342. <https://doi.org/10.5032/jae.2018.02321>
- Solomonson, J. K., & Retallick, M. S. (2018). Over the edge: Factors nudging mid-career, school-based agriculture teachers out of the profession. *Journal of Agricultural Education, 59*(4), 1-19. <https://doi.org/10.5032/jae.2018.04001>.
- Solomonson, J. K., Still, S. M., & Maxwell, L. D. (2021). Factors influencing the decision of Illinois school-based agricultural education teachers to remain in the profession. *Journal of Agricultural Education, 62*(3), 121-137. <https://doi.org/10.5032/jae.2021.03121>
- Sorensen, T. J., & McKim, A J. (2014). Perceived work-life balance ability, job satisfaction, and professional commitment among agriculture teachers. *Journal of Agricultural Education, 55*(4), 116-132. <https://doi.org/10.5032/jae.2014.04116>
- Sorensen, T. J., McKim, A. J., & Velez, J. J. (2016). Why agriculture teachers leave: A national examination of turnover intentions and work-family conflict. *Journal of Agricultural Education, 57*(4), 186-201. <https://doi.org/10.5032/jae.2016.04186>
- Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Learning Policy Institute.
- Stripling, C. T., & Ricketts, J. C. (2016). *Research priority 3: Sufficient scientific and professional workforce that addresses the challenges of the 21st century*. American Association for Agricultural Education national research agenda: 2016-2020. Gainesville, FL: Department of Agricultural Education and Communication.

- Strunk, K. O., & Robinson, J. P. (2006). Oh, won't you stay: A multilevel analysis of the difficulties in retaining qualified teachers. *Peabody Journal of Education, 81*(4), 65-94. https://doi.org/10.1207/s15327930pje8104_4
- Tippens, A., Ricketts, J. C., Morgan, A. C., Navarro, M., & Flanders, F. B. (2013). Factors related to teachers' intention to leave the classroom early. *Journal of Agricultural Education, 54*(4), 58-72. <https://doi.org/10.5032/jae.2013.04058>
- Traini, H. W., Claflin, K., Stewart, J., & Velez, J. J. (2019). Success, balance, but never both: Exploring reified forms of success in school-based agricultural education. *Journal of Agricultural Education, 60*(4), 240-254. <https://doi.org/10.5032/jae.2019.04240>
- Traini, H. Q., Yopp, A. M., & Roberts, R. (2020). The success trap: A case study of early career agricultural education teachers' conceptualizations of work-life balance. *Journal of Agricultural Education, 61*(4), 175-188. <http://doi.org/10.5032/jae.2020.04175>
- Weiner, B. (1972). Attribution theory, achievement motivation, and the educational process. *Review of Educational Research, 42*(2), 203-215. <https://www.jstor.org/stable/1170017>
- Weiner, B. (1974). *Achievement motivation and attribution theory*. General Learning Press.
- Weiner, B. (2010). The development of an attribution-based theory of motivation: A history of ideas. *Educational psychologist, 45*(1), 28-36. <https://doi.org/10.1080/00461520903433596>
- Wilensky, H. L. (1960). Work, careers and social integration. *International Social Science Journal, 12*(4), 543-560. <https://psycnet.apa.org/record/1962-00867-001>
- Znidarsic, J., & Bernik, M. (2021). Impact of work-family balance results on employee work engagement within the organization: The case of Slovenia. *PloS one, 16*(1), e0245078. <https://doi.org/10.1371/journal.pone.0245078>