

A QUANTITATIVE EXAMINATION OF THE RELATIONSHIP BETWEEN
ORGANIZATIONAL COMMITMENT, WORK-LIFE BALANCE
AND VOLUNTARY TURNOVER INTENTION OF
WOMEN FACULTY IN THE STEM DISCIPLINES WITHIN THE UNITED STATES

by

Sherry L. Mathews

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Business Administration

Liberty University, School of Business

December 2018

Abstract

Higher education institutions in the United States experience high levels of faculty turnover (Klein & Takeda-Tinker, 2009). Colleges and universities have allowed the phenomenon of high turnover of faculty to become a cultural norm (Figueroa, 2015). Colleges and universities within the United States are specifically facing challenges retaining women faculty in the STEM (Science, Technology, Engineering and Mathematics) disciplines (Burnett, Bilen-Green, McGeorge, & Anicha, 2012; Carrigan, O’Leary, Riskin, Yen, & O’Donnell, 2017; Hill, Corbett, & St. Rose, 2010). In this quantitative, correlational study, the relationship of organizational commitment, work-life balance and voluntary turnover intention of women faculty in STEM disciplines working at colleges and universities within the United States was examined. This study was based on the Social Exchange Theory, Mobley’s Job Satisfaction Model and the Three-Component Model of Organizational Commitment. Four hundred and twenty-four women faculty in the STEM disciplines across the United States completed a survey that asked them about their organizational commitment (affective, continuance and normative), work-life balance and turnover intention. The resulting analysis indicated that the relationship between these variables was statistically significant, but ranged from weak to moderate, with affective commitment having the most impact on turnover intention. This study may enable human resource professionals and organizational leaders to better provide human resource programs that may decrease turnover intention, and ultimately turnover, of women faculty in the STEM disciplines at colleges and universities within the United States.

Keywords: Women, STEM, Organizational Commitment, Affective Commitment, Continuance Commitment, Normative Commitment, Work-Life Balance, Turnover Intention

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Date: _____

Dr. Emily Knowles, Dissertation Chair

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Dedication

This dissertation is first and foremost dedicated to my husband, Brent. When you passed me that note in church 26 years ago asking me to marry you, I thought you were crazy! At the same time I could not imagine living a day of my life without you. We got married not knowing what the future held for us, but simply trusting that our love was enough to get us by. I am so thankful for our love; it is even bigger, stronger and better today than I ever imagined. I could not have finished this dissertation without your support. Thank you for all the sacrifices you have made and all the time we have missed together so that I can get this done. We can now go camping whenever you want and see all the koi ponds along the way!

Makenzie, you have watched me go to school your entire life. There are probably more times than I am aware of when you needed me, but I was busy doing homework. My hope is that you have always known I was there for you. I love you and am so very proud of you because you have always been true to who you are. I hope that never changes. You will always be the Rory to my Lorelei.

Dad, you are the smartest, hard working person I know. You have shown me that honesty and integrity are more important than anything else. You are a man of few words, but I learned early on to live by your example. Thank you for instilling in me your work ethic. Without that, I would not be where I am today.

Mom, you have such a big heart. You are willing to give of yourself almost to a fault. Thank you for showing me how important it is to share so much of yourself with those that you love the most.

Chief and Lucy, you have spent many hours in my office with me through this process. You have made this journey less lonely and provided a supportive ear when needed.

Acknowledgements

Numerous people have inspired me throughout this journey. There is not enough time or words to thank every one of them, but there are a few I would like to mention.

My sweet, dear friend Jackie, you have been through your own challenges in the last several years. Even though you are fighting your own personal battles, every time I talk to you, you always ask me how my dissertation was coming and offered sweet words of encouragement and support. You have no idea that it wasn't those words, but watching you face your challenges head on with continuous strength and optimism that kept me motivated to get past this hurdle. If you could face your challenges head on – so could I! Cancer Sucks!

Donald Hudson, you likely have no idea how you helped make this happen. Every time I saw you in the hallway or when you stopped by my office, you always asked how my dissertation was going (or more specifically, if I decided what I was going to do it on). It was a long journey, but just knowing that there were people out there genuinely interested in my journey and success kept me going. Thank you!

Mr. Ed McNicholas, thank you so much for giving me the nickname Dr. Sherry. After all, if you were already calling me that – how could I possibly let you down?

Last, but certainly not least, I promised a very dear friend that I would quote him in my dissertation. Scott, you planted the seed that I could one day obtain my doctorate when you handed me a card when I was graduating with my bachelor's degree. On the outside of the envelope, it said "Dr. Sherry Mathews." Because you planted the seed, you do, in fact, get to be quoted in this dissertation so here it goes.

