

AN ABSTRACT OF THE DISSERTATION OF

Tyson J. Sorensen for the degree of Doctor of Philosophy in Science Education presented on May 7, 2015.

Title: Agriculture Teachers' Work and Family Domain Characteristics, Work-Family Conflict, and Turnover Intentions: A National Study

Abstract approved:

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The purpose of this study was to describe and explore the relationships between work and family domain characteristics, time-based work-family conflict (WFC), and turnover intention of agriculture teachers. This study sought to identify factors influencing agriculture teachers' turnover intentions. An additional focus of this study was to explore differences between male and female agriculture teachers regarding the variables of interest. Data were collected from a simple random sample of secondary agriculture teachers across the U.S. who self-identified as being active participants in a family role during the 2014-2015 academic year.

The survey instrument consisted of demographic questions and existing validated constructs and measures. Information about agriculture teachers' work and family domain characteristics, WFC, turnover intentions, and reasons for the likelihood of

leaving teaching was gathered. Data were analyzed using descriptive and correlational statistics.

The majority of respondents reported being married and having children. Regarding work domain characteristics, respondents reported investing an average of 55 hours per regular work week (Monday through Friday) and 18 weekend hours per month in their agriculture teaching jobs. They also indicated a lack of congruence in work hours, as they preferred to work less hours than they currently were investing in their jobs. Agriculture teachers indicated high levels of family salience and moderate levels of work salience. Respondents also reported moderate levels of work interference with family (WIF), moderately low levels of family interference with work (FIW), and moderately low levels of turnover intentions. No differences in salience, conflict, or turnover intentions by sex were found. Agriculture teachers reported the highest likelihood of leaving their teaching position; 1) for a more desirable job opportunity, 2) for an opportunity to move up in their career, 3) because of family reasons, 4) due to a lack of compensation for the amount of work done, and 5) because of excessive workload. Females were more likely than males to leave teaching for “parenthood responsibilities/rearing children” and “because it is incompatible with raising a family.”

Perceived family-supportive work culture, number of agriculture teachers per school, work salience, and actual work hours per work week were significant factors in predicting WIF among agriculture teachers. Family salience was the only significant factor in predicting FIW among agriculture teachers. Additionally, age of child, work hours per work week, perceived family-supportive work culture, and WIF were

significant predictors of turnover intentions of agriculture teachers. It was concluded that the conflict from trying to balance work and family role responsibilities does influence agriculture teachers' turnover intentions, and this conflict originates primarily in the work domain, not the family domain. Implications and recommendations for the agricultural education profession and for research are discussed.

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May 7, 2015

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Agriculture Teachers' Work and Family Domain Characteristics, Work-Family Conflict,
and Turnover Intentions: A National Study

by
Tyson J. Sorensen

A DISSERTATION

submitted to

Oregon State University

In partial fulfillment of
the requirements for the
degree of

Doctor of Philosophy

Presented May 7, 2015
Commencement June 2015

Doctor of Philosophy dissertation of Tyson J. Sorensen presented on May 7, 2015

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I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

Tyson J. Sorensen, Author

ACKNOWLEDGEMENTS

I wish to express my gratitude and appreciation to many individuals, whom, without them, this opportunity to pursue a Ph.D. would not have been possible.

I would first like to thank Dr. Greg Thompson for taking a risk on me, giving me the opportunity to teach in the agricultural education department, and giving me the opportunity to take this big step in my life. I was comforted and encouraged by his positive attitude, enthusiasm, and kindness, and always knew he was looking out for my best interest.

I would also like to extend a sincere thanks to my major professor, Dr. Jonathan Velez, who worked many hours with me, mentoring, coaching, and teaching me. His positive attitude, encouragement, and unwavering confidence in me was an important piece to my success. I would also like to thank my committee members, Dr. Misty Lambert, Dr. Eric Weber, Dr. Jana Bouwma-Gearhart, Dr. Andrew Ross, and Dr. Bill Braunworth for the time, effort, and patience they invested in me. I appreciate their passion and desire to help me become a better researcher, teacher, and scholar.

I also owe a debt of gratitude to my teachers in the Science Education Ph.D. program. They were always pushing me further to think and communicate in ways I wouldn't have otherwise. I would also like to thank my colleagues in the Agriculture Education and Agricultural Sciences department. They have provided wonderful friendship and support along the way. I could not have asked for a better group of people to work with each day.

I would especially like to thank my dear wife, Shelby, for her enduring patience, encouragement, support, and love for me as I spent many hours away from home doing

school work. Additionally, I would like to thank my children, Syvanah, Taylor, and Ty for their patience with me, as I was away so much, and wasn't able to be with them as much as they would have liked. They truly encouraged me to be efficient and get my work done so I could have time to spend with them.

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Agriculture Teachers' Work and Family Domain Characteristics, Work-Family Conflict, and Turnover Intentions: A National Study

CHAPTER 1: INTRODUCTION

Over the past few decades, considerable attention has been devoted to the failure of American classrooms to be adequately staffed with qualified teachers (Ingersoll, 2001). Due to the national increase of student enrollment and the increase of teachers leaving the teaching profession, caused by retirements and career changes, the predicament of teacher shortage is one that affects the entire country (Gonzales, Brown, & Slate, 2008). The country's teacher shortage problem extends across multiple disciplines, including agricultural education, in which the problem has existed for more than 40 years (Kantrovich, 2010).

Better recruitment and better retention have been identified as two potential solutions for solving the teacher shortage problem in agriculture education. Ingersoll and Smith (2003) argued that teacher shortage is primarily a result of high teacher attrition and not the lack of recruitment. They argue recruiting more teachers will not solve the teacher shortage crisis, because large numbers of teachers continue to leave the profession prematurely (turnover), resulting in a revolving door (Ingersoll, 2001; 2003; Ingersoll & Smith, 2003). To illustrate that point, Ingersoll and Smith (2003) noted that the current state of education is like a bucket of water with holes in the bottom, where teachers pour out of the profession as quickly as they enter. Therefore, research efforts concerning teacher attrition and retention should be the central focus in addressing the teacher shortage in agricultural education. Gonzalez et al. (2008) stated "Much attention

has been brought to the issue of our nation's teacher shortage, but what must be addressed and examined is the retention issue" (p. 2).

A teacher's decision to exit the teaching profession is influenced by a combination of factors. Numerous studies have shown a positive relationship between teacher turnover and workplace factors, such as low teacher salary. Additionally, teacher demographic characteristics such as years of teaching experience and sex have been associated with teacher turnover.

In a study analyzing data from the Schools and Staffing Survey (SASS) and its supplement, the Teacher Follow-up Survey (TFS) conducted by the National Center for Educational Statistics (NCES), Ingersoll (2001) noted "personal reasons, such as departures for pregnancy, child rearing, health problems, and family moves, are more often reported as reasons for turnover than either retirement or staffing actions" (p. 522). According to Ingersoll (2001), personal reasons account for nearly 45% of the reasons leavers exit teaching. Although not specific to agricultural educators, these findings suggest many factors beyond the workplace can influence a teacher's decision to leave the profession. Additionally, these findings support the idea of conflict between the work and family domains. Yet, there is little research in agricultural education exploring the conflict between work and family domains, and how this conflict might influence an agriculture teacher's decision to leave the profession early.

Teaching agriculture is a demanding profession, one that typically involves more than a 40-hour work week (Torres, Ulmer, Aschenbrener, 2008). As agriculture teachers spend extra hours at work, it limits the time they have available for other life roles,

including family roles. This time limitation produces psychological tension, called work-family conflict. Work-family conflict has been associated with negative workplace outcomes, including job dissatisfaction, increased job stress, and high intentions to quit (Allen, Herst, Bruck, & Sutton, 2000; Bruck, Allen, & Spector, 2002; Kossek & Ozeki, 1998). As agriculture teachers spend more and more time away from family, burnout and teacher turnover may occur (Osborne, 1992). As a result, the idea of balance is a salient issue for the agricultural education profession. Therefore, research examining time-based work-family conflict, can produce important information regarding agriculture teachers' turnover intentions. This information can be important in helping solve the agriculture teacher shortage.

Statement of the Problem

There is a shortage of agriculture teachers in the United States (Foster, Lawver, & Smith, 2014; Kantrovich, 2010). By exploring the factors related to teacher turnover, researchers can have a positive impact on addressing the teacher shortage crisis in this country (Ingersoll & Smith, 2003). While a number of studies have examined work characteristics related to teacher turnover, a lack of research exists explaining how non-work factors, such as family variables, influence agriculture teachers' turnover intentions. Furthermore, little is known about how participation in work and family domains influences agriculture teachers' work-family conflict, and how this conflict influences their turnover intentions.

Although research surrounding work-family conflict has been salient in vocational psychology research in other occupations, little research has been conducted

with teachers (Cinamon & Rich, 2005). A more complete understanding of the influence of work and family characteristics and work-family conflict on teacher turnover intentions is needed to develop and implement effective strategies and programs for greater teacher retention. This information could help policy makers and agricultural education professionals to identify teachers most at risk for quitting their jobs and develop initiatives that ameliorate the conditions that influence agriculture teachers' decisions to exit the profession early. Finally, the proportion of females entering the agriculture teacher profession has steadily increased over the past few decades, and societal attitudes about work and family have shifted. As these changes occur, the need for understanding work-family conflict among both male and female agriculture teachers has become more salient.

Theoretical Framework

To address this problem, I explored the literature and theories surrounding work and family roles, work-family conflict, and teacher turnover intentions. The theory foundational to this study is the role conflict theory (Greenhaus & Beutell, 1985). Most of the literature surrounding the work-family interface is described as conflict or negative spillover because of the negative psychological effects of trying to balance work and non-work roles. Greenhaus and Beutell (1985) called this work-family conflict (WFC from here on), and defined it as “conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” (Greenhaus & Beutell, 1985, p. 77). They explained participation in one domain (e.g. work) is made more difficult by virtue of participation in another domain (e.g. family).

The role conflict theory is based on the scarcity hypothesis, which assumes available time and energy resources are limited (Marks, 1977). Therefore, participation in multiple roles is likely to result in a depletion of these scarce resources. Resources expended in one role deplete those resources available for other roles, which leads to role conflict and diminished role quality in the role that received fewer resources (Gutek, Searle, & Klepa, 1991). According to this hypotheses, the more roles in which a person participates, the more conflict a person experiences.

Research has indicated WFC has been associated with negative workplace outcomes that include low occupational well-being, poor work performance, low organizational commitment, job dissatisfaction, increased job stress, burnout, high intentions to quit, and actual turnover (Allen et al., 2000; Barling, MacEwen, Kelloway, & Higginbottom, 1994; Bruck et al., 2002; Burke, 1988; Carlson, Kacmar, & Williams, 2000; Grandey & Cropanzano, 1999; Hepburn & Barling, 1996; Kossek & Ozeki, 1998; MacEwen & Barling, 1994; Major, Klein, & Ehrhart, 2002; Netemeyer, Boles, & McMurrian, 1996). As the focus of this study was to explain the influence of work and family characteristics on WFC and agriculture teachers' turnover intentions, the role conflict theory provided a valuable framework for this study.

Purpose of the Study

The purpose of this study was to 1) describe work and family characteristics of agriculture teachers, 2) describe time-based WFC of agriculture teachers, 3) explore the relationships between work and family characteristics and WFC, and 3) identify factors that influence agriculture teachers' turnover intentions. An additional focus of this study

was to explore differences between male and female agriculture teachers regarding work and family characteristics, WFC, and turnover intentions.

The following research questions guided this study:

1. What are the demographic characteristics of agriculture teachers (personal, family, and work), and how do they differ by sex?
2. What are the perceptions and attitudes of agriculture teachers toward their own work and family domains (family salience, work salience, and perceived family-supportive work culture), and how do they differ by sex?
3. To what degree do agriculture teachers experience WFC, and how does it differ by sex?
4. What are agriculture teachers' turnover intentions, and how do they differ by sex?
5. What is the relationship between work and family domain characteristics and WFC?
6. What is the relationship between work and family domain characteristics and agriculture teachers' turnover intentions?
7. What is the relationship between WFC factors and agriculture teachers' turnover intentions?

Assumptions

For purposes of this study, the following assumptions were made:

1. Work and family characteristics, WFC, and agriculture teachers' turnover intentions can be measured by an instrument adapted for the study.

2. Agriculture teachers in this study had the capability to complete the online questionnaire, knew the answers asked of them, and answered items honestly and thoughtfully.
3. Since the instrument measured constructs of the participants' perceptions, measurements using a six-point scale with no middle point adequately measured agriculture teachers' perceptions.
4. The random sample of agriculture teachers were representative of the nation's population of agriculture teachers.

Limitations

The following limitations existed for this study:

1. Because this study focused on agriculture teachers, it may not be generalizable to teachers of other subjects or grade levels.
2. Because data were collected using an online questionnaire and requiring self-reported data, a threat to validity may exist.
3. Online questionnaires limit the type of data that can be collected and therefore may have excluded the opportunity for deeper understanding of participants' perceptions and feelings.
4. My opinions and experiences as a researcher might have resulted in bias.

Although I tried to remain as objective as possible, personal biases may have influenced the research decisions regarding the topic, development of the instrument and variables selected, data collection, data analysis, and conclusions and implications. I acknowledge that although "family" and "work" were defined

very broadly in this study to encompass a variety of views and circumstances, it is possible that my view of family, work, committed relationships, and gender biased this research.

5. The questionnaire was reviewed for content validity, but there is a chance that some questions did not accurately measure the opinions of the participants.
6. The sample frame was supplied to me by the National FFA Organization and consisted only of teachers identified as agriculture teachers. There is a possibility that other teachers in the United States matching the parameters of the population were not included in the population, and therefore would not have had a chance to be included in the random sample.
7. The survey instrument defined family as, “any and all committed relationships that might influence how time is invested in non-work domains. Examples may include but are not limited to spouse, live-in partner, parent, caregiver, or committed relationship.” It is likely that participants who were not married or did not have children, did not consider themselves to be active participants in a family role, and therefore did not meet the population parameters and were removed.
8. The population of respondents consisted of those currently teaching secondary agriculture. As such, findings and inferences related to teacher turnover can only be interpreted as turnover intentions and not actual turnover. To examine actual teacher turnover, a population of teachers who have already left the profession should be obtained.

Delimitations

The following delimitations existed for this study:

1. There is some literature suggesting multiple life role participation can have positive effects as one role enriches the quality of the other role. This type of work-family interface has been referred to as work-family enrichment, positive spillover, or role enhancement (Barnett & Hyde, 2001; Baruch & Barnett, 1986; Grzywacz & Marks, 2000). However, for purposes of this study, I examined the work-family interface in terms of conflict or negative spillover, not enrichment or positive spillover.
2. The role conflict theory describes work-family conflict consisting of time-based, strain-based, or behavior-based dimensions (Greenhaus & Beutell, 1985). For purposes of this study, I focused exclusively on the time-based conflict of agriculture teachers.
3. Although the role conflict theory generally encompasses any life roles, such as leisure, work and family (Wilensky, 1960), the focus of this study was to examine only work and family roles.
4. Although there is overlap between agriculture teachers' career intentions and theories pertaining to motivation, this study is not intended to explain attrition from a motivational theoretical perspective. Rather, the purpose is to explain potential agriculture teacher attrition from the perspective that teacher turnover may be a consequence of time-based WFC.

Definition of Terms

Agriculture teacher

Any middle school or high school instructor of agriculture. This term may also be used interchangeably with agricultural educator or agricultural instructor.

Domain

A temporally or spatially designated location in which an individual functions or carries out life roles (e.g. work, home). In this study, the work and family domains were explored.

Family

For purposes of this study, family is defined as any and all committed relationships that might influence how time is invested in non-work domains. Examples may include, but are not limited to, spouse, live-in partner, parent, caregiver, or committed relationship.

Family interference with work (FIW)

When family role activities or experiences interfere with work role activities or experiences.

Role

The part or responsibility that someone has in a family, work, society, or other group. In this study, the family and work roles are explored. Roles are often carried out within domains (a temporally or spatially designated location in which an individual functions or carries out life roles).

Role salience

The knowledge, participation, commitment, and feeling of importance that one has for any particular life role.

Teacher turnover

Exiting the teaching profession before reaching the age of retirement. Teacher attrition is comprised of two parts: 1) “movers” are teachers who leave one school or district for another; and 2) “leavers,” are teachers who exit the profession temporarily or permanently (Ingersoll, 2001). While movers impact schools and school systems, a larger concern for education is the leavers. This term is used synonymously with teacher attrition.

Turnover intentions

The intent of agriculture teachers to exit the teaching profession before retirement.

Work interference with family (WIF)

When work role activities or experiences interfere with family role activities or experiences.

Work-family conflict (WFC)

This study utilizes the definition of work-family conflict by Greenhaus and Beutell (1985): “conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. Participation in the work (family) role is made more difficult by virtue of participation in the family (work) role” (p. 76). Three major forms of work-family conflict include time-based

conflict, strain-based conflict, and behavior-based conflict. For this study, I will only be examining time-based WFC.

Work-family interface

The interaction between work and family roles. It is the experience whereby participation in one role (i.e. work) is influenced by demands and resources of the other role (i.e. family). This interface may have positive (i.e. enrichment) or negative (i.e. conflict) effects on an individual.

CHAPTER 2: REVIEW OF LITERATURE

Introduction

Research on the topic of WFC has expanded immensely over the past few decades due to societal changes in family structures and in the demographic composition of the workforce (Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005; Halpern, 2005; Parasurman & Greenhaus, 2002). These changes have forced employees to balance demands from both the family and work domains. Despite the large body of literature, little empirical research exists regarding WFC of teachers, particularly agriculture teachers, and its influence on their decision to remain or exit the teaching profession early. Meanwhile, the agricultural education profession continues to be faced with a shortage of qualified agriculture teachers to fill vacancies throughout the nation. This research seeks to describe work and family domain characteristics and WFC of secondary agriculture teachers and explain their influence on teachers' turnover intentions.

Demographic trends

The importance of research on work-family issues among working Americans emerged with changes in demographic patterns across the United States and societal attitudes about work and family. According to Barnett and Hyde (2001), "One of the most dramatic markers of the late 20th and early 21st centuries is the astonishingly fast pace of change in the work and family roles of women and men in the United States" (p. 781). As earning power among men diminished in the 1970's, many married women entered the labor force to help support their families. Since then, traditional models that depended on the man focusing exclusively on breadwinning, and the woman

concentrating solely on the home, no longer apply to the majority of American families (Bond, Galinsky, & Swanberg, 1998).

Over the past four decades, the percentage of dual-earner families and number of married women with young children entering the workforce has risen (Galinsky, Aumann, & Bond, 2011). From 1975 to 2007, the percentage of mothers participating in the labor force rose from 47 percent to 71 percent (Galinsky et al., 2011). Furthermore, the percentage of dual-earner couples rose from 66 percent in 1977 to 80 percent in 2008 (Galinsky et al., 2011). From 1970-1997 the percentage of US families with the sole breadwinner being male dropped from 51 percent to 26 percent (Jacobs & Gerson, 1998). The trends over the past few decades have also shown that women in dual-earner couples are progressively contributing more family income (Galinsky et al., 2011). The increased participation of women in the workforce and the growing number of dual-earner and single-parent households has reduced the traditional family household (married, single-earner male with non-employed wife and children) to a minority group (Bond, Thompson, Galinsky, & Prottas, 2003).

In addition to these changes, American workers are taking on an ever increasing role in the caretaking responsibilities of elderly parents or a child or adult with a chronic illness or disability (Belden, Russonello, & Stewart, 2001). Today's working generation has been labeled the "sandwich generation" because they are sandwiched between the demands of providing care for both their children and their aging parents (Neal & Hammer, 2008; Pierret, 2006).

Due to the competing demands between work and family roles, responsibilities at home often interfere with demands at work, and vice versa, resulting in psychological strain, called WFC (Greenhaus & Beutell, 1985). Both men and women experience WFC. Galinsky et al. (2011) reported WFC of men rose from 34 percent in 1977 to 49 percent three decades later in 2008 and WFC of women increased from 34 percent to 43 percent during the same time period (Galinsky et al., 2011). They also reported that 70 percent of employees do not have a healthy balance between their work and personal lives, and the strain associated with the struggle to balance has worsened over the past few decades.

With the changes in workforce and family structure over recent decades, few occupations have a system free of WFC. Despite the popular idea that teaching has historically been considered a profession characterized by a schedule and workload enabling teachers to balance work and family roles, research has shown otherwise. In a recent study of female teachers, Cinamon and Rich (2005) found female teachers experience WFC at the same level and frequency as females in other high stress occupations such as lawyers and computer professionals.

In addition to society's demographic changes over the past few decades, agricultural education has undergone changes of its own. When the Smith-Hughes Vocational Education act of 1917 was passed, authorizing Congress to fund vocational education in public schools, secondary agricultural education, both students and teachers, consisted primarily of males. With the Civil Rights movement and the passing of Title IX in 1972, females were finally given equal, non-segregated access to education

programs, including vocational programs. In 1969, females were allowed full membership in the National FFA Organization. Consequently, female student enrollment in vocational courses increased, but this increase did not immediately translate into more women pursuing careers in agricultural education. In fact, very few females in the 1970's and 1980's entered the agriculture teaching profession (Foster, 2001). In 1987, females comprised only 5 percent of agriculture teachers (Knight, 1987). However, by 2001 it had risen to 22 percent, and by 2007, females represented roughly 27 percent of agricultural educators (Camp, Broyles, & Skelton, 2002; Kantrovich, 2007). Although male agriculture teachers outnumber female teachers by over a 2:1 ratio (Kantrovich, 2010), currently in at least one state, female agriculture teachers are the majority (M. Lambert, personal communication, December 1, 2014).

Additionally, females constitute the majority of students graduating from agricultural education preservice programs. According to Foster et al. (2014), there were 717 license-eligible, program completers in 2014, and of those graduates, 440 (61.4%) were female, 251 (35%) were male, and 26 (3.6%) did not report. There is evidence to suggest this trend has occurred for over a decade (Camp et al., 2002).

Despite the increase in female agriculture teachers, one of the greatest challenges facing agricultural education is the shortage of qualified agriculture teachers (National FFA Organization, 2014). Given the demographic changes in the workforce and agricultural education, and the widespread nature of the struggle to balance work and family roles, research focused on the work-family interface and its influence on agriculture teachers' longevity in the profession is important. Research in understanding

the conflict that arises out of the struggle to balance multiple roles, could make important contributions aimed at benefiting individual teachers as well as the teaching profession.

The Work-Family Interface

Research exploring the relationship between work and family roles has been an important topic in vocational psychology research in a variety of occupations. However, teaching has received little attention in the literature (Cinamon & Rich, 2005). Since the industrialization period, the crossing point or interface between work and family domains has become a major problem for employees, families, and society (Westman & Piotrkowski, 1999). Before this time, a large amount of labor was done at home by families for their own consumption. However, as the economy became more industrialized, workplaces moved outside of the home and family.

Eventually, the terms ‘work’ and ‘employment’ became synonymous, with work being referred to as taking place away from home, thus, work and family becoming two separate domains operating independently of one another (Clark, 2000; Wilensky, 1960). This idea of two independent domains led to the theory of segmentation, which posits there is no relationship between work and family and that they are considered physically, temporally, and psychologically separate domains (Dubin, 1956; Dubin & Champoux, 1977).

However, as workforce demographics changed and traditional gender roles were challenged, the boundaries between work and family became less defined (Gignac, Kelloway, & Gottlieb, 1996). One reason for this is because ‘work’ has become more difficult to define. With advances in technology, more and more people are able to work

from home. Furthermore, many employees, including teachers, bring tasks from their job home with them to be completed while occupying the family role. With the lack of empirical evidence to support the theory of segmentation, researchers have conceptualized work and family domains as interrelated instead of independent (Wilensky, 1960).

This changed perspective led to the development of numerous theories and hypotheses to help explain the work-family interface. The theory foundational to this study is the role conflict theory (Greenhaus & Beutell, 1985).

Theoretical Framework

Role Conflict Theory

The work-family interface has predominantly been studied from the perspective of role conflict (also known as role strain or role stress) theory (Eby et al., 2005; Greenhaus & Beutell, 1985; Kahn et al., 1964). The role conflict theory posits psychological tension is created by the simultaneous occurrence of two or more role pressures, so that participation in one role makes it difficult to participate in the other. This theory suggests that when people engage in roles that are incompatible, conflict occurs between roles (Greenhaus & Beutell, 1985).

Role conflict theory is based on the scarcity of resources perspective which assumes available time and energy resources are limited (Marks, 1977). Therefore, participation in multiple life roles (work and family) results in these scarce resources being depleted. The addition of demands in one or more roles, increases the vulnerability to role strain because of the limited amount of resources (time and energy) shared by

competing roles. According to this view, role demands of work and family should be viewed as additive, with participation in more than one role causing conflict and strain due to overload (Greenhaus & Parasuraman, 1986). Consequently, the role conflict theory assumes participation in multiple life roles is challenging and inexorably creates conflict between competing roles (e.g. work and family).

The role conflict theory is also based on the rational view perspective, which posits the amount of work-family conflict a person experiences, rises proportionally with the number of hours he or she spends in either the work or family domain (Duxbury, Higgins, & Lee, 1994; Gutek et al., 1991). According to this view, the more time an individual spends participating in work-related activities, the more they should experience their work interfering with family obligations, thus creating conflict. On the other hand, the more time an individual spends on family related activities, the more they should experience family responsibilities interfering with work, thus creating conflict. The rational view perspective also suggests role overload (the perception of having too many things to do in a given role and not enough time to do them) is positively associated with the amount of time spent participating in work and family roles (Duxbury et al., 1994). Overload in one role may lead to an increased time commitment in that role, thus decreasing the resources (time and energy) necessary for full participation in other roles (Frone, Yardley, & Markel, 1997; Wharton & Blair-Loy, 2006).

Although the role conflict theory reaches extensively across multiple life roles and domains, work and family domains have received most of the attention in research. Work and family are the principal components of people's lives. Therefore, a great deal

of time and energy is often spent by individuals trying to manage the responsibilities of multiple roles. Research examining how individuals navigate responsibilities between work and family has yielded the construct known as work-family conflict (WFC). The WFC construct is a central component of the role conflict theory.

Work-Family Conflict

The model of role conflict, specifically work and family conflict, was developed by Greenhaus and Beutell (1985) from an extensive examination of literature consisting of over 25 qualitative and quantitative studies with samples consisting of a variety of vocations and with varying sample sizes. Since then, numerous studies have utilized and verified their model as a framework for explaining role conflict. One of the more notable studies include Frone, Russell, and Cooper's (1992) study of antecedents and outcomes of work-family conflict in an effort to test the newly develop theoretical model. Frone et al. (1992) utilized structural equation modeling ($N = 631$ employees) and determined that the results were strongly supportive of the model. Many other studies have supported the work-family conflict model (Greenhaus & Beutell, 1985) with their studies ranging from sample sizes of $n = 40$ to $n = 1989$ and with a variety of vocations and professions as well as family situations being represented in the studies (Adams, King, & King, 1996; Aryee, Fields, & Luk, 1999; Byron, 2005; Carlson et al., 2000; Cinamon & Rich, 2002; Duxbury et al., 1994; Ford, Heinen, & Langkamer, 2007; Frone et al., 1997; Gutek et al., 1991; MacEwen & Barling, 1994; Netemeyer et al., 1996).

The WFC construct emerged in the 1980's to describe the role pressures associated with simultaneously trying to balance work and family roles (Greenhaus &

Beutell, 1985). WFC occurs because “role pressures from the work and family domains are mutually incompatible in some respect. That is, participation in the work (or family) role is made more difficult by virtue of participation in the family (or work) role” (Greenhaus & Beutell, 1985, p. 77).

Research has identified WFC as bi-directional, that is, conflict can take the form of work interference with family (WIF) or family interference with work (FIW) (Frone et al., 1992; Gutek et al., 1991). Additionally, WFC is a multidimensional construct consisting of conflict that can be time-based, strain-based, or behavior-based. Research has also examined WFC as both an independent and dependent variable. Various factors, including role salience and sociodemographic characteristics have been identified as antecedents of WFC. Similarly, WFC has been associated with a variety of negative outcomes in both the work and family domains. In the following sections, I will discuss 1) the bi-directionality and multidimensionality of the WFC construct, 2) the antecedents of WFC in general and in agricultural education, and 3) the consequences of WFC.

Bi-directionality and Multidimensionality of WFC

Some researchers proposed WFC might originate in either work or family domains to influence the other domain (Gutek et al., 1991; Kelloway, Gottlieb, & Barham, 1999; Netemeyer et al., 1996). They proposed WFC can take the form of work interference with family (when work demands interfere with fulfilling family obligations) or family interference with work (when family demands interfere with fulfilling work obligation) (Gutek et al., 1991; Kossek & Ozeki, 1998; Netemeyer et al., 1996). Researchers have tested the bi-directionality of WFC and confirmed that work

interference with family (WIF) and family interference with work (FIW) are indeed two separate constructs (Adams et al., 1996; Netemeyer et al., 1996). Therefore, WFC has changed from being viewed as a global construct to being viewed as two related, but distinct forms of role conflict.

Despite the existence of two distinct constructs, research focusing on work interference with family (WIF) has been much more prevalent than family interference with work (FIW) (Boles, Howard, & Donofrio, 2001; Crouter, 1984; Burke & Greenglass, 1999; Eagle, Miles, & Icenogle, 1997; Greenhaus & Beutell, 1985; Netemeyer et al., 1996; Voydanoff, 2005; Wiley, 1987). In one study exploring the WFC of female teachers, Cinamon and Rich (2005) found teachers reported higher WIF than FIW. Some studies show the influence of family on work is sometimes evaluated as a positive influence rather than negative (Grzywacs & Marks, 2000; Kirchmeyer, 1993). These researchers have argued the necessity to evaluate family variables when examining the workplace because of the linkage between work and family domains.

According to Greenhaus and Beutell (1985), any role characteristic that affects a person's time involvement, strain, or behavior within a specific role can produce conflict between that role and another role. Therefore, WFC can be described as a multi-dimensional construct that is distinguished by three forms: time-based conflict, strain-based conflict, or behavior-based conflict.

Time-based conflict occurs when multiple roles compete for a fixed amount of time. For example, an agriculture teacher often must choose between staying late at school to coach Career Development Event teams or return home and take care of family

responsibilities. Because of the limited resource of time, conflict occurs. This perhaps the most common type of conflict affecting agriculture teachers, because of the reported long hours in which agriculture teachers spend at work (Goode & Stewart, 1981; Torres, Lawver, & Lambert, 2009; Torres et al., 2008).

Strain-based conflict occurs when strain, such as stress, pressure, and overload experienced in one role spills over and interferes with another role. For example, the stress associated with high stakes testing and teacher evaluations may influence a teacher's ability to focus on parenting responsibilities.

Behavior-based conflict occurs when specific behaviors required in one role are incompatible with the expected behavior in other roles. For example, emotional restriction and firmness required by school administrators may be incompatible with the need for flexibility and emotional openness at home with small children.

Due to difficulties in operationalizing behavior-based conflict, little empirical evidence exists to support its existence, while time and strain-based conflict have been used in research more extensively (Carlson et al., 2000). Because agriculture teachers are more likely to experience time-based conflict, this study focused exclusively on this dimension of WFC.

Antecedents of WFC

Role salience (also known as role commitment, role centrality, role importance, and personal involvement) is an important determinant of WFC. Greenhaus and Beutell (1985) proposed that WFC grows when either work or family roles are salient and central to a person's life. They argued individuals will invest more time and energy into roles

they consider to be important to them, allowing less time and energy for other roles.

Greenhaus and Beutell (1985) proposed WFC is intensified when either work or family roles are salient and central to the person's self-concept. Therefore, a critical determinant of WFC is one's perception of personal importance of work and family roles.

In their study of 213 married computer workers and lawyers, Cinamon and Rich (2002) used cluster analysis to form three groups of individuals who systematically differed by salience in terms of work and family roles. They found role salience had a significant influence on WFC in both directions (WIF and FIW). In her study of 147 employed English women with children, Noor (2004) found a direct effect of role salience in the prediction of job satisfaction. She found work salience was positively related to job satisfaction, above the effect of WFC in both directions. She also found role salience was a moderating variable between WFC and symptoms of psychological distress. Noor (2004) found work salience intensified the negative impact of WIF on well-being. Work and family salience therefore are important variables to consider when studying WFC.

Due to traditional role expectations that work is more important for men and family more important for women, gender is the demographic characteristic most often examined in studies exploring antecedents of WFC (Pleck, 1977). In the 1970's and 1980's when the influx of women into the workforce escalated, research of the WFC generally focused on women. However, over the past several decades, studies of the relationship of WFC and gender have expanded to include men (Barnett, Marshall, & Pleck, 1992; Fox, Fonseca, & Bao, 2011; Kinnunen & Mauno, 1998; Morgan, 2014).

According to Pleck (1977), women experience greater family interference with work (FIW) than men because they tend to assume the primary responsibility for home-related demands and crises. In contrast, Pleck (1977) argued work demands would intrude into the family role more for men, and they would experience more work interference with family (WIF), because of the likelihood they would take work home with them and use family time to recuperate from the stress of the workplace. However, Higgins, Duxbury, and Lee (1994) argued women experience greater WIF than men because of their high level of involvement in the family, and the work responsibilities that keep them from being as involved in family as they would like.

Empirical evidence of these differences in WFC by gender, has also shown mixed results (Byron, 2005; Eagle et al., 1997; Grzywacz & Marks, 2000, Gutek et al., 1991; Kinnunen & Mauno, 1998; Kirchmeyer, 1993). However, in a meta-analysis of the antecedents of WFC, Byron (2005) reported although only small differences existed, employed men tended to experience slightly higher WIF than women, while employed women tended to experience more FIW than men, thus supporting Pleck's (1977) original argument. Additionally, Galinsky et al. (2011) reported as gender roles continue to converge, the levels of WFC for fathers and mothers has diverged. They reported the WFC (both WIF and FIW) of men has risen significantly over the past three decades (from 34% in 1977 to 49% in 2008), while the level of conflict reported by women has not changed significantly (from 34% in 1977 to 43% in 2008) (Galinsky et al., 2011).

In agricultural education, Murray, Flowers, Croom, and Wilson (2011) found female agriculture teachers in Georgia were responsible for most of the household and

childcare responsibilities, while male agriculture teachers in Georgia were mostly responsible for yard work, farm work, and home maintenance. Despite this, they found both male and female agriculture teachers spent at least 20 hours per week involved in family commitments in addition to their demanding work commitments. As a result, both male and female agriculture teachers perceived job responsibilities as barriers to fulfilling family responsibilities (work interference with family). Finally, they concluded although both male and female teachers experienced WIF, females would be expected to experience more overall WFC because they still maintain the traditional gender role of household and childcare responsibilities. However, in a study of Oregon agriculture teachers, Sorensen and McKim (2014) found no difference between male and female agriculture teachers in their perceived ability to balance work and family responsibilities. Because of the inconsistency in results from the literature, additional research exploring WFC by gender could yield important information to the research community as well as to the agricultural education profession, particularly as the number of female agriculture teachers continues to rise.

Little empirical evidence exists to determine if age is related to WFC. In their study, Grzywacs and Marks (2000) found younger women reported more FIW than older women while younger men reported more conflict in both directions than older men. One possible explanation of this is the more experience an employee has, the more likely he or she has gained the necessary expertise to be able to cope with work demands without infringing upon family responsibilities (Cinamon & Rich, 2005).

The literature has produced mixed findings concerning marital status, with most literature failing to confirm an effect of marital status on conflict in both directions (Byron, 2005; Grandey & Cropanzano, 1999). Studies do suggest, however, that caregiving responsibility (either for children or elderly) increases WFC. Frye and Breagh (2004) found employees with primary care responsibility experienced greater amounts of FIW than those without. Boise and Neal (1996) found working parents were frequently interrupted at work to deal with family-related matters. Fredriksen-Goldsen and Scharlach (2001) reported almost one quarter of employed parents reported they were not doing a good job meeting their work, family, and personal responsibilities.

In agricultural education, Sorensen and McKim (2014) found marital status had no effect on Oregon agriculture teachers' ability to balance work and family responsibilities. However, in their national sample of agriculture teachers, Bruening and Hoover (1991) found agriculture teachers reported being married as the least positive factor and the second most negative factor behind financial situation influencing their performance as a teacher. Finally, in their study of agriculture teachers in the northeastern United States, Odell, Cochran, Lawrence, and Gartin (1990) found family attributes, particularly marital satisfaction of one's spouse, had a large and significant influence on the job satisfaction of agriculture teachers. None of these studies directly measured WFC in relation to variables related to marital status and spousal characteristics. Furthermore, due to the discrepancy in findings and the limited research among teachers, more research examining the relationship between WFC and variables related to marital status among agricultural educators might be warranted.

Studies have indicated the number of children living at home is associated with WFC in both direction (Grandey & Cropanzano, 1999; Kinnunen & Mauno, 1998; Netemeyer et al., 1996). Many studies outside of education have found the number of children at home and FIW are positively correlated with each other (Byron, 2005; Eagle et al., 1997; Grandey & Cropanzano, 1999; Netemeyer et al., 1996). These findings are reasonable since, according to the role conflict theory, the more responsibilities (e.g. dependent care responsibilities) one has, the more WFC one is likely to experience.

In agricultural education, Odell et al. (1990) found the presence of children at home negatively impacted agriculture teachers' job satisfaction. Additionally, in their study of agriculture teachers in the United States, Breuning and Hoover (1991) found parenting was ranked as the third most negative factor influencing their performance as agriculture teachers. Despite these findings, Sorensen and McKim (2014) found the presence of dependent children to have no effect on Oregon agriculture teachers' ability to balance work and family responsibilities. Additionally, in a study of female teachers in Israel, Cinamon & Rich (2005) found little correlation between number of children and FIW. Based on the discrepancy in findings and the lack of current literature, more research should be conducted exploring the influence of dependent children on WFC.

Findings suggest that the age of children also influences WFC, with younger children having more of an effect than older children, and more significantly on women than men (Crouter, 1984; Higgins et al., 1994; Lewis & Cooper, 1999). Higgins et al. (1994) found women with children over age thirteen experienced significantly less conflict in both directions than those with younger children, whereas for men, conflict

was only slightly lower for older children than younger children. No research has been conducted in agricultural education examining the relationships of WFC and age of dependent children. Therefore, more research examining variables related to the age of dependent children as antecedents of WFC among both male and female agricultural educators is warranted.

Workplace factors have also been studied in relation to WFC. For example, previous research has shown family-supportive organizations to be negatively related to WFC (Booth & Matthews, 2012; Kossek, Pichler, Bodner, & Hammer, 2011; Lapierre & Allen, 2006). In their meta-analysis, Kossek et al., 2011 found family-supportive organizations were more negatively related to WFC than general perceived support. This finding suggests family-supportive organization perceptions differ from general support and should be studied as separate variables. They also argued the relationship between family-supportive organization perceptions and WFC has been understudied. Therefore, the need for research examining family-supportive work cultures may be warranted.

Additional studies have shown work factors, such as job stressors, work overload, time spent at work, and job involvement, to be much more significant in predicting WIF than family factors are in predicting FIW (Beutell & Wittig-Berman, 1999; Frone, Russell, & Cooper, 1992; Major et al., 2002). Studies have found the crossover influence of family factors on WIF, and work factors on FIW, were only indirectly related, or mediated, by the effects of WFC (Beutell & Wittig-Berman, 1999; Major et al., 2002). These studies suggested family variables to be directly related to FIW, while work variables are directly related to WIF. Common work factors that have been found in the

literature to significantly influence WFC include various job stressors (e.g. autonomy and schedule inflexibility), work time, and job involvement (Beutell & Wittig-Berman, 1999; Frone et al., 1992; Mesmer-Magnus & Viswesvaran, 2005). Job involvement has been operationalized in studies as both work salience and the amount of time and energy one invests in the work role (Beutell & Wittig-Berman, 1999; Frone et al., 1992). Although operationalized differently, studies in agricultural education have explored job involvement of agriculture teachers and its relationship to WFC, specifically, time-based conflict.

Because agricultural education is both demanding and challenging, time-based conflict seems to be of concern. One challenge of agricultural education is that instructors must meet the demands of teaching but also take on other specific roles associated with the program (Torres et al., 2008). In addition to classroom and laboratory instruction, some of the programmatic roles stated by Torres et al. (2008) are managing Supervised Agricultural Experience programs (SAE), fostering school and community partnerships, supervising program planning, marketing, and growth, and advising an active FFA chapter. The additional responsibilities increases the amount of time required to fulfill responsibilities in the work domain, diminishing time available in the family domain.

Agricultural education instructors regularly surpass working a standard 40 hour-week, carrying out activities such as preparing lessons, completing paperwork, coaching career development teams, evaluating student work, managing labs and equipment, and supervising student projects (Torres et al., 2008). Trends in agricultural education show

that teachers have been given more, not less, job responsibilities than in previous times (Lambert, Henry, & Tummons, 2011).

Torres et al. (2008) noted while many factors affect agriculture teachers' job satisfaction, workload and hours of work are frequently discussed. The amount of hours that a teacher spends at work is the greatest predictor of high teacher stress (Lambert et al., 2011; Torres et al., 2009). Goode and Stewart (1981) found agriculture teachers in 1981 worked an average of between 54 and 58 hours per week. They further noted agriculture instructors have experienced time pressures on their job for decades, and the demands have continued to increase every year in the profession. However, agriculture teachers are not alone; over 60% of American workers report wanting to work fewer hours (Bond et al., 1998).

The time-based demands on most American workers, including agriculture teachers, are strenuous. Newcomb, Betts and Cano (1987) stated agriculture instructors complain about having more work to do than is "humanly possible" (p. 26). Studies involving both novice and experienced agriculture teachers have identified common problems that agriculture teachers face. These include working long hours (Miller & Scheid, 1984; Moore & Camp, 1979; Mundt & Connors, 1999; Torres et al., 2009), preparation time and preparing classes (Boone & Boone, 2007; Miller & Scheid, 1984; Moore & Camp, 1979; Mundt & Connors, 1999; Myers, Dyer, & Washburn, 2005; Talbert, Camp, & Heath-Camp, 1994), excessive workload, meeting deadlines (Moore & Camp, 1979; Newcomb et al., 1987; Torres et al., 2008; Torres et al., 2009), managing time (Boone & Boone, 2007; Edwards & Briers, 1999; Myers et al., 2005; Talbert et al.,

1994), balancing personal life and professional life (Edwards & Briers, 1999; Mundt & Connors, 1999; Myers et al., 2005; Torres et al., 2009), managing and reducing stress (Edwards & Briers, 1999; Myers et al., 2005), and excessive paperwork (Boone & Boone, 2007; Miller & Scheid, 1984; Mundt & Connors, 1999). The literature clearly suggests time-based conflict might be a common occurrence in agricultural education. As a result, agriculture teachers are at risk of falling prey to the consequences of WFC, including turnover intentions and attrition.

Consequences of WFC

Research indicates WFC has been associated with negative workplace outcomes that include low occupational well-being, poor work performance, low organizational commitment, job dissatisfaction, increased job stress, burnout, high intentions to quit, and actual turnover (Allen et al., 2000; Barling, et al., 1994; Bruck et al., 2002; Burke, 1988; Carlson et al., 2000; Grandey & Cropanzano, 1999; Hepburn & Barling, 1996; Kossek & Ozeki, 1998; MacEwen & Barling, 1994; Major et al., 2002; Netemeyer et al., 1996). Among the negative workplace outcomes, turnover intentions and actual turnover (attrition) has been found to have the strongest positive relationships with WIF and FIW (Allen et al., 2000; Grandey & Cropanzano, 1999; Greenhaus, Collins, Singh, & Parasuraman, 1997; Netemeyer et al., 1996).

Turnover intentions do not always result in actual turnover, however, they have been found to be a strong predictor, even more so than job satisfaction and organizational commitment (Kopelman, Rovenpor, & Millsap, 1992; Vandenberg & Nelson, 1999). Some researchers have found significant relationships between WFC and turnover

intentions (Allen et al., 2000; Boyar, Maertz, Pearson, & Keough, 2003; Netemeyer et al., 1996; Netemeyer, Brashear-Alejandro, & Boles, 2004). In their meta-analysis, Allen et al., (2000) found a positive relationship between WIF and turnover intention. Other studies have shown positive relationships between FIW and turnover intentions (Boyar et al., 2003). In three different studies, Netemeyer et al., (1996) found significant correlations between WFC and turnover intentions. Additionally, studies show that WFC is predictive of other workplace withdrawal behaviors such as absenteeism, tardiness, leaving early from work, and family-related interruptions at work (Anderson, Coffey, & Byerly, 2002; Gignac et al., 1996; Hammer, Bauer, & Grandey, 2003).

Although much research suggests WFC is positively related to employee turnover, Allen et al., (2000) argued more research is needed. Additionally, WFC research pertaining to teachers, especially in relation to turnover intentions has been scarce (Cinamon & Rich, 2005). Thus, it is clearly important to examine WFC and its effects, particularly turnover intentions, on teachers. Are the time-based demands placed on agriculture teachers causing heightened WFC? Is WFC related to intentions to quit teaching?

Teacher Turnover

Teacher turnover, also called attrition, is a serious and ongoing problem in this country and internationally, and is one that has received significant attention over the past few decades (Ingersoll, 2001). Teacher attrition is comprised of two parts: 1) “movers” are teachers who leave one school or district for another; and 2) “leavers,” are teachers

who exit the profession temporarily or permanently (Ingersoll, 2001). While movers impact schools and school systems, a larger concern for education is the leavers.

Teachers of all subjects in this country are leaving their jobs in the secondary classrooms at alarming rates. Ingersoll (2003) found the percent of employee turnover for all teachers was 14.3; higher than the rate for all US employee turnover (11%), and even higher than nurses – a high turnover profession – at 12%. Harris and Adams (2007) however, suggest teacher turnover rates are similar to those of other occupations. Nonetheless, this issue has drawn substantial attention of policymakers, researchers, and administrators over the past few decades.

New teachers are particularly vulnerable to turnover. Nationally, across all disciplines, most teacher attrition occurs within the first three years of teaching (Croasmun, Hampton, & Herrmann, 1997; Darling-Hammond, 2003; Ingersoll & Smith, 2003). Although the reported attrition rates vary, most studies indicate about 25 percent of teachers leave the profession within the first two years and up to 50 percent leave within the first five years (Colbert & Wolff, 1992; Croasmun et al., 1997; Ingersoll & Smith, 2003). Teacher turnover tends to level out and decrease after five to seven years, and dramatically decreases after ten years (Keigher & Cross, 2010). Attrition rates are highest among new teachers and among those close to retirement (Adams, 1996; Dworkin, 1980; Hanushek, Kain, & Rivkin, 2004; Ingersoll, 2001; Murnane, 1984; Shen, 1997). Researchers describe the occurrence of a U-shaped curve when attrition is plotted against age or years of teaching experience.

High teacher turnover among new teachers seems to also apply in Career and Technical Education (CTE), including agricultural education. Camp & Heath-Camp (2007) found 15% of CTE teachers left their jobs within the first year of teaching, while more than half quit within only six years. Similarly, in a nation-wide study, Warnick, Thompson, and Tarpley (2010) found only one-half of first year agriculture teachers reported they were highly likely to remain in the profession for more than three years and only one-third reported a high likelihood of remaining more than five years.

Costs of Teacher Turnover

The high rate of teacher turnover has not been without cost. The cost of teacher turnover impacts schools and school systems in a variety of ways, including academic costs from reduced student achievement, direct financial costs, and programmatic costs associated with a supply shortage of qualified teachers to fill vacancies. Researchers have noted that teaching quality is diminished, program planning is disrupted, student learning is reduced, and operating costs increase due to teacher turnover (Barnes, Crowe, & Schaefer, 2007; Gonzalez et al., 2008; Ingersoll, 2000; Macdonald, 1999; Shen, 1997).

Student Achievement Cost

High teacher turnover can negatively impact the effectiveness of a school by disrupting relationships and programs intended to improve student learning (Elfers, Plecki, & Knapp, 2006; Ingersoll, 2001). Losing a teacher means losing familiarity with school practices and involvement with students and parents. According to Darling-Hammond (2002), the more new teachers a school has on staff, the less knowledge base and less cohesion there is at the school.

Schools lose teachers very early in their career and are replaced with other novice teachers, who on average, remain in the profession for only a few years. Berliner (2001) suggests it takes between five and seven years for novice teachers to develop expertise in their practice. This cycle of novice teachers being replaced by other novice teachers prohibits the teaching profession from gaining experience necessary to develop expertise in teaching, thereby influencing student learning (Johnson, Berg, & Donaldson, 2005).

Additionally, to fill a need in the education system, many teachers have entered the classroom being under-certified, receiving emergency, temporary, or provisional certifications. Research shows student achievement is impacted by teachers who are under-certified. According to Laczko-Kerr and Berliner (2002), students of fully prepared and certified teachers outperform under-certified teachers on standardized tests.