“A man of small stature once said, ‘HOLY CATS SHERRY MARIE YOUR GOING TO DO WHAT...a doctor of what?’ That same wise man stated that too many cheeseburgers with mustard, pickles and lettuce only will make a person healthy, wealthy and wise.”

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Section 1: Foundation of the Study

Higher education institutions in the United States experience high levels of faculty turnover (Klein & Takeda-Tinker, 2009). Colleges and universities have allowed the phenomenon of high turnover of faculty to become a cultural norm (Figueroa, 2015). Colleges and universities within the United States are specifically facing challenges retaining women faculty in the STEM (Science, Technology, Engineering and Mathematics) disciplines (Burnett, Bilen-Green, McGeorge, & Anicha, 2012; Carrigan, O'Leary, Riskin, Yen, & O'Donnell, 2017; Hill, Corbett, & St. Rose, 2010). In this study, the relationship of organizational commitment, work-life balance and voluntary turnover intention of women faculty in STEM disciplines working at colleges and universities within the United States was examined.

Background of the Problem

This study focused on the business problem of high turnover of women faculty in STEM disciplines working at colleges and universities within the United States. Although there has been research regarding faculty attrition, there are few studies that focus on women faculty in the STEM disciplines (Burnett et al., 2012). Replacing faculty members, specifically women faculty in the STEM disciplines, is costly (Burnett et al., 2012). The direct costs of losing women faculty in the STEM disciplines include recruiting and training replacements (Burnett et al., 2012). The indirect costs of losing women faculty in the STEM disciplines include fewer women to attract female students, lack of diversity and loss of competitive advantage for the university and the United States economy as a whole (Burnett et al., 2012). For colleges and universities to remain competitive, they must retain women faculty in the STEM disciplines (Burnett et al., 2012). The research was viewed through the lens of organizational commitment (affective, continuance and normative), work-life balance and voluntary turnover intention.

The first concept that this research focused on is organizational commitment.

Organizational commitment is a motivational construct that indicates how committed an employee is to an organization and is considered a pre-cursor to employee turnover (Allen & Meyer, 1996; Sloan, Buckham, & Lee, 2017). Organizational commitment is the bond the employee has with the organization that makes the employee want to stay with the organization and help the organization meet its goals and objectives (Agarwal & Sajid, 2017; DeLotell & Cates, 2016). Organizational commitment is the employee's acceptance of the organization's goals and strategies, the willingness of the employee to work for the organization and the employee's motivation to remain with the organization (Bulut & Culha, 2010). Organizational commitment is an important factor in understanding employee behavior in organizations (Mowday, Porter, & Steers, 1982). Organizational commitment is a reliable predictor of voluntary employee turnover (Bartlett, 2001; Saha, 2016). High levels of organizational commitment leads to decreased turnover, limited tardiness, low absenteeism and, in some situations, enhanced job performance (Riveros & Tsai, 2011). Organizational commitment and turnover intention are two specific work-related attitudes that affect retention (Mesmer-Magnus & Viswesvaran, 2005).

The second concept that this research focused on is work-life balance and the challenges that affect work-life balance. Work-life balance is the equality and balance of life where both work and life are equally engaging and satisfying (Greenhaus, Collins, & Shaw, 2003). Women, in particular, make decisions that ultimately leave them in a dilemma – devotion to career or devotion to family (Simard, Henderson, Gilmartin, Schiebinger, & Whitney, 2008). Women report higher levels of work-life conflict based on family expectations (Eby, Casper, Lockwood, Bordeau, & Brinley, 2005). Women are more likely to leave their jobs for family-related reasons

(Lambert & Hogan, 2009). Work-life balance is a barrier for women in technical fields (Simard et al., 2008). Female academic professionals in the STEM disciplines are more likely to struggle with work-life balance compared to academic professionals in non-STEM fields (June, 2012).

The third concept that this research focused on is voluntary turnover intention; specifically, the potential relationship between organizational commitment, work-life balance and voluntary turnover intention. Organizational commitment and work-life balance are important topics to study in order to understand the retention challenges of women faculty in STEM disciplines. Researchers have connected work-life balance with increased organizational commitment and reduced turnover intention (Eby et al., 2005; Watanabe & Falci, 2017).