Financial Cost

The financial cost associated with teacher turnover is disturbing. To replace teachers, districts incur costs for recruitment, hiring, induction, and professional training (Johnson et al., 2005). According to the Barnes et al. (2007) in their study for the National Commission on Teaching & America's Future, teachers who leave the profession cost an average of \$7,500 to replace. Nationally, an estimated \$7 billion each year is spent by public schools to hire, recruit, and train replacement teachers (Flynt & Morton, 2009; Barnes et al., 2007). Unfortunately, some teachers simply cannot be replaced due to a lack of qualified teachers to replace them (Kantrovich, 2007, 2010).

Teacher Shortage

The issue of teacher turnover is concerning because education is facing a continuing and worsening teacher shortage (Camp & Heath-Camp, 2007; Ingersoll & Smith, 2003). Math, science, special education, and some career and technical education (CTE) areas are affected the most by teacher shortages (Darling-Hammond, 2000; Howard, 2003; Walter & Gray, 2002).

One specific subject area of CTE facing teacher shortages is agricultural education. According to Kantrovich (2010), a teacher shortage problem has existed in agricultural education for more than 40 years. Since 1965, agricultural education across the country has never experienced a year in which all opened agriculture teaching positions have been filled (Kantrovich, 2010). Currently in agricultural education nationwide, there is not a sufficient supply of qualified agriculture teachers to replace those teachers who leave (Kantrovich, 2010). Foster et al. (2014) reported that as of September 15, 2014, there were 76 full-time and 10 part-time agricultural education vacancies that had not yet been filled. The failure to find sufficient qualified teachers to replace those that leave could mean termination of an entire CTE program. Kantrovich (2007) concluded agricultural education is running at a “deficit of human capital” and that a “shortage of significant proportion” (p. 45) would be the current state if it were not for emergency and alternative certifications. Kantrovich (2007) argued if it were not for alternative and emergency certifications of teachers, many agriculture programs would close. One of the most critical issues in agriculture education is the shortage of highly qualified teachers (Kantrovich, 2007; Lambert et al., 2011).

Poor recruitment of teachers into the profession, an increasing student population, increased retirements as the baby boomer generation ages, expansion of agricultural education programs, and teacher turnover are blamed for the teacher shortage crisis in America (Foster et al., 2014; Howard, 2003; Ingersoll, 2003; Ingersoll & Smith, 2003; McCaslin & Parks, 2002). However, Ingersoll (2001) found that most turnover is due to teachers leaving before retirement, not retirement and poor recruitment. Ingersoll and Smith (2003) argued the teacher shortage problem is primarily a result of a “revolving door.” Ingersoll and Smith (2003) argued recruiting more teachers will not solve the teacher shortage problem if large numbers of them continue to leave before retirement. To better explain this phenomenon, they made the analogy of the teacher shortage problem to pouring water into a bucket with holes in the bottom. Adding more water (teachers) does not solve the problem if water continues to pour out. According to some, teacher turnover is the single largest factor determining the demand for additional teachers in all subjects in the United States (Croasmun et al., 1997; Kirby & Grissmer, 1993).

Many policy initiatives to reduce the impact of teacher turnover have been implemented, including teacher recruitment programs, increased teacher salaries, and providing mentoring or induction programs. The most common policy response to the teacher shortage crisis is to increase the number of teachers entering the profession through recruitment programs and offering financial incentives (Ingersoll, 2001). Teach for America is a popular program designed to recruit teachers into a variety of subjects (TeachForAmerica, 2015). One program designed to recruit students and potential

teachers into the agricultural education profession is the Teach Ag campaign (NAAE, 2015).

Researching Teacher Turnover

Teacher turnover and the variables that influence it have been widely studied across all disciplines. Shen (1997) provided a review of the two primary approaches to study teacher turnover which include, 1) multivariate studies testing multiple variables simultaneously and various theories explaining why teachers remain or exit the profession, and 2) bivariate studies examining the relationship between teacher attrition and other specific variables, such as gender and years teaching.

Two of the most common theories explaining general teacher turnover and retention include the model of influences on teacher retention (Chapman, 1983, 1984; Chapman & Green, 1986) and the theory of teacher attrition (Grissmer & Kirby, 1987; Kirby & Grissmer, 1993). Chapman's (1983) model, based on the Social Learning Theory, describes teacher retention as a function of variables related to the teachers' personal characteristics, educational preparation, educational experiences, initial commitment to teaching, professional integration into teaching, external influences, and career satisfaction. According to Chapman, the combination of all these variables determines a teacher's satisfaction which ultimately leads to a teacher's decision to leave or remain in teaching. Chapman (1984) studied college graduates who had: 1) taught continuously, 2) left teaching within 5 years, and 3) never taught. Those who remained in teaching were older, had a positive first experience with teaching, perceived it would be difficult to find another job, and began with a higher commitment to teaching as

compared to those who left teaching or who never entered teaching. Those who left teaching tended to be older, female, and had less job satisfaction than those who had never taught. Those who had never taught and got jobs outside of teaching reported higher job and life satisfaction than teachers.

The theory of teacher attrition (Grissmer & Kirby, 1987; Kirby & Grissmer, 1993) has been used extensively in educational research to explain why teachers leave their jobs. Grissmer and Kirby's (1987) model of teacher attrition is comprised of three factors: the Human Capital Theory of Occupational Choice, the role of uncertainty and incomplete information, and changes in family status or residence after accepting a teaching position.

The theory of human capital suggests that teachers make methodical evaluations of the net monetary (e.g., income, benefits, promotion opportunity) and non-monetary benefits (e.g., stress levels, work hours, work environment, colleague relationships) of alternative career options (Kirby & Grissmer, 1993). Based upon those evaluations, teachers make decisions to either leave or remain in teaching depending on which options maximize their net returns. This theory posits as a teacher trains for or stays in a profession, he or she accrues two types of capital; generic and specific (Kirby & Grissmer, 1993). Generic capital, such as teamwork skills or broad-based education, is easily transferred to other occupations, while specific capital, like occupational specific training, professional contacts, or tenure, is relevant to only one profession. As teachers accrue specific capital, they are more likely to remain in the profession. This explains why teachers most often choose to leave early in their career when they have not acquired

large amounts of human capital specific to teaching that would be lost if they changed careers.

Grissmer and Kirby (1987) suggested family factors can influence a teachers' decision to exit the profession. They cited family status changes (e.g. childbirth) or relocation (e.g. spouse's employment) as potential family factors that may influence teachers' career decisions. These types of changes in family structure result in teachers reevaluating their job choices. Also, these changes most often occur with young teachers as they get married, start a family, or their spouse's job requires a relocation. Therefore, the likelihood of changes in family status or residence tends to be higher for teachers in the early stages of their career.

Finally, in agricultural education, Tippens, Ricketts, Morgan, Navarro, and Flanders (2013) proposed a model of agriculture teacher attrition. In their model, they summarized the reasons behind agriculture teacher turnover as issues of compensation, working conditions, family and personal factors, and employee factors. These factors are thought to contribute to job satisfaction, a predictor of teacher persistence and turnover. Their model was based on an overview of literature both within and outside the agricultural education discipline, but the full model has not been empirically tested among agriculture teachers. Nonetheless, using a sample of 390 agriculture teachers from Georgia, Tippens et al., (2013) found females were more likely to leave the profession before males, with intentions to return after raising their children.

Factors Affecting Teacher Turnover

Studies have explored the relationships between teacher turnover and a number of work, personal, and family factors. Numerous studies have explored the effects of a variety of workplace characteristics on teacher turnover. Salary has been shown in a number of studies to be negatively related to teacher turnover (Boe, Bobbitt, Cook, Whitener, & Weber, 1997; Boyd, Lankford, & Wyckoff, 2005; Croasmun et al., 1997; Flynt & Morton, 2009; Gonzalez et al., 2008; Imazeki, 2005; Ingersoll, 2003; Krieg, 2006; Macdonald, 1999; Podgursky, Monroe, & Watson, 2004; Singer, 1993; Shen, 1997; Stinebrickner, 1998; Theobald, 1990; Theobald & Gritz, 1996). Ingersoll and Smith (2003) reported dissatisfaction from low salary was the primary reason teachers left teaching. According to the Ingersoll (2001), 42 percent of teachers who had left their jobs reported job dissatisfaction, primarily from low salaries, as the major reason. According to Borman and Dowling (2008), teachers with low salaries were 1.85 times more likely to leave teaching than teachers with high salaries.

Researchers have also found math and science teachers are most likely to leave teaching because they know they can probably make more money working the high-demand field of math and science rather than teach (Ingersoll, 2001; Murnane & Olsen, 1990; Theobald & Gritz, 1996). Although little research exists for agriculture teachers, one could assume agriculture teachers would be similar to science and math teachers. Because of their broad range of skills and knowledge in science and technology, agriculture teachers would likely be in high demand for the same type of high-paying and high-demand jobs as science and math teachers.

In a qualitative study of eight former school teachers, Gonzalez et al. (2008) found each teacher attributed leaving their job to low salary, specifically mentioning the extra duties they were required to perform throughout the day without any compensation. Evidence suggests agriculture teachers share those same complaints. Chaney (2007) found novice agriculture teachers who had left the profession reported the workload was too heavy for the amount of pay they received. Furthermore, respondents indicated increasing salary would have improved the likelihood of remaining in the profession.

Research shows numerous workplace factors are positively associated with higher teacher turnover. These factors include high poverty schools (Elfers et al., 2006; Ingersoll, 2003; Loeb, Darling-Hammond, & Luczak, 2005; Shen, 1997; Shin, 1995; Smith & Ingersoll, 2004; Stinebrickner, 1998), schools with high minority student populations (Carroll, Reichardt, & Guarino, 2000; Guarino, Santibanez, & Daley, 2006; Hanushek et al., 2004; Kelly, 2004; Loeb et al., 2005; Scafidi, Sjoquist, & Stinebrickner, 2007; Shen, 1997), schools in very wealthy areas (Shen, 1997), schools with high discipline issues (Gonzalez et al., 2008; Ingersoll, 2001), schools with high student to teacher ratios (Theobald, 1990), and schools in large urban districts (Guarino et al., 2006; Haberman, 1987; Krieg, 2006; Lankford, Loeb & Wyckoff, 2002; Loeb et al., 2005).

Research also shows a number of workplace factors that are negatively associated with teacher attrition or positively associated with teacher retention. These factors include schools with effective mentoring programs (Danielson, 2002; Darling-Hammond, 1999; Eller, Deorfler, Meier, 2000; Hall, Pearson, & Carroll, 1992; Odell & Ferraro,

1992, Shen, 1997; Smith & Ingersoll, 2004), schools with supportive administrators and colleagues (Darling-Hammond, 2000; Eller et al., 2000; Hall et al., 1992; Ingersoll, 2001; Shen, 1997; Smith & Ingersoll, 2004; Weiss, 1999) and teacher autonomy and decision making capability within the school (Darling-Hammond & Wise, 1983; Ingersoll, 2001; Rosenholtz & Simpson, 1990; Shen, 1997).

In agricultural education, various studies have identified work-related factors that are positively associated with job dissatisfaction or have been cited as reasons for leaving the profession. Tippens et al., (2013) recently conceptualized a model of teacher attrition in agricultural education in which they identified from the literature factors related to job satisfaction and teacher turnover. These factors included; a) family and personal factors (e.g. other job opportunities, children and family responsibilities), b) compensation (e.g. salary), c) employment factors (e.g. teacher experience), and d) working conditions. For working conditions, Tippens and colleagues identified administrative support, student factors (demographics and behavior), and school environment factors as predictors of job satisfaction and teacher retention.

Walker, Garton, and Kitchel (2004) found agriculture teachers who had left the profession within the first five years were as satisfied with their job as an agriculture teacher as those that had remained but, they were dissatisfied with the lack of administrative support. Boone and Boone (2007) also found lack of administrative support to be a problem for agriculture teachers. Additionally, in their study of agriculture teachers in West Virginia, Boone and Boone reported agriculture teachers experienced workplace problems associated with excessive paperwork, lack of mentors,

poor financial benefits, lack of community support, and inadequate facilities or equipment.

Student characteristics and behavior have been identified in the agriculture education literature as factors associated with job satisfaction. Student discipline, motivating students, and recruiting students were challenges faced by teachers (Boone & Boone, 2007; Mundt & Connors, 1999; Myers et al., 2005). School environment factors have also been associated with teacher turnover. For example, Chaney (2007) found that teachers left their jobs because of excessive workload. Jewell, Beavers, Kirby, and Flowers (1990) found among factors of the working environment, agriculture teachers were most dissatisfied with students' academic ability.

Workplace factors related to agriculture teachers' turnover intentions or job dissatisfaction have also been examined by career phase. Grady (1985) found a significant difference between job satisfaction scores of agriculture teachers with varying years of teaching experience; job satisfaction increased as the number of years of teaching experience increased. As a result, novice agriculture teachers tended to be less satisfied with their job and had more concerns than their more experienced colleagues. Stair, Warner, and Moore (2012) conducted a study to explore the concerns of first year agriculture teachers in North Carolina and found the workplace concerns to be managing student discipline, making accommodations for ESL or special education, motivating students, building support of faculty, counselors, and administrators, organizing FFA activities, and recruiting and retaining students. Mundt (1991) found similar challenges

among beginning teachers in Idaho; student discipline, classroom management and administrative support.

In addition to workplace factors, studies also show personal demographic characteristics of teachers, including age, ethnicity, and sex, have an influence on teacher turnover. As noted previously, teacher turnover is closely tied to a teacher's age, with youngest teachers and those nearing retirement being most likely to leave. Of those teachers retiring, Harris and Adams (2007) found teachers tend to retire earlier than those in other professions – nursing, accounting, and social work – because of the relatively high ratio of pensions to salaries in teaching.

Research indicates ethnicity or race is significantly related to teacher turnover (Macdonald, 1999; Shen, 1997). White teachers are more likely to stay in schools with higher proportions of white students, and white teachers are 1.36 times more likely to drop out of teaching than minority teachers (Borman & Dowling, 2008; Ingersoll, 2001).

Research has also been conducted exploring the relationships between sex and teacher turnover. Most studies show female teachers tend to leave the profession at higher rates than males (Adams, 1996; Stinebrickner, 2002). In a meta-analysis of teacher attrition and retention, Borman and Dowling (2008) found women to be 1.3 times more likely to leave teaching than men. Other studies have shown female teachers were more likely than males to have part-time teaching positions (Heyns, 1988; Marso & Pigge, 1997). Marso and Pigge (1997) argued male teachers preferred not to remain in the profession as part-time teachers if full-time positions existed, including outside of the teaching profession.

In agricultural education, there are mixed findings regarding differences in teacher turnover intentions by sex. In a recent study of Oregon agriculture teachers, Sorensen and McKim (2014) found no significant differences among male and female agriculture teachers in terms of job satisfaction, work-life balance ability, and career commitment. Similarly, Cano and Miller (1992) found male and female agriculture teachers did not differ in terms of job satisfaction or job dissatisfaction, variables that are correlated with teacher turnover and career commitment (Chapman, 1984; Sorensen & McKim, 2014). However, Edwards and Briers (2001) found the combination of sex and agricultural work experiences were predictors of anticipated years in the profession, but not sex alone. In their study, females reported they anticipated working fewer years than male agriculture teachers. Additionally, Kelsey (2006) found women felt their gender was a barrier to longevity in the agriculture teaching profession and reported lower career commitment than their male counterparts.

Many studies in agricultural education have highlighted the unique challenges women agriculture teachers face, which are barriers to longevity in the agriculture teaching profession (Baxter, Stephens, & Thayer-Bacon, 2011; Foster, 2001; Kelsey, 2006; Murray et al., 2011). In a study exploring the struggles agriculture teachers face in balancing work and family responsibilities, Murray et al. (2011) found agriculture teachers struggled to find balance because both male and female agriculture teachers spent more than 55 hours per week doing job-related tasks while also carrying out responsibilities at home. Despite the similarities between men and women in the amount of hours they worked, and the struggle to find balance, Murray et al. (2011) found men

and women in their sample held tightly to traditional gender roles. As a result, they reported, “The male agriculture teacher may feel pressure to be at home to help with family responsibilities, but the female teacher may not have the option if her husband is at work” (p. 11).

This sentiment has resonated in other research as well. Foster (2001) found female agriculture teachers were frustrated in their efforts to succeed as agriculture teachers while trying to maintain quality family and personal time, which led many to contemplate leaving the profession. She found women perceived the job as an agriculture teacher to be incompatible with their personal life demands. Foster (2001) found women reported fear of starting a family because of fear they would have to quit teaching. Additionally, the women in her study reported feeling guilty for spending time at work away from the family. She concluded female agriculture teachers often feel it is necessary to choose between their career and personal pursuits. Similarly, Kelsey (2006) found the time required to devote to work was a barrier to females entering the teaching profession, because of the time it would take away from their own personal and family pursuits and goals.

Of the large body of literature that exists exploring the variables related to teacher turnover, little research has examined family characteristics. Stinebrickner (2002) argues family variables are very important in understanding why teachers leave teaching. Studies show family characteristics of teachers, including marital status and age and number of children might have an influence on the length of time a teacher remains in the profession. Wayne (2000) argued individuals are more likely to leave teaching from

family and personal reasons than from job dissatisfaction. Teachers who are married are more likely to leave teaching than non-married teachers (Borman & Dowling, 2008; Stinebrickner 1998, 2002).

Research also suggests the number and ages of children are related to the longevity of a teacher's career (Boe et al., 1997; Stinebrickner, 1998, 2002). In his studies with elementary and secondary school teachers, Stinebrickner (1998, 2002) found both male and female teachers who had two children were significantly more likely to remain in teaching than males with no children. However, the effect of children had a greater influence on male teachers remaining in the profession than females. This is likely due to the fact that women were more likely to leave the workforce to stay home and care for their children than men (Stinebrickner, 1998). Additionally, women teachers who reported having a new child within the past year were between 6.69 and 7.83 times more likely to leave the workforce than women who do not have a newborn child (Borman & Dowling, 2008; Stinebrickner, 2002). Stinebrickner (1998) concluded, "A very substantial amount of teacher attrition is directly related to the birth of new children" (Stinebrickner, 2002, p. 208). Interestingly however, there is evidence to suggest that teachers who leave the profession to have a child often return to teaching. Estimates suggest that up to one quarter of the teachers hired each year, are people who have taught before, referred to as temporary leavers (Wayne, 2000).

The inability to balance the demands of both work and family may be related to teacher turnover. Flynt and Morton (2009) argued turnover occurs when teachers are unable to balance their home life and work life. According to Flynt and Morton (2009),

personal life stressors lead teachers to be dissatisfied with their jobs and seek employment in other professions. In a study of agriculture teachers who had left the profession, Chaney (2007) found half of all the respondents reported the primary reason for leaving teaching was seeking balance between professional and personal life. Similarly, Crutchfield, Ritz, & Burris (2013) found a negative relationship existed between occupational commitment of agriculture teachers and both WIF and FIW.

Teaching agriculture is demanding, and balancing work and family roles has become a challenging task for agriculture teachers (Crutchfield et al., 2013; Murray et al., 2011). Most of the literature in agricultural education shows agriculture teachers struggle to balance work and family roles (Chaney, 2007; Foster, 2001; Murray et al., 2011; Sorensen & McKim, 2014). Stair et al. (2012) conducted a study analyzing the concerns of 22 novice teachers in North Carolina. They found the highest concern among the first year teachers was balancing personal and professional responsibilities.

Agriculture teachers spend excessive hours at work, leaving little time to devote to other life roles (Murray et al., 2011; Torres et al., 2008). Moore and Camp (1979) conducted a study to determine why agriculture teachers leave the profession and found among the highest ranking factors given by former teachers was “long hours” and “too many required extracurricular activities” (p. 12). More recent studies show long work hours and workload demands are sources of stress, dissatisfaction, and burnout among agriculture teachers (Lambert et al., 2011; Talbert et al., 1994; Torres et al., 2009).

Despite the workload pressures on agriculture teachers, studies have indicated agriculture teachers, including those that have already left the profession, are generally

satisfied with their jobs (Cano & Miller, 1992; Castillo, Conklin, & Cano, 1999; Chaney, 2007; Chenevey, Ewing, & Whittington, 2008; Grady & Burnett, 1985; Kitchel et al., 2012; Ritz, Burris, & Brashears, 2013; Sorensen & McKim, 2014; Walker et al., 2004). Chaney (2007) found beginning teachers who had already left the profession were generally satisfied with their work as agriculture teachers, but were dissatisfied with the workload and time demands placed on them. Similarly, Walker et al. (2004) found agriculture teachers who left teaching were as satisfied as those who remained in the profession, but those who left reported family issues as the primary reason for leaving. These findings suggest that although agriculture teachers enjoy their jobs, the inability to cope with the pressures associated with participation in multiple life roles (e.g. work and family), may be related to their decision to quit teaching.

Due to the nationwide shortage of qualified agriculture teachers, the issue of teacher turnover continues to be an important topic of research. Additionally, with society's sociodemographic changes and the changes within agricultural education in recent years, new research on a national scale exploring the interface between agriculture teachers' work and family roles is warranted. Due to a dearth of literature on the topic, this current research intends to explore the relationships among agriculture teachers' work and family domain characteristics, WFC, and turnover intentions.

Conceptual Framework

Based upon the theoretical framework and the literature review, a conceptual model (Figure 1) was developed, which served to guide this research study. The conceptual framework for this study consists of factors associated with WFC as well as

teacher turnover. A number of agriculture teachers' work and family domain characteristics and their relationships to WFC and turnover intentions were derived from previous research. Additionally, little is known about the relationship between WFC and teachers' turnover intentions. This framework provides a foundation for answering the research questions of the study.

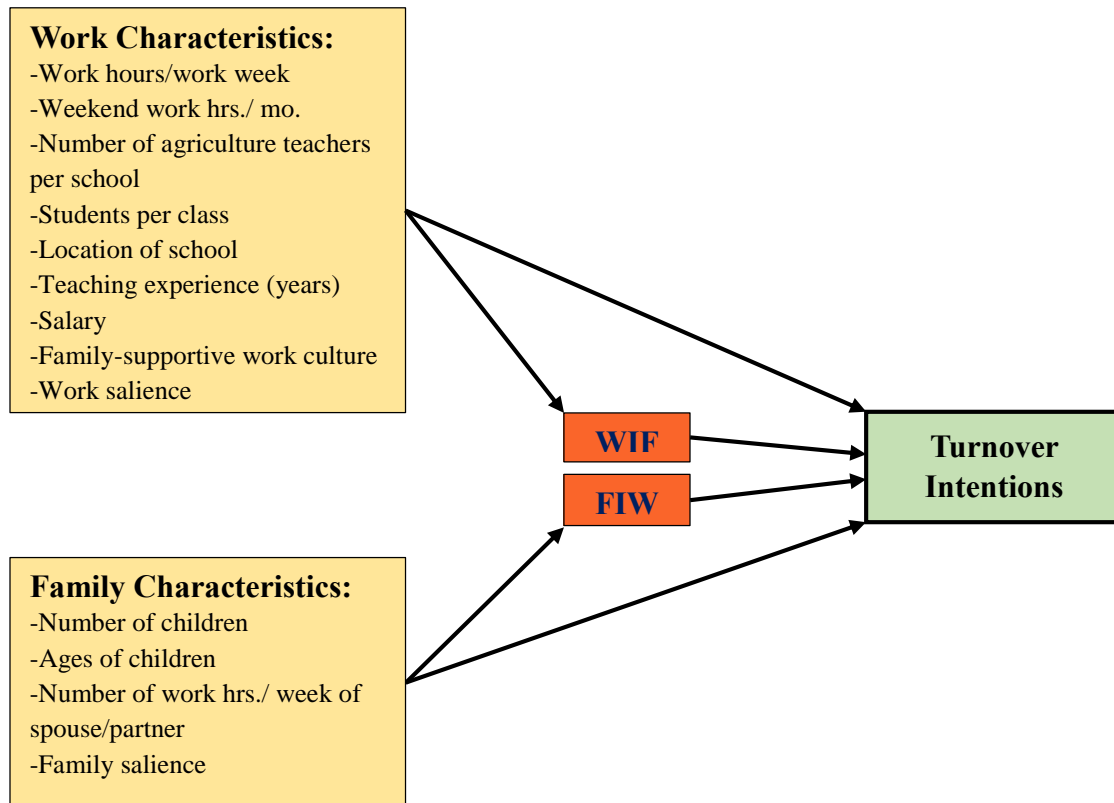


Figure 1. Conceptual model for analysis of work and family characteristics, work-family conflict, and turnover intentions of agriculture teachers.

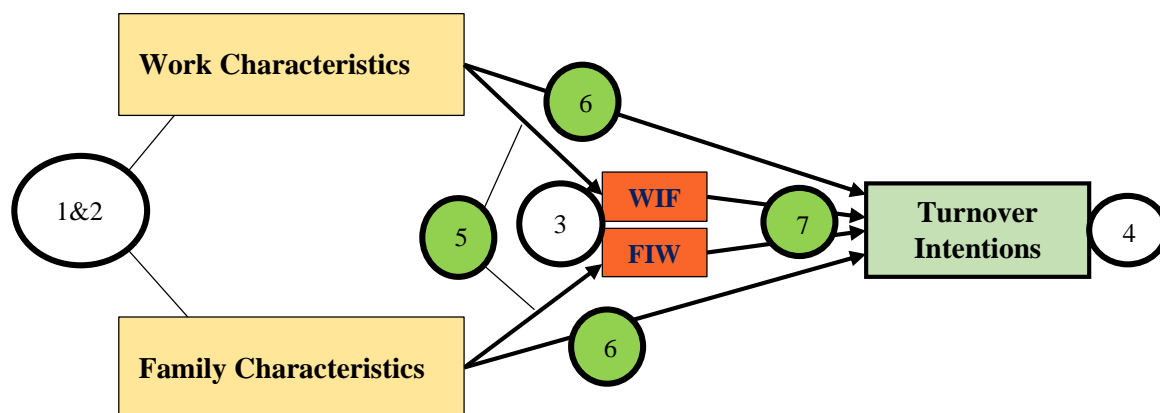


Figure 2. Graphical display of the analysis of research questions in relation to the conceptual framework

CHAPTER 3: METHODOLOGY

This study used survey research methodology to collect information on agriculture teachers' work and family domain characteristics, WFC, and turnover intentions. The survey instrument was designed and distributed to a random sample of agriculture teachers in the United States using the online survey system Qualtrics™. This online questionnaire and methods were useful for this nationwide study because of the advantages it provided, such as low costs, data collection from a large geographical area in a short period of time, and relative ease to input collected data from a large population into a statistical analysis program (Dillman, 2007).

Research Design

This study utilized descriptive and correlational methods. Descriptive methods were used to collect information about agriculture teachers' work and family domain characteristics, WFC, and turnover intentions. Correlational methods were used to explain the relationships between work and family domain characteristics, WFC, and turnover intentions of agriculture teachers.

Research Questions and Hypotheses

The following research questions, sub-questions, and hypotheses guided this study:

1. What are the demographic characteristics of agriculture teachers (personal, family, and work) and how do they differ by sex?
2. What are the perceptions and attitudes of agriculture teachers toward their own work and family domains?

3. To what degree do agriculture teachers experience WFC, and how does it differ by sex?
4. What are agriculture teachers' turnover intentions, and how do they differ by sex?
 - a. What are agriculture teachers' turnover intentions?
 - b. For what reasons are agriculture teachers most likely to leave the profession?
 - c. How do agriculture teachers' turnover intentions differ by sex?
5. What is the relationship between work and family domain characteristics and WFC?
 - a. What is the relationship between work domain characteristics and WIF?
 - *H₀: There is no relationship between agriculture teachers' work domain characteristics and WIF.*
 - b. What is the relationship between family domain characteristics and FIW?
 - *H₀: There is no relationship between agriculture teachers' family domain characteristics and FIW.*
6. What is the relationship between work and family domain characteristics and agriculture teachers' turnover intentions?

- *H₀: There is no relationship between agriculture teachers' work and family domain characteristics and turnover intentions.*

7. What is the relationship between WFC factors and agriculture teachers' turnover intentions?

- *H₀: There is no relationship between WFC factors and agriculture teachers' turnover intentions.*

Description of the Population

The target population for this study consisted of all secondary agriculture teachers in the United States during the 2014-2015 school year and who self-identified as being active participants in a family role. A secondary agriculture teacher was defined in this study as an individual with a full-time or part-time assignment to teach agriculture courses and who provided instruction in middle or secondary schools.

Since it is required that all chartered agriculture programs have FFA, and that agriculture teachers be listed as FFA advisors, the National FFA Organization was utilized as the source of participant contact information. According to the National FFA Organization, there were over 11,000 agriculture teachers in the United States when the study was conducted (National FFA Organization, 2014).

The appropriate sample size was determined based on Cochran's (1977) and Krejcie and Morgan's (1970) sample size determinant formulas (see Figure 3). According to Krejcie and Morgan (1970), the acceptable margin of error is 5% for categorical data and 3% for continuous data. However, when more than one type of

variable is utilized, researchers must make decisions as to which type of variables will be incorporated into sample size formula calculations (Barlett, Kotrlik, & Higgins, 2001). Cochran (1977) addressed this concern by stating “One method of determining sample size is to specify margins of error for the items that are regarded as most vital to the survey” (p. 81). In the present study, the most vital as well as the majority of variables were scaled and continuous in nature. Therefore, a 3% margin of error was utilized in the sample size formula. Based on Cochran’s (1977) sample size formula, the sample size required for this study was at least 171 for continuous data and at least 371 for dichotomous and categorical data. This study targeted a simple random sample from the entire population of secondary agriculture teachers in the United States. A sample frame of 778 agriculture teachers was obtained from the National FFA Organization and consisted only of names and email addresses.

$$n_0 = \frac{t^2 s^2}{d^2}$$

Figure 3. Sample size formula used for this study (Cochran, 1977). t = value for selected alpha level (.05), s = estimate of standard deviation in the population, d = margin of error.

Instrumentation

The survey instrument (Appendix A) consisted of questions to assess and explore relationships between agriculture teachers’ work and family domain characteristics, WFC, and turnover intentions. It also consisted of a list of reasons for which agriculture teachers would likely leave the profession early. Survey measures included existing validated measures, some of which were adapted for the purpose of this study.

Measures

Teacher Personal Characteristics

The instrument consisted of personal demographic questions pertaining to age, sex, ethnicity, and participation in other life roles. A list of life roles was derived from literature (Lawver, 2008, Murray et al., 2011) and participants were asked to indicate other life roles in which they actively participated. Age was a continuous variable, sex was a dichotomous variable, and ethnicity and participation in other life roles were categorical variables.

Family Domain Factors

Questions pertaining to family domain characteristics consisted of marital status, adult primary caregiving responsibility, parental status, number of children, ages of children, work status of spouse/partner, and weekly work hours of spouse/partner. Marital status, adult primary caregiving responsibility, parental status, and work status of spouse/partner were dichotomous variables. Number of children, ages of children, and weekly work hours of spouse/partner were continuous variables.

Work Domain Factors

Questions pertaining to the work domain consisted of agriculture teachers' actual time invested in work (weekend hours per month and work hours per regular work week), preferred time invested in work, time congruence (difference between actual and preferred work hours), salary, years of teaching experience, number of agriculture teachers per school, average number of students per class, agriculture teachers' personal leave history including whether they had taken an extended leave and for how long,

whether they were certified to teach agriculture through a university licensure program or not, agriculture teaching assignment (part-time or full-time agriculture), and the location of the worksite school (urban, suburban and rural). Whether agriculture teachers had taken an extended leave from teaching, certification/licensure program were dichotomous variables. Location of school and salary were categorical variables. However, urban and suburban were combined for the regression analyses, leaving location of school worksite a dichotomous variable. Actual time invested in work, preferred time invested in work, time congruence, years of teaching experience, number of agriculture teachers per school, average number of students per class, and length of extended leave from teaching (years) were continuous variables.

Perceptions and Attitudes of Work and Family

Work role and family role salience were measured using the two six-item scales adopted from Noor (2004). Participants rated each item on a six-point scale (from 1 = *strongly disagree* to 6 = *strongly agree*), with higher scores indicating higher salience. Sample items included “my personal life goals are work-oriented” (or family oriented), and “the major satisfaction in my life comes from work” (or family). Both the work role salience scale and the family role salience scale were identical and only the words work and family were changed in each scale. The work role salience and family role salience scales have been tested for reliability with Cronbach’s alphas ranging from .76 to .78 for work role salience and .77 to .79 for family role salience (Chang, Shen, & Chi, 2014; Noor, 2004).

Agriculture teachers' perceived family-supportive work culture was measured using items from the manager and co-worker support and family-supportive culture section of Harrington, Deusen, and Humberd's (2011) study, and adapted for purposes of this research. Participants rated each of the six items on a six-point scale (from 1 = *strongly disagree* to 6 = *strongly agree*), with higher scores indicating a more family-supportive work culture. Sample items included "my administration really cares about the effects that work demands have on my personal life," "I feel comfortable sharing my family issues with colleagues," and "the school and district policies where I work support teachers that have family obligations."

Work Family Conflict Factors

Time-based work-family conflict (WFC) was measured using the six-item time-based subscale of the work family conflict scale (WFCS; Carlson et al., 2000). The WFCS is designed to assess *work interference with family* (WIF) and *family interference with work* (FIW). The WFCS as designed by Carlson et al. (2000) is divided up into three subscales for each of the two conflict scales (WIF and FIW), which assess the three forms of conflict (time-based, strain-based, and behavior-based). Carlson et al. (2000) noted that this measure provides the researcher the flexibility to measure each of the six dimensions of conflict individually or to collapse the subscales into higher order dimensions. Because this study focused on time-based conflict, only the six item measure (three items for WIF and three items for FIW) of time-based conflict was utilized. Participants rated each item on a six-point scale (from 1 = *strongly disagree* to 6 = *strongly agree*), with higher scores indicating greater conflict. Sample items for the

WIF construct included “My work keeps me from my family activities more than I would like” and “I have to miss family activities due to the amount of time I must spend on work responsibilities.” Sample items for the FIW construct included “The time I spend on family responsibilities often interfere with my work responsibilities” and “The time I spend with my family often causes me not to spend time in activities at work that could be helpful to my career.” The WFCS has been used extensively in research and has been found to be reliable and valid (Bruck et al., 2002; Carlson et al., 2000; Fu & Shaffer, 2001; Ogunbamila, 2014; Viera, Lopez, & Matos, 2013). Carlson et al. (2000) reported internal consistency reliabilities for each subscale ranged from .76 to .89.

Teacher Turnover Intentions

Agriculture teachers’ turnover intentions were measured using items from the teacher questionnaire of the 2011-2012 School and Staffing Survey (NCES, 2014), the 2012-2013 Teacher Follow-up Survey (NCES, 2014), and the attrition risk assessment instrument (Lemons, 2013). One four-item measure was used to determine agriculture teachers’ intent to exit the teaching profession before retirement. Participants rated items on a six-point scale (from 1 = *strongly disagree* to 6 = *strongly agree*). Higher scores on the teacher turnover intentions scale indicate more intention to leave the profession early.

Specific reasons for which agriculture teachers were likely to leave the agriculture teaching profession before retirement were measured by asking participants “I would likely leave my current job as an agriculture teacher...” followed by a list of twenty factors. These factors were derived from literature on teacher turnover and from the teacher questionnaire of the SASS (Chaney, 2007; Foster, 2001; Ingersoll, 2001;

Macdonald, 1999; Tippens et al., 2013) and modified for this study. Participants rated items on a six-point scale (from 1 = *strongly disagree* to 6 = *strongly agree*). Higher scores for each item indicate the likelihood of turnover for a specific reason. Sample reasons for turnover included “for early retirement,” “to accommodate my spouse’s career,” for parenthood responsibilities (i.e. rearing children), “because of poor salary” and “for a more desirable job opportunity.”

Pilot Test, Validity, and Reliability

I conducted a pilot study on secondary Career and Technical Education (CTE) teachers of Industrial and Engineering Systems in Oregon using the online questionnaire. The online questionnaire was distributed to teachers via email. The results from the pilot test were used to determine construct reliability and to make minor adjustments to the final instrument.

A panel of experts consisting of doctoral students in the College of Education and professors in the College of Agriculture examined and critiqued the instrument for content and face validity, and overall quality. Additionally, constructs and measures used in the instrument were derived from previously established scales and measures from the literature.

Construct reliability estimates for each construct in the instrument were calculated from the pilot test (see Table 1). Since the survey instrument was administered only once, Cronbach’s alpha coefficients were used for the reliability estimates. According to Nunnally & Bernstein (1994), reliability estimates should meet or exceed an alpha of .70

to be considered reliable. All of the constructs in this study's instrument exceeded the alpha of .70.

Table 1

Construct Reliability Estimates of the Survey Instrument from Pilot (n = 30)

Instrument Construct	Cronbach's α
Work salience	.83
Family-supportive work culture	.80
Family salience	.89
Work interference with family (WIF)	.92
Family interference with work (FIW)	.84
Turnover intentions	.88

Data Collection

I invited a selection of randomly sampled agriculture teachers to participate in this study through electronic communication. I followed Dillman's (2007) recommended tailored design method to collect data from participants. To increase response rate, the survey was incentivized by offering a drawing for gift cards in the amounts of \$100, \$50, and \$25 for participants completing the survey. I sent a pre-notice email message (Appendix B) to all teachers in the sample inviting them to participate in the survey. Three days after sending the pre-notice to participants, I distributed an email to participants consisting of a cover letter – which also served as the consent agreement (Appendix C) – and a link to the survey instrument. Two weeks following the

distribution of the survey, I sent a follow-up notice (appendix D) to those potential participants who had not yet responded. Another follow-up notice was sent ten days later. One week later, I sent the final follow-up notice to participants who had not yet responded.

The population parameters for this study consisted of secondary agriculture teachers in the United States during the 2014-2015 school year who self-identified as being participants in a family role. Participation in a family role was broadly defined for the participants in the survey as, “any and all committed relationships that might influence how time is invested in the non-work domain.” Two questions were used in the survey instrument to collect information and to determine if respondents would be included within the population parameters. The first question to determine if respondents participated in the family role was, “Do you consider yourself to be in a committed relationship that influences how you invest your time outside of work?” followed by two response options: “yes” and “no.” A total of 30 participants indicated they did not consider themselves to be participants in a family role.

The second question to determine if respondents were considered agriculture teachers was, “Please select the statement that best describes your work situation,” followed by the following four choices: “I have a full-time teaching assignment to teach agriculture,” “I have a full-time teaching assignment which consists of teaching courses that are not considered agriculture (Please indicate which courses you teach that are not considered agriculture courses below,” “I do not have a full-time teaching assignment, but do teach at least one agriculture class (e.g. part-time),” and “I do not teach any

agriculture classes.” Participants who responded to the first three statements were considered to meet the population parameter of being an agriculture teacher, while participants responding to the final statement were not. A total of four participants reported not teaching any agriculture courses.

Respondents who did not meet the population parameters (secondary agriculture teacher and self-reported family role participation) were excluded from analysis. In total, 34 participants did not meet the population parameters for the study and a total of 75 participants’ emails “bounced.” Therefore, these participants were removed from the database prior to analysis, and I considered this to be frame and coverage error.

Response Rate

After making these adjustments, 237 surveys were collected. Due to excessive amounts of missing data from some respondents, only 234 usable surveys were collected out of 667 total potential participants, yielding a response rate of 35.08% ($n = 234$). The first email distribution of the survey resulted in 174 responses. Two weeks following the distribution of the survey, I sent a follow-up notice to those potential participants who had not yet responded, which resulted in 57 responses. I sent another follow-up notice ten days later, which resulted in 22 responses. One week later, the final follow-up notice was sent to participants who had not yet responded. The final follow-up email resulted in 13 responses.

According to Lindner et al. (2001) and Miller and Smith (1983), the ideal method to deal with non-response bias is to contact non-respondents by telephone in order to collect non-respondent data. However, because the sample frame only included email

addresses of participants, contacting them via telephone was not an option. Linder et al. (2001) suggested the next best option is to use late respondents' data. They recommended late respondents be operationally defined as those who respond after the final follow-up stimulus. If there is not a sufficient number of respondents from the last follow-up stimulus, Linder et al. (2001) suggested including the final two follow-up stimuli. Because only 13 participants responded after the final stimulus, I included the final two follow-up stimuli. In this study, 35 participants responded following the final two reminders. An independent samples *t*-test and crosstabs were used to check for non-response error by comparing participants who responded after the final two follow-up reminders (late respondents; $n = 35$) and those who responded prior to the final two reminders (on-time respondents; $n = 199$) for the variables of interest (Lindner et al., 2001; Miller & Smith, 1983). The variables of interest included age, marital status, number of children, age of children, weekly work hours of spouse/partner, family salience, actual work hours per work week, actual weekend work hours per month, salary, number of agriculture teachers per school, years of teaching experience, average number of students per class, location of worksite school, perceived family-supportive work culture, work salience, WIF, FIW, and turnover intentions. I found no statistical differences between on-time and late respondents for all of the variables of interest (p -value $> .05$). Therefore, I considered non-response error to be insignificant to this study (Lindner et al., 2001; Miller & Smith, 1983).

Human Subject Approval

Prior to collecting data, I submitted a proposal to the IRB office consisting of the initial application and protocol, data collection instrument, and all letters to be sent to participants. I followed IRB regulations and ethical research procedures to ensure no physical, emotional, or psychological harm would be inflicted upon the participants. I followed IRB protocols to insure confidentiality of participant information and responses.

Data Analysis

The data, collected through Qualtrics™, were downloaded into the Statistical Package for Social Science (SPSS) version 20.0 for analysis. Those who indicated they were not agriculture teachers or did not participate in a family role as defined in the survey instrument were removed from the data.

Data Transformation

The raw data in SPSS were transformed in a systematic way in order to analyze the data according the research questions for this study. I clarified each variable by running frequency counts, checking and coding for missing values, and labeling variables and values. All missing data was coded as missing so that analyses would not recognize missing data as data points. I also changed, rearranged, and consolidated values of existing variables by recoding variables (e.g. reverse coded items or consolidating scaled data into categorical data) as needed. I created new numeric variables and modified values of existing variables through computations (e.g. computing items into constructs). Using frequency counts and the “list” command in the SPSS syntax, I checked and confirmed accuracy of each data transformation strategy I used. To ensure a record of all

data analyses, all data transformation and analyses performed in SPSS were copied to or carried out directly in the SPSS syntax file, which was saved in conjunction with the working SPSS data file.

Meeting Statistical Assumptions

Before conducting data analyses, I explored the assumptions of parametric data as well as the specific assumptions of regression analyses. Regarding the assumptions of parametric data, I found the variances to be the same throughout the data and the data to be independent. However, three variables (actual weekly work hours, actual weekend work hours per month, work hours of spouse/partner) did not meet the assumption of normality, and required special attention before data analysis could be conducted.

The issue of normality existed among the variables due to extreme outliers. To deal with this issue, I trimmed and replaced outlier values with the value of the most extreme response, a method called the semi-Winsorized approach (Guttman & Smith, 1969; Moyer & Geissler, 1991). According to Guttman and Smith (1969), Winsorized means are robust estimators of the population mean that are insensitive to outlying values. Moyer and Geiser (1991) suggest that “1% of the data should be replaced to avoid excessive bias” (p. 269). Using these recommendations, I trimmed and replaced extreme outlier values and found the transformed data to be normally distributed.

Although the transformed data met the assumptions of parametric data, it needed to also meet the assumptions of regression. I checked for the assumptions of variable types, non-zero variance, no collinearity between independent variables, homoscedasticity, independent and normally distributed error, and linearity between

predictor and outcome variables. I found the data met all of the assumptions of regression except for no collinearity. According to many (Belsley, Kuh, & Welsch, 1980; Field, 2009; Hair, Black, Babin, Anderson, & Tatham, 2006), when predictor variables correlate higher than .80 or .90, collinearity exists. In the present study, relationships between two variables produced correlation coefficients higher than .80. These two relationships included 1) age of child and respondent's age ($r = .86$), and 2) years of teaching experience and respondent's age ($r = .85$).

To deal with the issue of collinearity, I entered all of the independent variables into the two regression models (WIF and FIW as dependent variables) and examined the multicollinearity diagnostics. The variance inflation factor (VIF) for all predictor variables in the two models were below 3.0, except age, with the average VIF of about 1.0. Additionally, I examined the tolerance factor for all the independent variables and found all predictor variables, except age, to be above .30. Therefore, I omitted age from the regression analysis (Hair et al., 2006).

As indicated in Figure 4, descriptive statistics were used to analyze questions 1 through 4. Correlational statistics including multiple linear regression were utilized to analyze research questions 5 through 7.

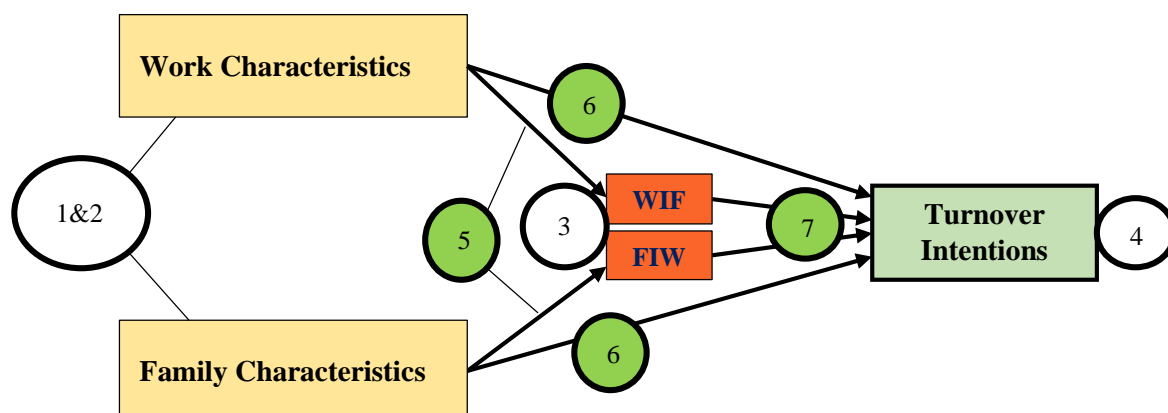


Figure 4. Graphical display for the analysis of research questions as related to the conceptual framework.

Analyses for each question and hypotheses were as follows:

Question #1: What are the demographic characteristics of agriculture teachers (personal, work, and family) and how do they differ by sex?

Descriptive statistics were used to determine the personal, work, and family domain characteristics of agriculture teachers. I utilized frequencies, percentages, means, and standard deviations to report the findings for the different characteristics. Where applicable, I performed independent samples *t*-tests and Chi-square tests to determine the differences between male and female respondents. For significant differences, effect sizes were measured and reported using appropriate statistical measures.

Question #2: What are the perceptions and attitudes of agriculture teachers toward the work and family domains?

Descriptive statistics were used to determine perceptions and attitudes of agriculture teachers toward the work and family domain, which included three different constructs: family salience, work salience, and perceived family-supportive work culture. I reported means and standard deviations for males, females, and total respondents for

each of the three constructs. Independent samples *t*-tests were performed to determine if any differences existed between male and female respondents for family salience, work salience, and perceived family-supportive work culture.

Question #3: To what degree do agriculture teachers experience WFC, and how does it differ by sex?

WFC was analyzed as two separate continuous variables. Means and standard deviations were reported for the WIF and FIW constructs. Data were parsed and reported by sex so that male and female agriculture teachers could be compared. I performed independent samples *t*-tests to determine if any differences existed between male and female respondents for FIW and WIF.

Question #4: What are agriculture teachers' turnover intentions, and how do they differ by sex?

I reported means and standard deviations for agriculture teachers' turnover intentions. Data were compared by sex using independent samples *t*-tests to determine any differences that existed between male and female agriculture teachers. Additionally, respondents indicated reasons for which they were likely to leave teaching. These results were analyzed and reported using means and standard deviations, parsed by sex, and reported in rank order.

Question #5: What is the relationship between work and family domain characteristics and WFC?

Two multiple linear regression analyses using a forced entry (enter) method were performed to determine which work and family characteristics were related to WFC. Because little research exists in agricultural education regarding predictor variables and

their order of importance in predicting work-family conflict and turnover intentions, this research was exploratory in nature. Therefore forced entry method of multiple linear regression was more appropriate than stepwise or hierarchical methods. Some argue that forced entry is the only appropriate method of regression analysis because stepwise techniques are influenced by variation in the data, resulting in inconsistent results which are not replicable if the model is retested (Field, 2009; Studenmund & Cassidy, 1987).

The dependent variables in the regression analyses were WIF and FIW. The independent variables entered into the regression analyses consisted of family and work domain factors. Because studies have found the crossover influence of family factors on WIF, and work factors on FIW, are only indirectly related, or mediated, by the effects of WFC, it is recommended to test the more direct effect of work characteristics on WIF and the family characteristics of FIW (Beutell & Wittig-Berman, 1999; Frone et al., 1999; Major et al., 2002). Therefore, family characteristics were entered as predictor variables of FIW while work characteristics were entered as predictor variables of WIF. Sex was also entered into the regression analyses to determine the magnitude of its simultaneous effect on WFC and to predict a more accurate model of WFC.

A total of four family domain variables were included in the regression analyses to predict FIW. These variables included number of children, age of children, weekly work hours of spouse/partner, and family salience. Marital status, adult caregiving responsibility, and work status of spouse/partner were not included in the regression analyses because of small numbers for statistical power (non-married, $n = 14$; “yes” for adult caregiving responsibility, $n = 17$; and “yes” for spouse/partner working outside the

home, $n = 21$). Parental status was not included because of its close tie to the variable number of children.

A total of nine work domain variables were included in the regression analyses to predict WIF which consisted of actual work hours per work week, actual weekend work hours per month, salary, number of agriculture teachers per school, years of teaching experience, average number of students per class, location of worksite school, perceived family-supportive work culture, and work salience. Extended leave from teaching history, certification program, and agriculture teaching assignment were not included due to lack of theoretical basis or literature to support the inclusion of such variables.

Age was not included in the analyses because of its high correlation with the years of teaching and age of child variables. Ethnicity was not included in the analyses because of the small number of non-white respondents ($n = 11$) for statistical power. Sex was the only personal demographic variable entered, which was entered into both regression analyses.

Question #6: What is the relationship between work and family domain characteristics and agriculture teachers' turnover intentions?

One forced entry multiple linear regression analysis was performed to determine the influence of work and family domain characteristics on turnover intentions of agriculture teachers. The nine work characteristics, four family characteristics, and one personal characteristic (sex) used as predictor variables from research question #5 were entered into the regression analysis simultaneously. I calculated and reported betas, standardized betas, and overall R^2 for the regression.

A total of 14 variables were entered into the two regression analyses. According to Green (1991), to ensure stability and sufficient power when testing a model, a minimum sample size of $50 + 8k$ is recommended (where k is the number of predictors). Furthermore, Green (1991) suggested when testing individual predictors, the minimum acceptable sample size should be $104 + k$. With 14 variables entered, the minimum acceptable sample size was 162 respondents to test a model, and 118 to test individual predictors. Therefore, a minimum of 162 cases of data were required for this regression analyses. Betas, standardized betas, and overall R^2 were calculated and reported for each of the two regression analyses performed.

Question #7: What is the relationship between WFC and agriculture teachers' turnover intentions?

I performed a forced entry multiple linear regression to determine the influence of WFC on turnover intentions of agriculture teachers. The predictor variables included in the analysis were WIF, FIW, and sex. Betas, standardized betas, and overall R^2 were calculated and reported for each regression analysis performed.

CHAPTER 4: RESULTS

The purpose of this study was to describe and determine the relationships between work and family domain characteristics, work-family conflict (WFC), and turnover intentions of agriculture teachers in the United States. An additional focus of this study was to determine the reasons for which agriculture teachers would likely leave the profession. The population for this study consisted of a simple random sample of agriculture teachers during the 2014-2015 school year and who self-identified as being participants in a family role. This study was guided by the following research questions, sub-questions, and hypotheses:

1. What are the demographic characteristics of agriculture teachers (personal, family, and work) and how do they differ by sex?
2. What are the perceptions and attitudes of agriculture teachers toward their own work and family domains?
3. To what degree do agriculture teachers experience WFC, and how does it differ by sex?
4. What are agriculture teachers' turnover intentions, and how do they differ by sex?
 - a. What are agriculture teachers' turnover intentions?
 - b. For what reasons are agriculture teachers most likely to leave the profession?
 - c. How do agriculture teachers' turnover intentions differ by sex?
5. What is the relationship between work and family domain characteristics and WFC?

- a. What is the relationship between work domain characteristics and WIF?

- *H₀: There is no relationship between agriculture teachers' work domain characteristics and WIF.*

- b. What is the relationship between family domain characteristics and FIW?

- *H₀: There is no relationship between agriculture teachers' family domain characteristics and FIW.*

6. What is the relationship between work and family domain characteristics and agriculture teachers' turnover intentions?

- *H₀: There is no relationship between agriculture teachers' work and family domain characteristics and turnover intentions.*

7. What is the relationship between WFC factors and agriculture teachers' turnover intentions?

- *H₀: There is no relationship between WFC factors and agriculture teachers' turnover intentions.*

Research Question # 1

The first research question was designed to identify the personal, family, and work characteristics of the population. Questions included demographic information about each agriculture teachers' personal, work, and family domains.

Teacher Personal Characteristics

Questions about agriculture teachers' personal characteristics included sex, age, ethnicity, and life role participation. Of the respondents, 39% were female and 58% were male, with 3% declining to respond. Figure 5 represents the percentages of female and male respondents in the study.

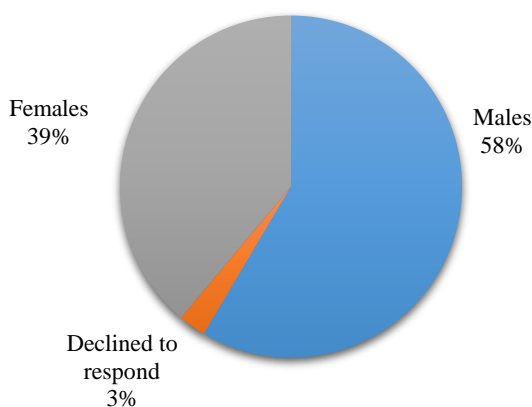


Figure 5. Sex of secondary agriculture teacher respondents ($n = 234$)

Participant ages ranged from 22 to 69 years old. For ease of reporting, these ages were grouped into six intervals based upon the range of ages. Table 2 shows the breakdown of respondents by age group. The mean age was 40.26 with a standard deviation of 11.72. Over 31% of the participants were younger than age 35, while less than 1% were age 65 or older. When comparing males to females, female agriculture teachers tended to be of younger age than their male counterparts. Only 14% of females were age 45 or older, whereas 52% of males were 45 or older. Conversely, nearly 64% of females were younger than 35 years old while only 21% of males were younger than

age 35. Six respondents declined to respond. Table 2 shows the breakdown of participants by age and sex.

Table 2

Distribution of Age for Respondents by Sex (n = 227)

Age of Respondent	Female		Male		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Total	91	40.08	136	59.91	227	100.00
Under 25	13	14.29	3	2.20	16	7.05
25-34	45	49.45	26	19.12	71	31.28
35-44	20	21.98	36	26.49	56	24.67
45-54	7	7.69	42	30.88	49	21.59
55-64	5	5.49	29	21.32	34	14.98
65 and older	1	1.10	0	0.00	1	0.44

The majority of respondents (93.4%) self-identified as “White, European American, Non-Hispanic.” Hispanic or Latino American was the next highest reported ethnicity with only 1.8%. Four (1.8%) participants declined to respond. There were no participants who reported their ethnicity to be “Middle Eastern or Middle-Eastern American” or “North African or North African-American.” Table 3 shows the breakdown of ethnicity of the respondents.

Participants were asked to select from a list of statements regarding the question, “besides ‘teacher,’ what other life roles do you actively participate in?” The roles of spouse and parent were the most commonly selected responses among all participants while student and coach were the least selected roles. When examining the rank order of roles by frequency, there was no difference between male and female agriculture teachers

in rank order. Table 4 shows a breakdown of respondents' participation in other life roles besides teaching. Respondents also were given an open ended prompt in which they could list out other life roles they participate in besides teaching. Other life roles in which the participants indicated they participated include caregiver for elderly or special needs adults, volunteer emergency personnel, horse trainer or riding instructor, referee or sports team member, researcher, actor, and adjunct college instructor.

Table 3

Ethnicity of Respondents (n = 228)

Ethnicity of Respondent	<i>f</i>	%
White, European American, Non-Hispanic	213	93.42
Hispanic or Latino American	4	1.75
American Indian or Alaska Native	3	1.32
Black, African American, Non-Hispanic	2	0.88
Pacific Islander, Asian, or Asian American	2	0.88
Decline to respond	4	1.75

Table 4

Respondents' Active Participation in Other Life Roles (n = 228)

Life Roles of Respondents	Female		Male		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Spouse (e.g. husband, wife, widowed)	78	85.71	123	89.78	201	88.16
Parent (e.g. mother, father)	57	62.64	116	84.67	173	75.88
Church member (e.g. volunteer)	52	57.14	94	68.61	146	64.04
Community leader (e.g. civic leader)	39	42.86	79	57.66	118	51.75
Employee/ manager/ owner (e.g. farmer)	28	30.77	58	42.34	86	37.72
Coach- non Ag. Ed. (e.g. athletics)	21	23.08	34	24.82	55	24.12
Student	16	17.58	24	17.52	40	17.54
Total	91	39.91	137	60.09	228	100.00

Family Domain Characteristics

Questions pertaining to family domain characteristics consisted of marital status, caregiving responsibility, parental status, number of children, ages of children, work status of spouse/partner, and the number of spouse/partner's weekly work hours. Among the respondents, 93% were currently married, while nearly 7% were either widowed, divorced, separated, or never married. Participants who were not married were likely to indicate they were not participants in a family role, and therefore, were omitted from analysis because they did not meet the population parameters of this study. Therefore, the 93% of married participants, may not be representative of the population of agriculture teachers across the country. When comparing marital status for males and females, both were similar $\chi^2(1) = 0.87, p = .352$. Table 5 shows the family domain demographic characteristics of respondents by sex.

Regarding primary caregiving responsibility for elderly or special needs adults, 7.6% of the responding agriculture teachers in this study reported they did have responsibilities to care for an adult compared to 92.4% who did not. Males (10.4%) were significantly more likely to have responsibility as an adult caregiver than females (3.3%); $\chi^2(1) = 4.39, p = .036$. Teachers' sex had a small (Cohen, 1988) effect size on adult caregiving responsibilities ($\phi = .13$). Table 5 shows the breakdown of agriculture teachers who reported having adult caregiver responsibilities.

Table 5

Comparison of Family Domain Characteristics of Respondents by Sex

Characteristic	Female		Male		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Marital (<i>n</i> = 207)						
Married	72	91.14	121	94.53	193	93.24
Unmarried	7	8.86	7	5.47	14	6.76
Adult caregiving responsibility (<i>n</i> = 225)						
Yes	3	3.30	14	10.45	17	7.56
No	88	96.70	120	89.55	208	92.44
Parental status (<i>n</i> = 216)						
Have children	56	62.92	100	78.74	156	72.22
No children	33	37.08	27	21.26	60	27.78
Work status of spouse/partner (<i>n</i> = 192)						
Works outside the home	68	94.44	103	85.83	171	89.06
Does not work outside the home	4	5.56	17	14.17	21	10.94

Among the respondents, 71% reported having parental or caregiving responsibilities for children. When comparing by sex, 78.7% of male agriculture teachers reported parental or caregiving responsibilities for children compared to 62.9% of female teachers. Of those teachers who did have childcare responsibilities, the largest proportion had two children (29.6%) followed by one child (17.6%) and three children (15.3%). The number of children for which respondents were parents or caregivers ranged from one to six. The mean number of children for which respondents reported having responsibility was 1.67 ($SD = 1.42$) (see Table 6). Males reported having significantly more children than females $t(214) = 3.86, p = <.001$. Teachers' sex was found to have a medium

(Cohen, 1988) effect size (Becker, 2000) on the mean number of children (Cohen's $d = .54$).

Table 6

Comparison of Family Domain Characteristics of Respondents by Sex

Characteristic	Female		Male		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Number of Children ($n = 216$)	1.24	1.23	1.97	1.46	1.67	1.42
Ages of Children ($n = 161$)	7.88	7.07	12.71	8.57	11.03	8.38
Spouse/partner work hours/week ($n = 167$)	50.45	13.59	40.91	12.51	44.74	13.74

The ages of children for which agriculture teachers reported responsibility ranged from one to 35 years old. The mean age for the children of all the respondents was 11.03 ($SD = 8.38$). Table 6 shows the mean age for children was greater for male respondents ($M = 12.71$, $SD = 8.57$) than for female respondents ($M = 7.88$, $SD = 7.07$). This difference between male and female respondents was statistically significant, $t(159) = 3.61$, $p = <.001$. Teachers' sex yielded a small (Cohen, 1988) effect size (Becker, 2000) on the age of children (Cohen's $d = .20$). The ages of the respondents' children were grouped into five intervals based upon the range of ages for ease of reporting. Table 7 shows the breakdown of participants' children into the age groups.

Table 7

Comparison of the Distribution of Ages of Respondents' Children by Sex

Ages of Children	Female		Male		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
1-3 years old	30	48.39	32	51.61	62	24.03
4-7 years old	15	33.33	30	66.66	45	17.44
8-12 years old	15	27.27	40	72.73	55	21.31
13-18 years old	15	31.25	33	68.75	48	18.60
Over 18 years old	9	18.75	39	81.25	48	18.60
Total	84	32.56	174	67.46	258	100.00

Note. For children younger than one year old, respondents were asked to round up to 1 year old.

When looking at the work status of respondents' spouse/partner, 89.1% reported their spouse or partner worked outside of the home, while only 10.9% did not (see Table 5). Of those teachers who reported their spouse or partner to work outside the home, the majority worked more than 20 hours per week. The number of weekly hours worked by the spouse or partner of agriculture teachers ranged from 10 to 80. The mean number of weekly work hours by the spouse/partner of agriculture teachers was 44.74 ($SD = 13.74$) (see Table 6). When comparing spouse/partner's working characteristics by gender, the majority (94.4%) of spouse/partners of female agriculture teachers worked outside the home whereas only 85.8% of spouse/partners of male agriculture teachers worked outside

the home. The mean weekly hours worked outside the home by female agriculture teachers' spouse/partner ($M = 50.45$, $SD = 13.59$) was statistically greater than spouses/partners of male agriculture teachers ($M = 40.91$, $SD = 12.51$), $t(165) = 4.66$, $p = <.001$. Teachers' sex yielded a large (Cohen, 1988) effect size (Becker, 2000) on spouse/partner work hours per week (Cohen's $d = .73$). The weekly work hours of agriculture teachers' spouses/partners were grouped into four intervals based upon the range of weekly work hours for ease of reporting. The majority of teachers' spouse/partners worked more than 40 hours per week. Table 8 shows the breakdown of weekly work hours of participants' spouses/partners into groups.

Table 8

Distribution of Weekly Work Hours of Respondents' Spouse/Partner by Sex

Weekly Work Hours of Spouse/Partner	Female		Male		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
19 or less hours/week	2	2.99	6	6.00	8	4.79
20-29 hours/week	1	1.49	11	11.00	12	7.19
30-39 hours/week	2	2.99	8	8.00	10	5.99
40 or more hours/week	62	92.54	75	75.00	137	82.04
Total	67	40.1	100	59.9	167	100.00

Work Domain Characteristics

Questions pertaining to participants' work domain characteristics consisted of time invested in work, congruence between actual and preferred time invested in work, salary, years of teaching experience, number of agriculture teachers per school, average

number of students per class, personal leave history, teacher certification route, agriculture teachers' teaching assignment, and the location of the worksite school.

Participants were asked to indicate how many hours they invest in their teaching job during a regular work week (Monday through Friday). Responses ranged from 21 to 85 hours per week. The mean number of hours invested in the teaching job by agriculture teachers during a regular work week was 55.77 ($SD = 10.34$) (see Table 9). When comparing the number of hours invested in the teaching job by sex, females reported working more hours per week ($M = 57.13$, $SD = 8.23$) than males ($M = 54.82$, $SD = 11.52$). However, there were no statistical differences between males and females for regular weekly work hours $t(220) = 1.64$, $p = .102$. A breakdown of actual weekly work hours by sex is displayed in Table 10.

Table 9

Comparison of Actual and Preferred Work Hours per Week of Respondents

Time Invested in Work	Female ($n = 91$)		Male ($n = 131$)		Total ($n = 222$)	
	M	SD	M	SD	M	SD
Actual work hours per regular work week	57.13	8.23	54.82	11.52	55.77	10.34
Preferred work hours per regular work week	43.70	6.47	42.87	10.14	43.20	8.83
Time congruence for work hours per regular work week	13.43	9.27	11.70	8.52	12.41	8.86

Table 10

Distribution of Agriculture Teachers' Actual Weekly Work Hours by Sex

Time Invested in Work per Work Week	Female		Male		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
0-30 hours	0	0.00	7	5.34	7	3.15
31-40 hours	2	2.20	2	1.53	4	1.80
40-50 hours	27	29.67	44	33.59	71	31.98
50-60 hours	43	47.25	51	38.93	94	42.34
60-70 hours	15	16.48	24	18.32	39	17.57
71 or more hours	4	4.40	3	2.29	7	3.15
Total	91	40.99	131	59.01	222	100.00

In addition to indicating how many hours they actually invested in their teaching job, participants were asked to indicate how many hours they would prefer to invest in their teaching job during a regular work week. Responses ranged from zero to 62 hours per week. The mean number of agriculture teachers' preferred work hours during a regular work week was 43.2 ($SD = 8.83$) (see Table 9). When comparing the mean number of preferred work hours during a regular work week by sex, males and females were very similar, $t(222) = 0.76$, $p = .450$, but both indicated a preference to work more hours than a standard work week. A breakdown of actual and preferred weekly work hours by sex is displayed in Table 11.

Table 11

Distribution of Agriculture Teachers' Preferred Weekly Work Hours by Sex

Preferred Time Invested in Work per Work Week	Female		Male		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
0-40 hours	47	51.65	61	46.56	108	48.65
More than 40 hours	44	48.35	70	53.44	114	51.35
Total	91	40.99	131	59.01	222	100.00

A measure of time congruence was calculated by calculating the differences between how many hours participants actually invested in their job and the number of hours they prefer to invest in their job. A mean difference of 0.00 would indicate perfect congruence between actual hours invested in the teaching job and the preferred number of hours invested. The larger the difference, the less congruence between actual and preferred number of hours invested. Because the calculation subtracts preferred hours from actual hours invested, negative numbers indicate a preference to work more hours than actually worked, whereas positive numbers indicate more hours actually invested than preferred. Overall, the mean difference between participants' actual and preferred work hours during a regular workweek was 12.41 ($SD = 8.86$) (see Table 9). This positive number indicates agriculture teachers actually invested 12.41 more hours per regular work week in their teaching jobs than they preferred to invest. Males had a higher positive mean than females for workweek time congruence, indicating less congruence between the actual amount of hours they invest in work during a regular work

week and the amount of hours they would prefer to work. However, the difference between male and female time congruence was not significant; $t(220) = 1.43, p = .154$.

In addition to number of work hours during the regular work week, participants were asked to indicate how many weekend hours per month they invested in their teaching job during the regular school year. Responses ranged from zero to 61 hours per month. The mean number of weekend hours invested in the teaching job per month during the regular school year was 18.07 ($SD = 14.90$) (see Table 12). When comparing the mean number of weekend work hours per month by sex, females and males were similar $t(220) = 0.14, p = .891$. A breakdown of actual weekend work hours per month by sex is displayed in Table 13.

Table 12

A Comparison of Respondents' Actual and Preferred Weekend Work Hours per Month

Time Invested in Work	Female ($n = 91$)		Male ($n = 131$)		Total ($n = 222$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Actual weekend work hours per month during the school year	18.24	14.62	17.95	15.14	18.07	14.90
Preferred weekend work hours per month during the school year	5.00	6.91	5.74	10.24	5.44	9.03
Time congruence for weekend work hours per month	13.22	11.57	12.40	13.22	12.73	12.56

Table 13

Distribution of Agriculture Teachers' Actual Weekend Work Hours per Month by Sex

Time Invested on Weekends per Month	Female		Male		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
0-10 hours	39	42.86	63	48.09	102	45.95
11-20 hours	30	32.97	34	25.95	64	28.83
21-30 hours	5	5.49	17	12.98	22	9.91
31-40 hours	8	8.79	9	6.87	17	7.66
41-50 hours	2	2.20	3	2.29	5	2.25
51- 60 hours	2	2.20	1	0.76	3	1.35
71 or more hours	5	5.49	4	3.05	9	4.05
Total	91	40.99	131	59.01	222	100.00

Regarding respondents' preferred number of weekend work hours per month, responses ranged from zero to 45 preferred hours per month. The mean number of preferred weekend work hours per month during the regular school year was 5.44 ($SD = 9.03$) (see Table 10). When comparing the number of preferred weekend work hours per month by sex, females preferred working less hours per month ($M = 5.0$, $SD = 6.91$) than males ($M = 5.74$, $SD = 10.24$). However, there were no statistical differences between males and females for preferred weekend work hours per month; $t(218) = -0.60$, $p = .552$. A breakdown of preferred weekend work hours per month by sex is displayed in Table 14.

Table 14

Distribution of Agriculture Teachers' Preferred Weekend Work Hours per Month by Sex

Preferred Time Invested on Weekends per Month	Female		Male		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
No hours	33	36.26	61	46.56	94	42.34
1 or more hours	58	63.74	70	53.44	128	57.66
Total	91	40.99	131	59.01	222	100.00

The mean difference between participants' actual and preferred weekend work hours per month during the regular school year was 12.73 ($SD = 12.56$). Similar to work hours per regular work week, agriculture teachers actually invested more weekend hours per month in their teaching jobs than they preferred to invest. When comparing time congruence for weekend hours per month by sex, females had a higher positive mean than males, indicating less congruence between the actual and preferred amount of weekend hours invested in work during the regular school year. However, the difference between male and female time congruence was not significant, $t(216) = 0.47, p = .639$.

To gain a better understanding of the participants' preferred work hours both during regular week and weekends, I divided these variables into two groups and compared them to see if there were specific identifying features unique to each group. For regular work week hours, the two groups were divided into those who indicated they preferred to work 40 hours or less. For preferred weekend hours per month, the two groups were divided into those who indicated they preferred not to work any weekend

hours per month and those that did. Independent samples *t*-tests and Chi-square tests were performed to determine differences among the groups for personal, work and family characteristics, WIF and FIW, and turnover intentions. For preferred weekend hours per month, I found no statistically significant differences among both groups for all variables, indicating no unique differences among groups. However, among the two groups of preferred work hours per work week there were statistical differences for perceived family-supportive work culture ($t(227) = -2.11, p = .036$), work salience ($t(232) = -2.04, p = .043$), and salary $\chi^2(7) = 18.03, p = .012$.

Teachers were asked to indicate their annual salary. These salaries were grouped into eight intervals based upon the ranges indicated in the survey. Table 15 shows the breakdown of participants into the salary groups. Most of the teachers in this study (78.8%) reported salaries of between \$35,000 and \$75,000. Two teachers reported making less than \$25,000, while twelve teachers reported a salary of over \$85,000. When comparing salary by sex, males reported higher salaries than females. The percentages of the top four salary intervals (\$55,000 and above) were higher for males (55.4%) than females (29.7%), while the percentages of the bottom four salary intervals (under \$55,000) were all higher among females (70.4% as compared to 43% of males).

Table 15

Comparison of the Distribution of Agriculture Teachers' Salaries

Salary Intervals	Female		Male		Total	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Under \$25,000	1	1.10	1	0.74	2	0.88
\$25,000 - \$34,999	7	7.69	9	6.67	16	7.08
\$35,000 - \$44,999	31	34.07	18	13.33	49	21.68
\$45,000 - \$54,999	25	27.47	31	22.96	56	24.78
\$55,000 - \$64,999	10	10.99	26	19.26	36	15.93
\$65,000 - \$74,999	9	9.89	28	20.74	37	16.37
\$75,000 - \$84,999	7	7.69	11	8.15	18	7.96
\$85,000 or more	1	1.10	11	8.15	12	5.31
Total	91	40.3	135	59.7	226	100.00

Table 16

Comparison of Respondents' School and Teacher Characteristics by Sex

Characteristic	Female		Male		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Years of teaching experience ($n = 221$)	8.62	7.60	17.75	10.15	13.99	10.22
Agriculture teachers per school ($n = 220$)	1.89	1.17	2.01	1.40	1.96	1.31
Average number of students per class ($n = 223$)	20.14	8.92	20.22	7.01	20.19	7.83
Length of extended leave from teaching (years) ($n = 22$)	1.70	1.99	6.86	8.22	5.50	7.42

Respondents were asked to report the number of years of teaching experience they possessed. Responses ranged from 1 to 41 years. As Table 16 indicates, the mean number of years of teaching experience among agriculture teachers was 13.99 ($SD = 10.22$). When comparing years of teaching experience by sex, females reported

significantly less years of teaching experience ($M = 8.62$, $SD = 7.60$) than males ($M = 17.75$, $SD = 10.15$); $t(218) = -7.65$, $p = <.001$. The difference in years of teaching experience by sex yielded a large (Becker, 2000; Cohen, 1988) effect size (Cohen's $d = 1.00$).

Respondents were asked to report the number of agriculture teachers who were currently teaching at their school. Responses ranged from one to six. The mean number of agriculture teachers per school was 1.96 ($SD = 1.31$) (see Table 16). When comparing the number of agriculture teachers per school by sex, males reported having more agriculture teachers per school ($M = 2.01$, $SD = 1.40$) than females ($M = 1.89$, $SD = 1.17$). However, there were no statistical differences between males and females for number of agriculture teachers in the school; $t(218) = -0.61$, $p = .540$.

Respondents were asked to report the average number of students per class they taught at their school. Responses ranged from 3 to 40 students per class. The mean number of students per class was 20.19 ($SD = 7.83$) (see Table 16). When comparing number of students per class by sex, there was no difference between female ($M = 20.14$, $SD = 8.92$) and male ($M = 20.22$, $SD = 7.01$) agriculture teachers; $t(221) = -0.07$, $p = .943$.

Respondents were asked to report if they had ever taken a leave from teaching for an extended period of time, and if so, for how long. Additionally respondents were asked to provide an open response regarding the reason for taking the leave from teaching. Among the respondents, 22 (9.7%) reported taking a leave from teaching for an extended period of time. Of those who reported taking a leave from teaching, 14 (10.3%) were

male while 8 (8.8%) were female. The length of time in which respondents reported taking a leave from teaching ranged from one to 24 years. The mean length of time in which respondents reported taking a leave from teaching was 5.5 years ($SD = 7.42$) (see Table 16). When comparing the length of time for extended leave by sex, male ($M = 6.86$, $SD = 10.15$) teachers took significantly more time away from teaching than females ($M = 1.70$, $SD = 1.99$); $t(16) = -2.18$, $p = .045$. Teachers' sex yielded a large (Cohen, 1988) effect size (Becker, 2000) on length of time away from teaching (Cohen's $d = .71$). The most common reasons for which respondents took a leave from teaching for an extended period of time included pursuit or exploration of another career ($n = 7$, 31.8%), maternity leave ($n = 5$, 22.7%), to care for children/be with family ($n = 3$, 13.6%), and unsatisfied/burned out/needed a break ($n = 3$, 13.6%). Other responses included sabbatical leave, firing, job relocation, and spouse's career. Although it was a very small sample of respondents who reported they had left teaching for an extended period of time, it is important to note that every respondent who reported leaving for the pursuit of another career ($n = 7$) was male, while every respondent who reported leaving for maternity leave or to care for children/be with family were female ($n = 6$). Additionally, every respondent who reported leaving because they were unsatisfied, burned out, or needed a break were male ($n = 3$).

Participants were asked to select if they were certified to teach agriculture through a university teacher licensure program. Among the respondents, 85.8% reported agriculture teacher certification through a university teacher licensure program. When comparing teacher certification by sex, 91.1% of males were certified through a

university teacher licensure program, compared to 78% of females. The difference between male and female agriculture teachers' certification route was statistically significant; $\chi^2(1) = 7.51, p = .006$. The difference in the type of teacher certificate earned by sex yielded a small (Cohen, 1988) effect size ($\phi = .18$).

Respondents were asked to identify their teaching assignment. Of the respondents, 87.7% indicated they had a full-time teaching assignment to teach agriculture classes. Ten percent indicated they had a full time teaching assignment which consisted of both agriculture courses as well as courses not considered to be agriculture. 2.2% of respondents reported not having a full-time (e.g. part-time) agriculture teaching assignment, but taught at least one agriculture class. When comparing work situation by sex, percentages for males and females were similar in all three categories; $\chi^2(2) = 0.09, p = .763$.

Respondents were asked to identify the type of location in which their workplace school was located. Of the respondents, 10.3% indicated their workplace school was located in an urban setting, 23.2% indicated teaching in a suburban setting, and 66.5% indicated teaching in a rural setting. The percentages of urban, suburban, and rural school sites were very similar between male and female agriculture teachers; $\chi^2(2) = 2.20, p = .333$.

Research Question #2

The second research question was designed to identify the perceptions and attitudes of agriculture teachers toward the work and family domains. Three different constructs were measured, which included family salience, work salience, and family

supportive work culture. Questions elicited information about each agriculture teachers' perceptions and attitudes regarding these three constructs.

Family salience was measured by asking respondents to determine how important or central the family role was in their life. A six-point Likert-type scale was used to measure participants' attitudes of family salience. Overall, agriculture teachers in this study reported high levels of family salience ($M = 5.07$, $SD = 0.78$). When comparing family salience by sex, females reported having slightly higher family salience ($M = 5.10$, $SD = 0.80$) than males ($M = 5.05$, $SD = 0.76$). However, this difference in family salience by sex was not statistically significant $t(224) = 0.55$, $p = .585$.

Work salience was measured by asking respondents to determine how important or central the work role was in their life. A six-point Likert-type scale was used to measure participants' attitudes of work salience. Overall, agriculture teachers in this study reported moderate levels of work salience ($M = 4.05$, $SD = 0.85$). When comparing work salience by sex, females reported having slightly higher work salience ($M = 4.08$, $SD = 0.76$) than males ($M = 4.03$, $SD = 0.89$). However, there were no statistical differences between males and females for work salience $t(226) = 0.39$, $p = .694$.

Participants were asked to report their perception of how supportive of family the workplace culture was where they worked. A six-point Likert-type scale was used to measure participants' perception of the family-supportive work culture. Overall, agriculture teachers in this study reported only a moderate degree of family-supportive work culture ($M = 3.96$, $SD = 0.91$). When comparing the perceived family-supportive work culture by sex, females perceived their workplace to have a slightly more

supportive work culture toward families ($M = 3.99$, $SD = 0.89$) than males ($M = 3.93$, $SD = 0.91$). However, there were no statistical differences between males and females regarding family-supportive work culture $t(224) = 0.49$, $p = .628$.

Research Question #3

The third research question was designed to describe work-family conflict (WFC) of agriculture teachers. WFC was divided into two independent constructs to account for the direction in which conflict originates. These constructs included work interfering with family (WIF) and family interfering with work (FIW). Questions elicited information about each agriculture perceptions regarding WIF and FIW. WIF and FIW were measured by asking respondents to determine the level of conflict between work and family roles. A six-point Likert-type scale was used to measure participants' perceived conflict originating from both family and work domains.

Overall, agriculture teachers in this study reported moderate levels of WIF ($M = 4.58$, $SD = 1.07$). When comparing WIF by sex, males reported slightly higher WIF ($M = 4.63$, $SD = 1.01$) than females ($M = 4.54$, $SD = 1.14$). However, there were no statistical differences between males and females for WIF $t(224) = -0.61$, $p = .545$.

Regarding FIW, agriculture teachers in this study reported moderately low levels of FIW ($M = 2.78$, $SD = 1.04$). When comparing FIW by sex, females reported slightly higher FIW ($M = 2.86$, $SD = 1.06$) than males ($M = 2.75$, $SD = 1.04$). However, there were no statistical differences between males and females for FIW $t(224) = 0.81$, $p = .422$.

Research Question # 4

The fourth research question was designed to identify the intentions of agriculture teachers to exit the teaching profession early (before retirement). Questions elicited information each agriculture teachers' turnover intentions as well as reasons they would likely leave the profession.

Turnover Intentions

A six-point Likert-type scale was used to measure agriculture teachers' turnover intentions. Overall, agriculture teachers in this study reported moderately low intentions to exit the teaching profession early ($M = 2.95$, $SD = 1.35$). When comparing agriculture teachers' turnover intentions by sex, females reported slightly higher turnover intention ($M = 2.98$, $SD = 1.37$) than males ($M = 2.92$, $SD = 1.33$). However, there were no statistically significant differences between males and females for turnover intentions; $t(225) = 0.29$, $p = .774$.

Reasons for Turnover

Participants were asked to indicate the likelihood of leaving their position as an agriculture teacher for specific reasons. Participants rated items on a six-point scale (from 1 = *strongly disagree* to 6 = *strongly agree*). Higher scores for each item indicated a greater likelihood of turnover given the presence of a specific factor or context.

Table 17 shows the agriculture teachers' likely reasons for turnover. Overall, agriculture teachers reported the highest likelihood of leaving their teaching position; 1) for a more desirable job opportunity, 2) for an opportunity to move up in their career, 3) because of family reasons, 4) due to a lack of compensation for the amount of work done,

and 5) because of excessive workload. The reasons agriculture teachers indicated as the least likelihood of leaving their teaching position consisted of; 1) to change teaching subject areas, 2) to move into an administrative position, 3) to obtain more education, 4) to teach in a better school or community, and 5) because of student reasons.

Males and females were similar in their reported reasons for the likelihood of turnover. Nine of the top ten reasons for turnover were commonly shared by both sexes. Similarly, four out of the bottom five reasons for turnover were also shared among both sexes. The two largest mean differences between male and female agriculture teachers were; 1) for parenthood responsibilities/rearing children (mean difference = 0.94), and 2) because it is incompatible with raising a family (mean difference = 0.48). For both of these reasons, females reported a higher likelihood of leaving than males.

Table 17

Ranked Reasons for Agriculture Teachers' Reported Turnover Intentions

Reason for likelihood of leaving teaching	Total			Female			Male		
	Rank	<i>M</i>	<i>SD</i>	Rank	<i>M</i>	<i>SD</i>	Rank	<i>M</i>	<i>SD</i>
For a more desirable job opportunity	1	3.90	1.49	1	3.98	1.54	1	3.85	1.45
For an opportunity to move up in career	2	3.72	1.57	4	3.81	1.58	2	3.64	1.56
Because of family reasons	3	3.67	1.44	2	3.9	1.37	5	3.53	1.48
Due to lack of compensation for the amount of work done	4	3.62	1.63	6	3.63	1.53	4	3.60	1.69
Because of the excessive workload	5	3.54	1.50	5	3.71	1.48	7	3.42	1.50
For early retirement	6	3.50	1.50	7	3.37	1.51	3	3.61	1.49
For parenthood responsibilities/ rearing children	7	3.32	1.59	3	3.88	1.63	12	2.94	1.47
Because of poor administrative support	8	3.31	1.65	12	3.12	1.62	6	3.44	1.66
Because of poor benefits or incentives	9	3.29	1.55	9	3.14	1.44	8	3.38	1.61
Because of poor salary	10	3.24	1.62	10	3.14	1.48	9	3.30	1.71
Because of personal reasons such as health	11	3.15	1.50	13	3.03	1.53	10	3.23	1.49
Because it is incompatible with raising a family	12	3.08	1.43	8	3.36	1.5	14	2.88	1.34
Because of a poor working environment	13	3.05	1.51	14	3.01	1.50	11	3.09	1.51
Because of dissatisfaction with job	14	2.95	1.53	15	2.98	1.45	13	2.93	1.59
To accommodate spouse/partner's career	15	2.93	1.5	11	3.14	1.49	16	2.79	1.5
Because of student reasons	16	2.83	1.44	17	2.84	1.38	15	2.83	1.5
To be a teacher in a better school or community	17	2.72	1.57	13	2.98	1.71	17	2.57	1.46
To obtain more education	18	2.45	1.28	18	2.63	1.35	19	2.31	1.23
To move into an administrative position	19	2.44	1.52	19	2.27	1.51	18	2.52	1.51
To change teaching subject areas	20	2.11	1.34	20	2.24	1.41	20	2.03	1.29

Research Question # 5

In order to identify the influence of agriculture teachers' work and family domain characteristics on WFC, forced entry multiple linear regression was utilized. WFC (dependent variable) consisted of two constructs – WIF and FIW – Therefore, two different regression analyses were conducted. Specific variables for the two regression analyses were selected based on previous literature and the role conflict theory. Because the focus of this research was concerned with time-based conflict with theoretical underpinnings in the role conflict theory, predictor variables that related to time and time-based conflict between work and family roles were utilized.

The independent variables for the multiple linear regression were grouped into two categories which included work domain variables and family domain variables. Specific family domain variables included number of children, ages of children, number of weekly work hours of the spouse/partner, and family salience. Specific work domain variables included actual weekly work hours, actual weekend work hours per month, years of teaching experience, number of agriculture teachers per school, average number of students per class, salary, location of worksite school, work salience, and perceived family supportive work culture. Salary and location of worksite school were dummy coded as 0 “below \$55,000” and 1 “\$55,000 or above” and 0 “urban/suburban” and 1 “rural” respectively. In addition to these independent variables, sex was entered into both regression analyses. Sex was dummy-coded as 0 “female” and 1 “male.”

Work Characteristics and WIF

The first regression analysis sought to determine the influence of work characteristics on WIF. The independent variables (work characteristics), in combination, comprised a significant model ($F = 5.23$; $p\text{-value} < .001$) and predicted 22% ($R^2 = .22$) of the variance in WIF. Four of the independent variables were significant in their prediction of WIF (see Table 18). Using the standardized coefficients (β) to determine the strength of the relationship between independent and dependent variables, I found perceived family-supportive work culture to be the strongest predictor of WIF ($\beta = -.29$; $p\text{-value} = < .001$). Additionally, number of agriculture teachers per school ($\beta = .18$; $p\text{-value} = .011$); work salience ($\beta = .17$; $p\text{-value} = .009$); and actual work hours per work week ($\beta = .15$; $p\text{-value} = .033$) were identified to be significant predictors of WIF. Negative standardized coefficients (β) for weekend work hours per month, years of teaching experience, average number of students/class, and perceived family-supportive work culture were found indicating as these factors increase, WIF decreases. Salary, years of teaching experience, average number of students per class, location of worksite school, and weekend work hours per month were included as insignificant predictors in the model.

Table 18

Predictive Model of Work Interference with Family (WIF)

Variable ¹	Dependent Variable: WIF					
	Zero-order correlation (<i>r</i>)	<i>p</i> -value	<i>B</i>	<i>SEB</i>	β	<i>p</i> -value
Sex	.04	.545	.17	.16	.08	.256
Salary	.03	.671	.06	.18	.01	.952
Work hours per work week	.27	<.001	.02	.01	.15	.034*
Weekend work hours per month	.08	.090	-.01	.01	-.04	.604
Years of teaching experience	.04	.586	-.01	.01	-.11	.194
Number of agriculture teachers per school	.18	.009	.15	.06	.18	.011*
Location of worksite school	-.02	.755	.20	.17	.09	.239
Average number of students/class	.09	.208	-.01	.01	-.03	.672
Work salience	.14	.028	.18	.08	.17	.009*
Perceived family-supportive work culture	.30	.004	-.34	.08	-.29	<.001*

Note. $R = .46$, $R^2 = .22$, $F = 5.23$, p -value < .001.

¹ Work salience and perceived family-supportive work culture items scaled from 1 “Strongly Disagree” to 6 “Strongly Agree.” Sex coded 0 = female, 1 = male. Salary coded 0 = below \$55,000, 1 = \$55,000 or above. Location of worksite school coded 0 = urban/suburban, 1 = rural.

* $p < .05$

Family Characteristics and FIW

For the second regression analysis, I utilized FIW as the dependent variable and family characteristics as the independent variables. The independent variables, in combination, did not produce a significant model ($F = 0.82$; p -value .539) and predicted only 3% ($R^2 = .03$) of the variance in FIW. However, one of the independent variables,

family salience ($\beta = -.19$; p -value = .047) was significant in predicting FIW (see Table 19). The negative standardized coefficients (β) for family salience indicates as family salience increases, FIW decreases. Age of children, number of children, and weekly work hours of spouse/partner were all insignificant predictors in the model.

Table 19

Predictive Model of Family Interference with Work (FIW)

Variable ¹	Dependent Variable: FIW					
	Zero-order correlation (r)	p -value	B	SEB	β	p -value
Sex	.05	.422	-.09	.22	-.04	.699
Number of children	.00	.997	.02	.10	.02	.849
Age of children	.05	.520	.00	.01	.00	.980
Weekly work hours of spouse/partner	.01	.869	-.00	.01	-.01	.930
Family salience	.01	.922	-.32	.16	-.19	.047*

Note. $R = .18$, $R^2 = .03$, $F = 0.82$, p -value .539.

¹ Family salience items scaled from 1 “Strongly Disagree” to 6 “Strongly Agree.” Sex coded 0 = female, 1 = male.

* $p < .05$

Research Question # 6

I utilized forced entry multiple linear regression to determine the relationships between work and family domain characteristics (predictor variables) and agriculture teachers’ turnover intentions (dependent variable). The independent variables, in combination, comprised a significant model ($F = 3.20$; p -value $< .001$) and predicted 29% ($R^2 = .29$) of the variance in teacher turnover intentions. Three of the independent

variables were significant in their prediction of teacher turnover intentions (see Table 20).

Using the standardized coefficients (β) to determine the strength of the relationship between independent and dependent variables, I found age of child to be the strongest predictor of teacher turnover ($\beta = -.304$; p -value = .013). Additionally, work hours per work week ($\beta = .26$; p -value = .008) and perceived family-supportive work culture ($\beta = -.239$; p -value = .010) were identified to be significant predictors of teacher turnover intentions. Positive standardized coefficients (β) for work salience, years of teaching experience, and work hours per work week were found, indicating as these factors increase, so does turnover intentions. Salary, years of teaching experience, number of agriculture teacher per school, average number of students per class, weekend work hours per month, location of worksite school, work salience, number of children, weekly work hours of spouse/partner, and family salience were all insignificant predictors in the model.

Table 20

Predictive Model of Agriculture Teacher Turnover Intentions from Work and Family Domain Characteristics

Variable ¹	Dependent Variable: Teacher turnover intentions					
	Zero-order correlation (<i>r</i>)	<i>p</i> -value	<i>B</i>	<i>SEB</i>	β	<i>p</i> -value
Sex	.02	.774	.10	.27	.04	.728
Salary	.21	.001	-.13	.27	-.05	.640
Work hours per work week	.25	<.001	.03	.01	.26	.008*
Weekend work hours per month	.05	.444	-.01	.01	-.06	.555
Years of teaching experience	.22	.001	.01	.02	.09	.507
Number of agriculture teachers per school	.01	.981	-.04	.09	-.04	.664
Average number of students per class	.02	.824	-.01	.016	-.05	.624
Location of worksite school	-.07	.327	-.48	.61	-.17	.431
Work salience	.02	.812	.04	.14	.03	.786
Perceived family-supportive work culture	.35	<.001	-.37	.14	-.24	.010*
Number of children	.06	.359	-.16	.11	-.13	.141
Age of children	.27	.001	-.05	.02	-.30	.013*
Weekly work hours of spouse/partner	.04	.603	-.01	.01	-.02	.868
Family salience	.03	.688	-.09	.19	-.05	.627

Note. $R = .54$, $R^2 = .29$, $F = 3.20$, p -value < .001.

¹ Work salience, family salience, and family supportive work culture items scaled from 1 “Strongly Disagree” to 6 “Strongly Agree.” Sex coded 0 = female, 1 = male. Salary coded 0 = below \$55,000, 1 = \$55,000 or above. Location of worksite school coded 0 = urban/suburban, 1 = rural.

* $p < .05$

Research Question # 7

In order to identify the influence of WFC on agriculture teachers' turnover intentions, I conducted a multiple linear regression. The dependent variable of interest was agriculture teachers' turnover intent while the independent variables were WIF and FIW.

The independent variables, in combination, comprised a significant model ($F = 15.68$; $p\text{-value} < .001$) and predicted 18% ($R^2 = .18$) of the variance in teacher turnover intentions. Table 21 shows that of the WFC independent variables entered into the regression model, only WIF was a significant predictor of teacher turnover intentions ($\beta = .41$; $p\text{-value} = < .001$). FIW was an insignificant predictor in the model.

Table 21

Predictive Model of Agriculture Teacher Turnover Intentions from WFC

Variable ¹	Dependent Variable: Teacher turnover intentions					
	Zero-order correlation (r)	p -value	B	SEB	β	p -value
Sex	.02	.774	-.10	.17	-.04	.538
WIF	.42	<.001	.53	.08	.41	<.001*
FIW	.08	.258	.04	.08	.03	.638

Note. $R = .42$, $R^2 = .18$, $F = 15.68$, $p\text{-value} < .001$.

¹ WIF and FIW items scaled from 1 "Strongly Disagree" to 6 "Strongly Agree." Sex coded 0 = female, 1 = male.

* $p < .05$

CHAPTER 5: CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this study was to 1) describe work and family characteristics of agriculture teachers, 2) describe time-based WFC of agriculture teachers, 3) explore the relationships between work and family characteristics and WFC, and 3) identify factors that influence agriculture teachers' turnover intentions. An additional focus of this study was to explore differences between male and female agriculture teachers regarding work and family characteristics, WFC, and turnover intentions.

The following research questions and hypotheses guided this study:

1. What are the demographic characteristics of agriculture teachers (personal, family, and work), and how do they differ by sex?
2. What are the perceptions and attitudes of agriculture teachers toward their own work and family domains (family salience, work salience, and perceived family-supportive work culture), and how do they differ by sex?
3. To what degree do agriculture teachers experience WFC, and how does it differ by sex?
4. What are agriculture teachers' turnover intentions, and how do they differ by sex?
5. What is the relationship between work and family domain characteristics and WFC?

- *H₀: There is no relationship between agriculture teachers' work domain characteristics and WIF.*

- *H₀: There is no relationship between agriculture teachers' family domain characteristics and FIW.*

6. What is the relationship between work and family domain characteristics and agriculture teachers' turnover intentions?

- *H₀: There is no relationship between agriculture teachers' work and family domain characteristics and turnover intentions.*

7. What is the relationship between WFC factors and agriculture teachers' turnover intentions?

- *H₀: There is no relationship between WFC factors and agriculture teachers' turnover intentions.*

In this chapter, I provide a summary of the findings of this study. Based on these key findings I provide conclusions, implications, and recommendations for each research question.

Summary of Findings

Question #1

Research question one sought to describe the personal, work, and family domain characteristics of agriculture teachers in the United States during the 2014-2015 academic year and to determine if these characteristics differed by sex. Regarding personal characteristics, 39% of the agriculture teachers were female and 58% were male. Female agriculture teachers tended to be of younger age than male agriculture teachers. The

majority of respondents self-identified as “White, European American, Non-Hispanic.” Besides the role of agriculture teacher, participants indicated the highest frequency of participation in the “spouse” and “parent” roles.

Regarding family domain characteristics, an overwhelming number of the respondents were married. Almost three quarters of the respondents reported they were parents who had responsibilities for their dependent children, with male agriculture teachers reporting significantly more children than female teachers. The average age of the respondents’ children was 11 years old with male agriculture teachers having significantly older children than female teachers. Less than 10% of the respondents reported having responsibilities to care for an elderly or adult with special needs.

An overwhelming majority of agriculture teachers’ spouse/partners worked outside the home more than 20 hours per week. On average, agriculture teachers’ spouse/partner worked over 40 hours per week outside the home. For female agriculture teachers, their spouse/partner worked significantly more hours per week outside the home than spouses/partners of male agriculture teachers.

Regarding work domain characteristics, respondents reported working 55 hours per regular work week as agriculture teachers, with no differences between males and females. Additionally, agriculture teachers reported investing an average of 18 weekend hours per month in their job. For both the regular work week and weekends, agriculture teachers reported a lack of congruence between the amount of hours they preferred to work and the amount of hours they actually worked. Agriculture teachers reported they preferred to work 12 hours less per week, and 12 hours less per month than what they

were currently working. There were no differences between males and females for preferred and actual time invested in work. Among the respondents, only 2% reported working part-time.

Male agriculture teachers reported significantly more years of teaching experience and higher salaries than female teachers. Additionally, significantly more males than females were certified through a university teacher licensure program. Among the respondents, two thirds reported teaching in rural schools, while one third reported their schools to be located in either urban or suburban areas.

Less than 10% of the respondents had ever taken a leave from teaching, with the mean length of time away from teaching being five years. Males took significantly longer extended leaves from teaching than females. The most common reasons respondents took a leave from teaching for an extended period of time included pursuit or exploration of another career (31.8%), maternity leave (22.7%), to care for children/be with family (13.6%), and unsatisfied/burned out/needed a break (13.6%).

Question #2

Research question two sought to determine the perceptions and attitudes of agriculture teachers toward their own work and family domains. Variables of interest included family salience, work salience, and perceived family-supportive work culture. An additional objective was to determine if perceptions and attitudes about the work and family domains differed by sex. Agriculture teachers reported high levels of family salience and moderate levels of work salience. Additionally, agriculture teachers only moderately agreed that their job of teaching agriculture was part of a family-supportive

work culture. There were no differences between male and female agriculture teachers in terms of their attitudes and perceptions of work salience, family salience, and family supportive work culture.

Question #3

Research question three sought to determine the degree to which agriculture teachers experience WFC, and how it differs by sex. Agriculture teachers reported moderate levels of conflict originating from the work domain (WIF), but reported moderately low levels of conflict originating from the family domain (FIW). No differences were found between male and female agriculture teachers for WIF and FIW.

Question #4

Research question four sought to determine the turnover intentions of agriculture teachers and identify if differences existed between males and females. Additionally, research question four sought to identify specific factors predicting the likelihood of agriculture teacher turnover. Agriculture teachers in this study reported moderately low turnover intentions with no significant difference between males and females.

Overall, agriculture teachers reported the highest likelihood of leaving their teaching position; 1) for a more desirable job opportunity, 2) for an opportunity to move up in their career, 3) because of family reasons, 4) due to a lack of compensation for the amount of work done, and 5) because of excessive workload. Agriculture teachers indicated the least likely reasons to leave teaching consisted of; 1) to change teaching subject areas, 2) to move into an administrative position, 3) to obtain more education, 4) to teach in a better school or community, and 5) because of student reasons. Males and

females were similar in most of their reported reasons for the likelihood of turnover.

However, females reported much higher means than males for the items “for parenthood responsibilities/rearing children” and “because it is incompatible with raising a family.”

Question #5

Research question five sought to determine the relationship between WFC and work and family domain characteristics. It included the nulls, “ H_0 : There is no relationship between agriculture teachers’ work domain characteristics and WIF” and, “ H_0 : There is no relationship between agriculture teachers’ family domain characteristics and FIW.”

Four work domain characteristics, which included perceived family-supportive work culture, number of agriculture teachers per school, work salience, and actual work hours per work week, were significant factors in the model predicting WIF. Family salience was a significant factor in the model predicting FIW. Therefore, both null hypotheses were rejected as evidence of relationships between work domain characteristics and WIF as well as family domain characteristics and FIW were found.

Question #6

Research question six sought to determine the relationship between turnover intentions of agriculture teachers and work and family domain characteristics and included the null, “ H_0 : There is no relationship between agriculture teachers’ work and family domain characteristics and turnover intentions.” Three work and family domain characteristics, which included age of child, work hours per work week, and perceived family-supportive work culture, were significant predictors in the model predicting

turnover intentions of agriculture teachers. Combined, these work and family domain characteristics predicted 29% of the variance in the turnover intentions of agriculture teachers. Therefore, the null hypothesis was rejected as evidence of a relationship between the work and family domain characteristics and turnover intentions was found.

Question #7

Research question seven sought to determine the relationship between WFC and turnover intentions of agriculture teachers and included the null, “ H_0 : There is no relationship between WFC factors and agriculture teachers’ turnover intentions.” WIF was a significant factor in the model predicting turnover intentions of agriculture teachers. Combined, the WFC factors predicted 18% of the variance in the turnover intentions of agriculture teachers. Therefore, the null hypothesis was rejected as evidence of a relationship between the WIF and turnover intentions was found.

Conclusions and Implications

Question #1

Females comprised nearly 40% of the respondents in this study, which is consistent with research over the past decade and a half indicating the increasing proportion of female agriculture teachers into the profession (Camp et al., 2002; Foster et al., 2014; Kantrovich, 2007, 2010; Knight, 1987). The changing demographic trends in agricultural education, regarding sex, is also consistent with trends in the American workforce, where more women are entering the workforce than in previous decades (Galinsky et al., 2011).

The very homogenous racial and ethnic composition of the respondents in this study is consistent with the most recent agricultural education supply and demand study (Foster et al., 2014). However, this composition is not reflective of the United States population, where Whites comprise only 78% of the total population (U.S. Census Bureau, 2014), implying the need for increased recruitment efforts of agriculture teachers representing the demographics of the nation. Despite the lack of ethnic diversity among agriculture teachers, the fact that one third of the respondents reported teaching in schools located in urban or suburban areas, does imply agricultural education is becoming more inclusive in one aspect.

The findings of this study indicate female agriculture teachers were younger than their male counterparts, earned less money, and had less teaching experience. Perhaps these findings are a function of the profession's changing demographics over the past few decades. Since the increase in women agriculture teachers into the profession has happened slowly over time, the majority of older and more experienced teachers are male, while the younger teachers are female. And as most teacher salaries are largely based on non-negotiable school district salary schedules which take into account years of teaching experience, it would be expected that those with lower salaries would be those with less teaching experience. However, agriculture teachers do receive stipends, extended contracts, and other monies that may or may not be subject to such rigid guidelines, and thereby may contribute to gender bias, "subtle sexism" or discrimination (Kelsey, 2006). More research on potential discrepancy in pay among men and women agriculture teachers may be warranted.

In a similar vein, and consistent with trends in the American labor force (Galinsky et al., 2011), the majority of respondents in this study also indicated their spouse or partner worked an average of 44 hours per week. These findings are similar to those found by Murray et al. (2011) who found the spouses of Georgia agriculture teachers worked between 34 and 47 hours per week outside of the home. The high proportion of agriculture teachers' spouses/partners working outside the home, indicates both partners would have full-time work and childcare responsibilities, thus increasing role responsibilities in the family domain. According to the role conflict theory and the scarcity of resources hypothesis, increased role responsibilities increase incompatibility between roles, thus increasing WFC (Greenhaus & Beutell, 1985). The fact that respondents reported their spouse/partner worked an average of 44 hours per week, indicates that time-based WFC could be a concern for agriculture teachers, especially for those teacher who have family role responsibilities.

Similarly, more hours are worked per week outside of the home by the spouse/partner of female agriculture teachers than those of male teachers. This finding is consistent with the findings of Murray et al. (2011), who found female agriculture teachers reported their spouse worked 12 more hours per week outside the home than did male teachers' spouses. Based on the findings of Murray et al. (2011) and assuming a traditional family model (husband, wife and children), these findings might suggest more female agriculture teachers than males assume a larger role in the family domain. This suggestion implies traditional gender roles might still exist in agricultural education. According to Foster (2001), female agriculture teachers who also take on the primary

caregiving responsibility at home, often feel guilty for spending time at work away from family, and are likely to quit teaching or not enter teaching in the first place. Therefore, this finding pertaining to the number of weekly hours worked outside the home by agriculture teachers' spouses/partners has implications for agriculture teacher retention and attrition.

Male agriculture teachers had significantly more children, older children, and were more likely to be the primary caregiver for elderly or adults with special needs than their female counterparts. This is feasibly a function of agriculture teachers' age and teaching experience. Since male agriculture teachers tended to be older and had more teaching experience than females, it is likely these differences had an effect on the respondent's number and ages of children and caregiving responsibilities for elderly adults. Furthermore, it may help to explain why there were no differences between male and female agriculture teachers in terms of WFC. With males having significantly more children than females while females have significantly younger children than males, it is possible that these factors equalized the conflict for both male and female agriculture teachers.

On average, agriculture teachers in this study worked over 55 hours per week, which is consistent with other research indicating agriculture teachers often work well beyond a 40-hour work week (Chaney, 2007; Murray et al., 2011; Torres et al., 2009). When accounting for weekend work hours, it is likely that agriculture teachers actually work an average of close to 60 hours per week. Agriculture teachers working well over 40 hours per week might possibly be the result of inefficiency or inability to complete

necessary job requirements in a timely manner. This would have implications for professional development opportunities. On the other hand, it could be an indication that the responsibilities of an agriculture teacher do indeed require an excessive investment in time. This has implications for recruitment and retention efforts of the profession.

Male and female agriculture teachers seem to invest nearly the same amount of time each week into their teaching jobs. This finding is consistent with the findings of Murray et al. (2011) who found Georgia agriculture teachers worked an average of 57 hours per week, with both male and female teachers reporting approximately the same number of hours invested each week in the agricultural education program. These findings have implications for the family domain where work hours and responsibilities may vary by sex. With evidence supporting the idea that traditional gender roles still exist in agricultural education, it is likely that women more readily assume the less flexible, primary caregiver role for children at home (Murray et al., 2011). As a result of this inflexible time obligation, the potential for role conflict and turnover could be greater for female agriculture teachers than males (Foster, 2001). Therefore, any efforts from policymakers and school administrators that encourage life balance, could be a benefit to the profession.

Given the number of hours worked each week by agriculture teachers, it is not surprising that agriculture teachers would prefer to work less hours per week. In accordance with the role conflict theory, this desire to work less hours stems from excessive demands on limited time resources, a result of participation in multiple life roles (Greenhaus & Beutell, 1985).

For both the regular work week and during weekends, agriculture teachers reported they preferred to work an average of 12 hours less than they currently worked. Rather than working an average of 56 hours per work week and 18 hours per month on weekends, they preferred to work 44 hours per work week and only five hours per month on weekends. Interestingly, agriculture teachers still indicated they preferred to work more than a standard work week. This finding suggests that agriculture teachers understand their job is demanding and they are willing to work a little extra. However, this finding also implies that agriculture teachers are not satisfied with their current workload. The desire of agriculture teachers to work less hours is consistent with other findings. Chaney (2007) found agriculture teachers in Texas quit their job because of the excessive workload placed on them and the lack of compensation received for their extra labor. The fact that agriculture teachers across the country work well beyond a standard work week, yet prefer to work substantially less hours, has implications for job satisfaction, burnout, and turnover intentions.

A very small proportion of respondents reported ever having taken a leave from teaching, implying that either few teachers who leave teaching ever return, or not many ever take an extended leave from teaching. However, Wayne (2000) concluded that about one quarter of newly hired teachers each year are temporary leavers. Perhaps this is not the case in agricultural education.

The findings regarding the reasons for leaving are consistent with other studies, which indicate many teachers leave teaching to pursue other careers or because of family reasons (Chaney, 2007; Ingersoll, 2001; Wayne, 2000). Although the numbers were

small, the fact that not a single male teacher reported taking a leave from teaching for caregiving responsibilities, and females reported a higher likelihood of leaving teaching than males for family reasons, implies traditional gender roles might still exist.

Therefore, when matters of family arise, females tend to take on the primary responsibility at home. It is interesting to note the average time away from teaching was just over five years, as this is generally the age in which children begin primary school, thus freeing up time resources for parents to be allocated in different life roles.

The finding that significantly more males than females were certified through a traditional university teacher licensure program implies a need to foster alternative routes for certification. Perhaps this finding is related to the previous discussion about traditional gender roles, where women often take on the primary responsibility of rearing children. As a result, going through a traditional university teacher licensure program may be more challenging for mothers with small children than for males. Therefore, this finding has implications for teacher preparation programs to seek to meet the needs of potential agriculture teachers with responsibilities in multiple life roles.

Very few of the respondents reported working part-time, yet most indicated they participated in multiple life roles. The role conflict theory posits that because time is a limited resource, trying to balance a full-time workload with responsibilities in other domains, can result in overload and role strain among agriculture teachers (Greenhaus & Parasuraman, 1986; Marks, 1977). Additionally, as agriculture teachers spend more time in any one of their multiple roles, the more conflict and role strain they experience. One outcome of role strain and conflict is turnover and turnover intentions. Therefore, this

finding has implications for agriculture teacher retention efforts. The implications of this finding extends to school and district administrators responsible for contracts, schedules, and meeting the professional needs of their teachers. With the present shortage of agriculture teachers, perhaps more part-time teaching positions would enable teachers to allocate time resources across multiple life roles, and thus enable them to remain in teaching longer.

Question #2

Both male and female agriculture teachers viewed the family role to be more important and central to their life than the work role. It is interesting to note that work salience was lower than family salience, yet agriculture teachers tend to work over 55 hours per week at work, while also indicating they prefer to work less hours. If agriculture teachers believe family is more important and central to their lives than work, why do they invest so many extra hours doing work related activities? Additionally, what prevents them from working less and spending more time in the family role? Perhaps, as research has indicated among teachers of other disciplines, agriculture teachers perceive there is little autonomy or flexibility in their work schedule and they have little control over their demanding workload (Darling-Hammond & Wise, 1983; Ingersoll, 2001; Rosenholtz & Simpson, 1990; Shen, 1997). As a result, agriculture teachers tend to invest more time and energy resources in work roles than in family roles.

One possible explanation to the reported high family salience of agriculture teachers is the phenomenon of social desirability bias (Spector, 2004). It is possible that

agriculture teachers believe it is more socially acceptable to value family over work, and therefore their responses indicated a high level of family salience.

Despite high family salience, agriculture teachers reported low levels of conflict from family to work (low FIW). Additionally, family salience was a negative predictor of FIW, indicating as family salience increased, conflict decreased. This finding contradicts the role conflict theory, which posits WFC will increase when either work or family roles are salient and central to a person's life. The role conflict theory suggests individuals will invest more time and energy into roles they consider to be more important, allowing less time for other roles. Yet, the findings of this study show agriculture teachers invest extra time in the work role, despite high levels of family salience. One possible explanation of the negative relationship between FIW and family salience is role flexibility. Perhaps the family role is more flexible and less rigid with time than the work role, enabling agriculture teachers to focus the necessary resources (time and energy) on the responsibilities of their job, while devoting the leftover time and energy to family responsibilities. As a result, the flexible nature of the family role may potentially decrease conflict.

Agriculture teachers reported their work culture to be only moderately supportive of family. This finding has implications for school administrators and policy makers. The literature shows poor administrative support is positively associated with teacher turnover and negatively associated with teacher retention and job satisfaction (Darling-Hammond, 2000; Eller et al., 2000; Hall et al., 1992; Ingersoll, 2001; Shen, 1997; Smith & Ingersoll, 2004; Tippens et al., 2013; Walker et al., 2004; Weiss, 1999). For

agriculture teachers, it is possible that administrative support includes creating a work culture that supports teachers' families and their needs.

Question #3

Consistent with other studies of teachers from various disciplines, the findings from this study revealed that agriculture teachers experienced higher levels of WIF than FIW (Cinamon & Rich, 2005). This finding suggests agriculture teachers experience the greatest psychological role strain as work demands interfere with family responsibilities and not the other way around. Work as an agriculture teacher is filled with many challenges, including trying to allocate time resources to a demanding work schedule while also attending to family domain responsibilities (Crutchfield et al., 2013; Murray et al., 2011). This finding has implications for the agricultural education profession in their efforts to increase teacher retention and job satisfaction.

Given the fact that male and female teachers invest the same number of work hours each week and the evidence that agriculture teachers tend to maintain traditional gender roles, it would be expected that women would experience more WFC than men (Byron, 2005; Higgins et al., 1994; Pleck, 1977). However, there were no differences between male and female agriculture teachers for FIW and WIF. Some research in agricultural education has focused on the challenges female teachers face, with some findings pertaining to balancing work and family roles (Baxter et al., 2011; Foster, 2001; Kelsey 2006; Murray et al., 2011). Perhaps, males experience many of the same challenges that female teachers do. More research exploring challenges and conflict among both male and female agriculture teachers is needed.

Question #4

Consistent with other studies in agricultural education, agriculture teachers indicated moderately low intentions to leave the teaching profession early and suggests agriculture teachers are committed to (Crutchfield et al., 2013; Sorensen & McKim, 2014) and generally satisfied with their jobs (Bennett et al., 2002; Cano & Miller, 1992; Castillo et al., 1999; Chaney, 2007; Chenevey et al., 2008; Grady & Burnett, 1985; Kitchel et al., 2012; Ritz et al., 2013; Sorensen & McKim, 2014; Walker et al., 2004). Despite these findings, agriculture teachers indicated they were likely to leave teaching if a more desirable job opportunity came along. Additionally, the majority of respondents who had taken an extended leave from teaching, did so to pursue other career opportunities. These findings have implications for recruitment and retention and suggest teachers would remain in the profession as long as teaching agriculture is a competitive job choice with other jobs. Science and math education has also experienced a shortage of secondary teachers, due in part because teachers trained in science and math can make more money working in the high-demand field of math and science rather than teaching (Ingersoll, 2001; Murnane & Olsen, 1990; Theobald & Gritz, 1996). Based on these findings, agricultural education may be similar to math and science education in terms of teacher turnover.

Related to job opportunities, it is interesting to note the second highest factor for which agriculture teachers were likely to leave teaching was for opportunities to move up in their career. However, obtaining more education and moving into administration ranked number 18 and 19 out of 20 in terms of reasons for leaving. These findings

indicate agriculture teachers desire upward mobility and advancement within their careers, but do not want to invest in more education or move into administration in order to move up. Perhaps the reason other jobs outside of education are attractive to teachers is because they provide opportunities for upward mobility, whereas teaching provides only a few options to move up the career ladder. The implications of these findings suggest the agriculture teaching job provides little opportunity for teachers to advance in their career, and therefore may be a barrier for some teachers to remain in the profession.

Behind pursuing more desirable job opportunities and moving up in their career, the next three highest ranked reasons for which agriculture teachers indicated they were likely to leave teaching related to compensation and an excessive workload. Consistent with Chaney's (2007) findings among former agriculture teachers in Texas, these findings suggest agriculture teachers feel they are not adequately compensated for the extra time they invest in work. The implications of these findings suggest agricultural education needs to find ways to help teachers reduce the excessive workload and expectations, or find more effective ways to compensate them for the extra hours they work.

Both male and female agriculture teachers indicated the likelihood of leaving for similar reasons. The one noteworthy exception was females were more likely than males to leave teaching for parenting responsibilities and because they perceived agricultural education to be incompatible with raising family. Foster (2001) concluded that female agriculture teachers perceive their job to be incompatible with raising a family and are often left to choose between their career or raising a family, but not both. Men ranked

these family factors much lower than did female agriculture teachers, implying the existence of traditional gender roles in agricultural education in which family obligations are the primary responsibility of females. If traditional gender roles persist, as the number of female agriculture teachers into the profession increases, the profession needs to address the challenges women face in trying to balance work and family roles. However, men and women both experience similar levels of work-family conflict, implying a need for the profession to address the challenges of both men and women as in their attempts to balance work and family roles.

As agriculture teachers work in excess of 55 hours per week, limits to the amount of time available for the family domain are reached, resulting in psychological tension or conflict. Research indicates the most common consequence of this psychological tension is turnover intentions and actual turnover (Allen et al., 2000; Grandey & Cropanzano, 1999; Greenhaus, Collins, Singh, & Parasuraman, 1997; Netemeyer et al., 1996). Therefore, as agriculture teachers experience psychological tension or perceive their jobs to be incompatible with family responsibilities (Foster, 2001), teacher turnover is more likely to occur. These findings suggest efforts to improve agriculture teachers' work efficiency and time management skills may reduce the likelihood of teacher turnover. Additionally, since WFC seems to originate in the work domain, improving the workplace conditions of agriculture teachers to make the work domain more compatible with the family domain, may improve teacher retention.

Question #5

With work factors predicting 22% of the variance in time-based WIF, focusing on improving work domain characteristics that reduce time conflict with the family domain can be important in addressing teacher retention and the teacher shortage crisis in agricultural education. However, WFC is distinguished by three forms of conflict: time-based conflict, strain-based conflict, or behavior-based conflict (Greenhaus & Beutell, 1985). Therefore, research addressing behavior-based and strain-based conflict among agriculture teachers might provide additional information that can be useful in addressing the issue of agriculture teacher turnover.

As perceived family-supportive work culture was the strongest predictor of WIF, schools and districts that establish family-friendly cultures can help reduce WIF in agriculture teachers. Additionally, since WIF and perceived family-supportive work culture were both significant predictors of teacher turnover, reducing WIF can also reduce teacher turnover intentions.

Another significant predictor of WIF was the number of agriculture teachers per school, which was found to be a positive relationship. Therefore, as the number of agriculture teachers in a school increases, so does WFC. The more agriculture teachers available at a school could reduce the workload on teachers as tasks are divided. On the other hand, more agriculture teachers per school could indicate larger programs, larger schools, more paperwork, and perhaps more responsibilities. The teacher attrition literature indicates teacher turnover is highest in large urban schools where multiple teacher programs may be more prevalent. Perhaps, this finding supports the conclusion

“that teachers, while becoming more efficient and effective in planning and other management activities and thereby saving time, are not getting that saved time back because they then fill the found time with more activities” (Lambert et al., 2011, p. 60). More full-time or part-time teachers, or perhaps administrative staff, should enable agriculture teachers to divide programmatic responsibilities, freeing up time resources to allocate in other life roles. However, if that freed up time is filled up with additional activities, an increased number of agriculture teachers may indeed increase conflict.

Greenhaus and Beutell (1985) proposed that WFC is intensified when either work or family roles are salient to an individual. They argued the more important a role is to an individual, the more time and energy the individual will invest in that role, leaving less time and energy for other roles. Since agriculture teachers in this study indicated moderate levels of work salience, it supports the role conflict theory’s notion that role salience intensifies WFC. This finding indicates agriculture teachers perceive their jobs as important and central to their lives, to the extent that it interferes with family responsibilities. These findings have implications for the profession to provide professional development and instruction on work-life balance and role salience to pre-service and in-service agriculture teachers. This could be especially helpful for teachers going through a major life event, such as marriage, birth of a child, or job change.

The rational view perspective, a tenant of the role conflict theory, posits the amount of WFC a person experiences, rises proportionally with the number of hours he or she spends in either the work or family domain (Duxbury et al., 1994; Gutek, Searle, & Klepa, 1991). Agriculture teachers in this study reported working over 55 hours per

week at their jobs. Therefore, the finding that actual weekly work hours significantly predicted WIF of agriculture teachers supports the rational view perspective. Similarly, the scarcity hypothesis posits time is a limited resource (Marks, 1977), and because agriculture teachers tend to invest well over 40 hours per week in work activities, only small amounts of time resources are available to invest in other life roles. As a result, WIF increases. This finding has implications for providing effective professional development for agriculture teachers, enabling them to be efficient with their time at work. Perhaps if agriculture teachers were more efficient, they would spend less hours at work. However, it may also be the case that agriculture teachers' workloads are excessive (Moore & Camp, 1979; Newcomb et al., 1987; Torres et al., 2008; Torres et al., 2009). Therefore, these findings may have implications for administrators to find ways to reduce paperwork and other administrative obligations and challenges that agriculture teachers often deal with (Boone & Boone, 2007; Miller & Scheid, 1984; Mundt & Connors, 1999).

Interestingly, actual weekend work hours per month was not a significant predictor of WIF. Perhaps this is because much fewer hours are invested in work during weekends than during weekdays. It may also relate to the fact that weekend work may provide more flexibility in scheduling; teachers can invest in work when it is convenient as opposed to the rigid, inflexible work schedule during the work week. Similarly, the finding that weekend work hours did not predict WIF could be due to the special nature of the work and family domains during the weekends. Teachers may not actually leave the physical boundaries of the family domain to accomplish work-related activities such

as planning lessons or grading student work. As a result, the boundaries between work and family domains become more permeable, and work-related responsibilities performed at home do not interfere as much as when they are accomplished at work. The fact that weekly work hours was a significant predictor of WIF while weekend work hours were not, may have implications for a more flexible work schedule, such as online and hybrid delivery models or four-day school weeks.

The model of family domain characteristics predicting FIW was found to be insignificant. Perhaps this is because agriculture teachers reported moderately low levels of the dependent variable FIW. The fact that agriculture teachers reported moderately low levels of FIW suggests that family characteristics have little effect on the psychological tension or conflict associated with trying to balance work and family responsibilities. Rather, conflict among agriculture teachers originates more from work domain characteristics than from family domain characteristics. This has implications for the profession to focus on work domain characteristics in their efforts to address work-family conflict and teacher turnover.

The one family domain characteristic that did significantly predict FIW was family salience. Despite this conclusion, FIW among agriculture teachers does not elicit a major concern, since agriculture teachers only reported moderate levels of FIW, and because FIW was not found to be a significant factor influencing teacher turnover intentions. However, family salience was negatively associated with FIW, which contradicts arguments of the role conflict theory (Greenhaus & Beutell, 1985). Perhaps this negative relationship indicates work-family enrichment, positive spillover, or role

enhancement (Barnett & Hyde, 2001; Baruch & Barnett, 1986; Frone, 2002; Grzywacz & Marks, 2000) rather than conflict. More research in agricultural education should be conducted to explore the relationship between family variables and positive spillover, in an effort to explain why teachers might remain in the profession.

Age of children and number of children were insignificant factors in the model predicting FIW among agriculture teachers. Although this finding is consistent with some studies involving teachers (Cinamon & Rich, 2005; Sorensen & McKim, 2014), it is not consistent with the vast majority of studies exploring FIW and work-family conflict in other professions (Crouter, 1984; Eagle et al., 1997; Frye & Breugh, 2004; Grandey & Croponzano, 1999; Higgins et al., 1994; Lewis & Cooper, 1999; Netemeyer et al., 1996). One plausible explanation for why age of children and number of children were found to be insignificant factors influencing FIW might be because of the similarities between the teaching profession and the family domain. Since teaching involves working with children and youth in the work domain, it is possibly an easy transition to working with their own children in the family domain. Additionally, for most teachers, the school schedule of their children usually aligns relatively close with their own work schedule, thus enabling teachers to reconcile work and family domain responsibilities to reduce time-based conflict. These conclusions have implications for research exploring the permeable nature of the boundaries between work and family domains of teachers.

Question #6

The more hours invested in the job during a regular work week significantly increases WIF and turnover intentions of agriculture teachers. These findings are

consistent with the literature that indicates many of the common problems agriculture teachers face relate to work hours invested in their jobs (Chaney, 2007; Miller & Scheid, 1984; Moore & Camp, 1979; Mundt & Connors, 1999; Torres et al., 2009) or trying to balance work and family responsibilities (Edwards & Briers; 1999; Mundt & Connors, 1999; Murray et al., 2011; Myers et al., 2005; Torres et al., 2009). While the number of hours per work week was a significant predictor of turnover intentions, the number of weekend hours worked was not. Since the number of work hours invested each week influences turnover intentions of agriculture teachers, this finding suggests that perhaps agriculture teachers do indeed experience burnout as they reach a certain threshold of hours worked each week. The fact that participants in this study had not left the profession, may indicate the threshold of work hours per week may actually be more than 55 hours per week for agriculture teachers before they decide to leave teaching.

The findings of this study suggest that the more supportive of families the work culture is perceived to be, the less likely agriculture teachers are to quit. The work culture for agriculture teachers not only consists of the local school in which they work, but also the agriculture teaching profession at large. Therefore, this finding has implications not only for local school administrators, but also for the agricultural education profession, to facilitate family-supportive work cultures and try to accommodate the needs of teachers with families.

Salary was not a significant factor in the model predicting teacher turnover intentions, which is contrary to much of the literature (Boyd et al., 2005; Gonzalez et al., 2008; Ingersoll, 2001; Murnane & Olsen, 1990; Theobald & Gritz, 1996). This finding

suggests agriculture teachers do not plan to leave teaching because of poor salary.

Despite this finding, both male and female agriculture teachers indicated the highest likelihood of leaving teaching was for a more desirable job opportunity. Therefore, it seems that more desirable job opportunities are not more desirable because of salary. Perhaps, as findings of this study suggest, agriculture teachers seek more desirable job opportunities from careers where they aren't expected to work 55 hours per week, or as Chaney (2007) suggests, careers where they feel they are adequately compensated for the amount of work hours they invest.

Although age of child was not a significant predictor of FIW, it was found to be statistically significant in this model predicting teacher turnover intentions. The beta was negative indicating the younger the child, the higher the teacher turnover intention. In accordance with the role conflict theory, because agriculture teachers' work hours overlap with daytime hours when young children require a caregiver, the two roles become incompatible, thereby increasing conflict. Consistent with other studies (Borland & Dowling, 2008; Stinebrickner, 1998, 2002; Wayne, 2000), teachers with young children are perhaps likely to take a leave from teaching while their children are young to avoid conflict. Based on traditional gender roles still existing in agricultural education (Murray et al., 2011) and the fact that females indicated a higher likelihood of leaving teaching for family responsibilities than males, it is probable that the greatest turnover of teachers due to family reasons would be females. Foster (2001) concluded many female agriculture teachers feel they have to make a choice between being an agriculture teacher and rearing children, but not both. As the proportion of females entering the profession

continues to increase, agricultural education needs to find ways to make the work and family domains more compatible.

Interesting, however, is that although the age of children was found to be a significant predictor of turnover intentions among agriculture teachers, the number of children was not. Perhaps, this is because young children up to about age five do not attend school and generally require daily care by a parent or caregiver during the day. Regardless of whether a parent must provide caregiving to one or more children, if one of the children is young enough to require ongoing parental attention, the parent's time must be spent in the family role, thus limiting his/her ability to leave the family domain for work.

Contrary to much of the literature on teacher attrition (Grissmer & Kirby, 1987; Guarino et al., 2006; Kirby & Grissmer, 1993), years of teaching experience was not found in this study to be a significant factor in the model predicting turnover intentions. The literature in education suggests that teachers tend to leave their jobs early in their career and then late in their career when they are close to retirement age. However, little is known about the pattern of attrition among agriculture teachers specifically, which is why more research is needed on this topic.

Neither work nor family salience were significant predictors of agriculture teachers' turnover intentions. It is expected that work salience would not predict turnover intentions, because if teaching agriculture is important and central to one's life, they naturally would not want to quit. However, higher family salience would place priorities more with family than work. In this study, agriculture teachers reported high salience for

both work and family roles. These findings suggest the need for more research to determine how different attributions of work and family salience influences WFC and turnover intentions among agriculture teachers.

Question #7

The findings indicate as WIF increases, so does turnover intentions, implying that agriculture teachers who struggle to find adequate balance between work and family roles will be more likely to leave the profession early (Chaney, 2007; Crutchfield et al., 2013). This finding is consistent with much of the literature finding turnover intentions and actual turnover is indeed an outcome of WFC (Allen et al., 2000; Grandey & Cropanzano, 1999; Greenhaus et al., 1997; Netemeyer et al., 1996). Furthermore, because WIF was a significant factor in the model predicting turnover intentions, while FIW was not, the need for improving work domain characteristics of agriculture teachers exist. These findings have implications for addressing the teacher shortage crisis. School administrators and the agricultural education profession should increase awareness of the conflict agriculture teachers experience when work responsibilities interfere with family life, creating the potential for teacher turnover.

Recommendations

The following areas are recommended for future policy and practice:

1. An increased recruitment effort should be made to attract a diverse group of students who better represent the demographics of the nation. These efforts should also take into consideration the decreased proportion of males entering the profession and find ways to maintain a gender balance.

2. Published materials and workshops regarding work-family balance and time management should be developed and provided as part of agriculture teachers' professional development training. Since conflict tends to originate in the workplace (WIF), workshops and printed materials addressing time management within the workplace would be useful. These type of workshops could be especially useful for agriculture teachers in the midst of a major life event, such as marriage or childbirth, when work and family salience levels must be adjusted.
3. Continued efforts should be made to provide agriculture teachers with professional development of program management skills in order to improve their work efficiency and reduce the work hours needed to do their jobs.
4. Increased efforts should be made from policymakers and school administrators to encourage work-life balance among teachers.
5. Policymakers and administrators should seek to improve the working conditions of teachers with families by providing flexible work options. One example might include offering part-time positions so teachers have another option besides completely quitting. Other examples might include an online and in-person hybrid teaching delivery model, establishing four-day work weeks, and providing early childhood/preschool programs within the school.
6. Teacher preparation programs should find ways to meet the needs of potential agriculture teachers with responsibilities in multiple life roles. With a shortage of teachers in agricultural education, the profession should make a concerted effort

to work with potential teachers in different life stages in providing alternative routes of certification.

7. Policymakers should work to provide career advancement opportunities within the teaching profession.
8. State staff and local administrators should seek to find ways to reduce the workload of teachers by streamlining paperwork and other time-consuming activities that teachers are required to complete. In addition, where resources are available, local school administrators should seek to hire administrative assistants, paraprofessionals, part-time teachers, or other staff to help alleviate the excessive workload of agriculture teachers associated with managing a complete agricultural education program.
9. School administrators, policymakers, and the agricultural education profession should work to create and promote policies that reflect a family-friendly culture both within agricultural education and within local schools and districts.

The following areas are recommended for future research:

1. Research should be conducted addressing such questions as; why do agriculture teachers invest so many hours doing work related activities? What prevents them from working fewer hours in order to spend more time with family? What type of work is completed by agriculture teachers on weekends and why?
2. Since this study focused on time-based WFC, more research should be conducted examining the antecedents and consequences of strain-based and behavior-based conflict among agriculture teachers.

3. Qualitative research exploring the boundaries and interface between the work and family domains of agriculture teachers could provide valuable insight into the day to day struggles that agriculture teachers face as they balance work and family responsibilities.
4. National and longitudinal research studies should be conducted exploring the attrition patterns within agricultural education.
5. More research should be conducted to determine how different attributions of work and family salience among agriculture teachers influences WFC and turnover intentions.
6. More research involving male agriculture teachers and their perceptions and struggles with balancing work and life roles should be conducted.
7. Research should be conducted on potential discrepancy in pay among men and women agriculture teachers, especially regarding stipends and other pay-based opportunities.
8. Research should be conducted exploring the culture within agricultural education departments to identify specific cultural practices and artifacts that both enable and discourage a family-friendly perception of the workplace.
9. Research of temporary leavers (Wayne, 2000) in agricultural education should be conducted to determine such factors as, why they left, why they returned, and the types of careers they pursued after leaving teaching. This research could provide valuable information in addressing teacher turnover.

10. As the agricultural education profession's demographics change, a five and ten year follow up study with this population should be conducted.
11. In an effort to increase teacher retention, more research in agricultural education should be conducted to explore the relationship between family variables and positive spillover.
12. A similar research study should be conducted in order to determine if agriculture teachers differ from other teachers and from other professional occupations in relation to WFC and turnover intentions.
13. Research should be conducted among teachers who left the profession to determine if part-time employment or more flexible work hours is a feasible solution to WFC and teacher turnover.

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APPENDICES

Appendix A

Ag Teacher Work, Family, and Career Intentions Survey

Thank you for taking the time to complete this important survey! Your input is a valuable contribution to your profession and fellow agriculture teachers across the country.

Please complete each question as accurately as possible.

When you have completed the survey, a message screen will appear indicating successful completion.

Do not click the back button/arrow on your internet browser. Please use the “Back” and “Next” buttons to navigate through the survey.

Click the “Next” button to begin the survey.

For purposes of this study, we define family as “any and all committed relationships that might influence how you invest your time in your non-work life.” (Examples may include but are not limited to spouse, live-in partner, parent, caregiver, or committed relationship).

Do you consider yourself to be in a committed relationship that influences how you invest your time outside of work?

- ☐ Yes
- ☐ No

Besides agriculture teacher, what other life roles do you actively participate in? (check all that apply)

- ☐ Parent (e.g. mother, father)
- ☐ Spouse (e.g. husband, wife, widowed)
- ☐ Student
- ☐ Community leader (e.g. 4-H leader, civic leader)
- ☐ Church member (e.g. member, leader, volunteer)
- ☐ Coach- non agricultural education (e.g. athletics, other club)
- ☐ Employee/ manager/ owner/ other employment outside of teaching- (e.g. another job outside of teaching)
- ☐ Other: please specify _____

Please indicate your level of agreement for each statement by clicking the corresponding bubble.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
The most important things that happen to me involve my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am fully involved in my work most of the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work is only a small part of my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work is considered central to my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My personal life goals are work-oriented.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The major satisfaction in my life comes from work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate your level of agreement for each statement by clicking the corresponding bubble.

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Somewhat Agree (4)	Agree (5)	Strongly Agree (6)
The most important things that happen to me involve my family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am fully involved in my family most of the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family is only a small part of my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family is considered central to my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My personal life goals are family-oriented.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The major satisfaction in my life comes from family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: For purposes of this study, we define family as “any and all committed relationships that might influence how you invest your time in your non-work life.” (Examples may include but are not limited to spouse, live-in partner, parent, caregiver, or committed relationship).

Please indicate your level of agreement for each statement by clicking the corresponding bubble.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
My work keeps me from my family activities more than I would like.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The time I must devote to my job often keeps me from participating in household activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have to miss family activities due to the amount of time I must spend on work responsibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The time I spend on family responsibilities often interferes with my work responsibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The time I spend with my family often causes me to miss important work activities and responsibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often have to miss work activities due to the amount of time I must spend on family responsibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: For purposes of this study, we define family as “any and all committed relationships that might influence how you invest your time in your non-work life.” (Examples may include but are not limited to spouse, live-in partner, parent, caregiver, or committed relationship).

Please indicate your level of agreement for each statement by clicking the corresponding bubble.*

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
I am able to balance quality time between my work and my family commitments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to balance work demands without making unreasonable compromises on family responsibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to have a fulfilling personal life and adequately perform my work responsibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: For purposes of this study, we define family as “any and all committed relationships that might influence how you invest your time in your non-work life.” (Examples may include but are not limited to spouse, live-in partner, parent, caregiver, or committed relationship).

Please indicate your level of agreement for each statement by clicking the corresponding bubble.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
I feel comfortable sharing my family issues with colleagues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My administration really cares about the effects that work demands have on my personal life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My workplace has a family supportive culture.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The school and district policies where I work support teachers with family obligations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The agriculture teaching profession has a family supportive culture.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My co-workers are understanding when I have family business to take care of.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: For purposes of this study, we define family as “any and all committed relationships that might influence how you invest your time in your non-work life.” (Examples may include but are not limited to spouse, live-in partner, parent, caregiver, or committed relationship).

Approximately how many **total hours** do you **actually** invest in your teaching job during a **regular work week** (Monday through Friday) during the current school year? Please give a whole number, not a range.

Ideally, how many **total hours** would you **prefer** to invest in your teaching job during a **regular work week** (Monday through Friday) during the school year? Please give a whole number, not a range.

Of all the days you are not contracted to work as an agriculture teacher (e.g. **weekends, summer, or holidays**), approximately how many of those days (total days) do you **actually** invest in your agriculture teaching job **during the calendar year**? Please give a whole number, not a range.*

Of all the days you are not contracted to work as an agriculture teacher (e.g. **weekends, summer, or holidays**), approximately how many of those days (total days) would you **prefer** to invest in your agriculture teaching job **during the calendar year**? Please give a whole number, not a range.*

Approximately how many **total weekend hours per month** do you **actually** invest in your teaching job during the regular school year? Please give a whole number, not a range.

Ideally, how many **total weekend hours per month** would you **prefer** to invest in your teaching job during the regular school year? Please give a whole number, not a range.

Approximately how many **contracted work days** during the **most recent summer** did you **actually** spend doing activities related to your job as an agriculture teacher? Please give a whole number, not a range.*

Ideally, how many **contracted work days during the summer** would you **prefer** to spend doing activities related to your job as an agriculture teacher? Please give a whole number, not a range.*

During a **full calendar year**, approximately how many **nights** do you **actually** spend **away from home** due to work-related activities (e.g. hotel stays)? Please give a whole number, not a range.*

During a **full calendar year**, approximately how many **nights** would you **prefer** to spend **away from home** due to work-related activities (e.g. hotel stays)? Please give a whole number, not a range.*

Demographic Information

What is your age in years?

What is your sex?

- ☐ Female
- ☐ Male

What best describes your racial/ethnic identity?

- ☐ White, European American, Non-Hispanic
- ☐ Asian or Asian American
- ☐ Black, African American, Non-Hispanic
- ☐ Middle Eastern or Middle Eastern American
- ☐ North African or North African American
- ☐ Pacific Islander
- ☐ Hispanic or Latino American
- ☐ American Indian or Alaskan Native
- ☐ Other (Please specify)

☐ Decline to respond

What is your marital status? (please check one)

- ☐ Now married
- ☐ Widowed
- ☐ Divorced
- ☐ Separated
- ☐ Never married

How many children do you have responsibility for as a parent or caregiver? (if no children, enter "0")

List the ages of the children for whom you have responsibility as a parent or caregiver? (Please use whole numbers followed by a comma between each child's age. Example: 4, 9, 11. Please round UP to the nearest year. Example: a 5 month old child would be entered as "1").

Do you have responsibility for an adult (e.g. elderly or handicapped) in which you are a primary caregiver?

- ☐ Yes
- ☐ No

Do you have a spouse/partner that works outside of the home either part-time or full time?

- ☐ Yes
- ☐ No

On average, how many hours per week does your spouse/partner work outside of the home? (Please use a whole number, not a range)

Including the current year, how many years have you been employed as an agriculture teacher? (Please use a whole number)

Have you ever taken a leave from teaching for an extended period of time (longer than sick leave coverage)?

- ☐ Yes
- ☐ No

In years, how long was your leave from teaching?

For what reason did you take a leave from teaching?

Including yourself, how many agriculture teachers are there in your department?

Does your school or district have a mentoring program for new teachers?*

- ☐ Yes
- ☐ No
- ☐ I don't know

Which of the following best describes the location of the school where you teach?

- ☐ Urban
- ☐ Suburban
- ☐ Rural

Please select the statement that best describes your work situation.

- ☐ I have a full-time teaching assignment to teach agriculture
- ☐ I have a full-time teaching assignment which consists of teaching courses that are not considered agriculture. (Please indicate which courses you teach that are not considered agriculture courses below)

- ☐ I do not have a full-time teaching assignment (e.g. part-time)
- ☐ I do not teach any agriculture classes

For all of the classes you teach, what is the average number of students per class? (please use a whole number, not a range)

Are you certified to teach agriculture through a university teacher licensure program?

- ☐ Yes
- ☐ No

During the current school year, what is your annual teaching salary?

- ☐ Under \$25,000
- ☐ \$25,000-\$34,999
- ☐ \$35,000-\$44,999
- ☐ \$45,000-\$54,999
- ☐ \$55,000-\$64,999
- ☐ \$65,000-\$74,999
- ☐ \$75,000-\$84,999
- ☐ \$85,000 or more

To show appreciation for your time and effort in completing the survey, a lottery drawing of two \$100, two \$50, and five \$20 cash prizes will be held upon completion of the study.

- ☐ YES, I am interested in being entered into the lottery drawing for a chance to win one of the cash prizes.
- ☐ NO, I am not interested in being entered into the lottery drawing.

Please enter your email below. This email will be used to contact you in the event you are the winner of one of the cash prize drawings.

*Note: The survey items noted with asterisks were collected but not utilized for analysis in this dissertation.

Appendix B

Pre-Notice E-mail to Participants

SUBJECT: Notification of an important upcoming agricultural education survey

Dear {NAME},

The profession needs your help! The agricultural education profession is facing a nationwide teacher shortage because of teachers leaving the profession early. You have been selected to participate in a very important survey intended to help the agricultural education profession understand why teachers remain in or leave the profession early. In order for us to gather this information, we need your help. By participating, you can help strengthen the agricultural education profession nationwide.

In the next few days, you will receive an email asking you to participate in the Agriculture Teacher Work, Family, and Career Intentions Survey.

This 15 minute survey asks for your opinions and demographic information pertaining to both work and non-work life roles. The results of the survey will be used to help identify factors that contribute to teachers' intent to remain or exit the profession early. This information can lead to opportunities for improvements and policy changes in the profession to make agricultural education a more desirable profession in which to remain.

To show our appreciation for your time and effort in completing the survey, a lottery drawing of two \$100, two \$50, and five \$20 cash prizes will be held upon completion of this study. If you are interested in participating in this lottery drawing, you will be able to indicate so at the end of the survey. Please look for the email in the coming week to take the survey and enter the drawing.

If you have any questions about the upcoming survey, please feel free to contact Tyson Sorensen (Tyson.Sorensen@oregonstate.edu). Thank you in advance for helping to improve the profession.

Sincerely,

Tyson J. Sorensen
Graduate Student
Oregon State University

Jonathan J. Velez, Ph. D.
Associate Professor
Oregon State University

Appendix C

Cover Letter (E-mail) and Consent Agreement

Dear {NAME},

You recently received an e-mail regarding your participation in a very important agricultural education research study aimed at improving teacher retention. This study will help identify how work and family factors contribute to agriculture teachers' intent to remain or exit the teaching profession early. Your input is extremely valuable in guiding our efforts to improve the agriculture teacher profession. By participating, you will be providing valuable service to your profession, as it may lead to policy changes and opportunities for improvements that can improve conditions for agricultural educators across the country.

The survey will take approximately 15 minutes. You will be able to exit the survey at any time and return to the spot you left off using the link in this e-mail. Again, your responses are very important and your participation is greatly appreciated.

For your convenience below is a link to the survey,

{LINK}

To show appreciation for your time and effort in completing the survey, a lottery drawing of two \$100, two \$50, and five \$20 cash prizes will be held upon completion of this study. If you are interested in participating in this lottery drawing, you will be able to indicate so at the end of the survey.

Sincerely,

Tyson J. Sorensen
Graduate Student
Oregon State University

Jonathan J. Velez, Ph. D.
Assistant Professor
Oregon State University

Additional information about participation in this study

Dear Agriculture Teacher,

You have been identified as an agriculture teacher and selected to voluntarily participate in an important nation-wide research study. This research study is intended to assess the various aspects of both work and family roles as they relate to agriculture teachers' intention to remain or exit the teaching profession early. By participating in this study, you will greatly assist the profession in understanding why teachers might decide to leave the teaching profession early, thereby providing insights into solutions to the agriculture teacher shortages across the country.

This important survey will take approximately 15 minutes to complete. There are no known risks to your participation in completing this questionnaire. Your participation is completely voluntary and you may choose not to participate at any time. There is no cost to you except your time. You may answer some or none of the questions. Confidentiality will be kept to the extent permitted by the technology being used. Although every precaution will be taken to insure confidentiality, the security of information collected from you online cannot be guaranteed. Information collected online can be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses.

If you have questions about your rights or welfare as a participant, please contact the Oregon State University Institutional Review Board (IRB) Office, at (541) 737-8008 or by email at IRB@oregonstate.edu. Completing this questionnaire implies that you are giving permission for the researcher to use your responses for research purposes. If you have any questions or concerns about the study, you may contact Tyson Sorensen at Tyson.Sorensen@oregonstate.edu.

Thank you for your time!

Appendix D

Follow-Up E-mails to Participants

Dear {Name},

You recently received an e-mail regarding your participation in a very important research study that will benefit agricultural education and agriculture teachers nationwide. Many of your colleagues have responded to this important survey, but we need your input as well. Your participation will help the agricultural education profession understand why teachers remain in or leave the profession early and can lead to opportunities for improvements and policy changes that will benefit agriculture teachers nationwide.

The survey will take approximately 15 minutes. You will be able to exit the survey at any time and return to the spot you left off using the link in this e-mail. Again, your responses are very important and your participation is greatly appreciated.

If you have already completed the survey, we want to express our sincere thanks for participation.

For your convenience below is a link to the survey,

{LINK}

As a reminder, to show appreciation for your time and effort in completing the survey, a lottery drawing of two \$100, two \$50, and five \$20 cash prizes will be held upon completion of this study. If you are interested in participating in this lottery drawing, you will be able to indicate so at the end of the survey.

Sincerely,

Tyson J. Sorensen

Graduate Student

Oregon State University

Jonathan J. Velez, Ph. D.

Assistant Professor

Oregon State University

Dear {Name},

As of today, we have not yet received your Agriculture Teacher Work, Family, and Career Intentions survey. The Agricultural Education profession values your input and would greatly appreciate your response. Now that the National FFA Convention has passed, we hope you can find time in your schedule to complete this important survey. We understand this is a busy time of year for most agriculture teachers, and that is why this short survey is so important to the profession. Your responses will help agricultural education better understand the challenges of teachers so that improvements can be made to make your job more satisfying.

As a reminder, the survey will take approximately 15 minutes. **To show appreciation for your participation, upon completion of the survey, you will be entered into a lottery drawing for two \$100, two \$50, and five \$20 cash awards.**

For your convenience below is a link to the survey,

{LINK}

We look forward to hearing from you soon,

Tyson J. Sorensen
Graduate Student
Oregon State University

Jonathan J. Velez, Ph. D.
Assistant Professor
Oregon State University

Dear {NAME},

There is still time to complete the Agriculture Teacher Work, Family, and Career Intentions survey, but this opportunity will end by the end of the day tomorrow. The Agricultural Education profession values your input and would greatly appreciate your response.

As a reminder, the survey will take approximately 15 minutes. **To show appreciation for your participation, upon completion of the survey, you will be entered into a lottery drawing for two \$100, two \$50, and five \$20 cash awards.**

For your convenience below is a link to the survey,

{LINK}

We look forward to hearing from you soon,

Tyson J. Sorensen

Graduate Student

Oregon State University

Jonathan J. Velez, Ph. D.

Assistant Professor

Oregon State University