Employee turnover is one of the highest costs to an organization (Lalitha & Singh, 2014). Turnover has contributed to direct workplace costs of 68 million dollars as of 2008 (Figueroa, 2015; Jo, 2008). Turnover also contributes to indirect costs such as time, knowledge, morale, and future recruitment challenges (Burnett et al., 2012). On a global scale, attracting and retaining more women in the STEM workforce would help the United States become more competitive in the global economy (Griffith & Dasgupta, 2018; Margolis & Fisher, 2002; Pascale, 2018; Solanki & Xu, 2018). Identifying the commitment level of employees provides organizations with a way to assess turnover intention (Benton, 2014). With the documented turnover challenges of higher education institutions in mind, this study specifically focused on the relationship between the organizational commitment, work-life balance and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

Problem Statement

The general problem to be addressed is the high rate of voluntary turnover of higher education faculty members (Gardner, 2012; Wong & Heng, 2009). Specifically, women faculty members in STEM disciplines voluntarily leave colleges and universities in the United States at higher rates than males at all levels (Burnett et al., 2012; Gumpertz, Durodoye, Griffith, & Wilson, 2017; Thomas, Poole, & Herbers, 2015). Faculty turnover is costly to higher education organizations (Xu, 2008). Recruitment costs in STEM have escalated and competition for faculty has intensified (Burnett et al., 2012). The estimated cost associated with replacing a departing STEM faculty member is \$300,000 for junior professors and \$700,000 for senior professors (Lawrence, Celis, Kim, Lipson, & Tong, 2017). Since 2001, the National Science Foundation has spent over \$130 million in grants, partially to increase the recruitment and retention of female faculty in STEM fields (Taylor, Beck, Lahey, & Froyd, 2017). The loss of women faculty in the STEM disciplines specifically contributes to indirect costs such as loss of knowledge, diversity, competitive advantage, and reduced recruitment of female students in the STEM fields (Burnett et al., 2012).

Female academic professionals in the STEM disciplines are more likely to struggle with work-life balance compared to non-STEM academic professionals (June, 2012). Organizational commitment, work-life balance and voluntary turnover intention are the variables for this study. The general business problem is the high rate of voluntary turnover of faculty members in higher education organizations (Gardner, 2012; Wong & Heng, 2009). The specific business problem is the high rate of voluntary turnover of women faculty in STEM disciplines at colleges and universities within the United States (Burnett et al., 2012; Gumpertz et al., 2017; Thomas, Poole, & Herbers, 2015).

Purpose Statement

The purpose of this quantitative, correlational study was to examine the relationship between organizational commitment, work-life balance and voluntary turnover intention in women faculty in the STEM disciplines working at colleges and universities within the United States. The results of this study may help leaders in colleges and universities as they make strategic human resource decisions, specifically those that affect women in the STEM disciplines. The implications of this research could yield information useful for the human resource budgets of colleges and universities as replacement costs of employees potentially decrease because of reduced turnover.

Nature of the Study

This research used a quantitative method and a correlational design. The research process began with deciding the research question and the data collection method (Knox, 2015). The three primary methods of research include qualitative, quantitative and mixed methodology (Farrelly, 2013; Landrum & Garza, 2015). The data and questions determine whether quantitative or qualitative methods are used (Landrum & Garza, 2015). Quantitative and qualitative methods also answer fundamentally different questions and knowledge claims (Landrum & Garza, 2015). Mixed methods use elements from both quantitative and qualitative research methods (Siddiqui & Fitzgerald, 2014). The specific method chosen for this research project was the quantitative method. The variables for this study were organizational commitment (affective, continuance and normative), work-life balance and voluntary turnover intention. The research questions specifically asked about the relationship between these variables. The research method and design, as discussed below, were determined because of the variables and the research questions.

Discussion of Method. The quantitative method assists with numerical analysis and data to test and verify relationships (Farrelly, 2013; Landrum & Garza, 2015; Yilmaz, 2013). In quantitative research, statistics analyze data, in the search for an unbiased result (Farrelly, 2013). Researchers use qualitative methods help gain a better understanding of this population's beliefs, experiences, attitudes, behaviors and interactions (Pathak, Jena, & Kalra, 2013). The quantitative approach, as opposed to a qualitative methodology, was the preferred choice for the current study as the concepts provide quantifiable data. In addition, the quantitative methodology was instrumental in the attempt to reject or accept the null hypotheses in determining if a correlation existed between the dependent and independent variables in an efficient manner. The next decision made was in regards to design, as discussed below.

Discussion of Design. Quantitative research involves four main designs to include descriptive, correlational, experimental and quasi-experimental (Chudleigh & Smith, 2015; Turner, Balmer, & Coverdale, 2013). Correlational research explores associations between variables (Chudleigh & Smith, 2015; Gall, Gall, & Borg, 2007; Turner, Balmer, & Coverdale, 2013). The quantitative, correlational method of data analysis determined if there was a relationship between organizational commitment (affective, continuance and normative), work-life balance and voluntary turnover intention for women faculty in the STEM disciplines at colleges and universities within the United States. In a non-experimental quantitative correlational study, the aim is to determine the relationship between an independent variable and a dependent variable (Chudleigh & Smith, 2015). Quantitative research designs, to include experimental and quasi-experimental designs, were not appropriate because the variables were not manipulated (Pierce, 2013). The variables were examined, not influenced, to determine if a

correlational relationship exists. Ultimately, because of the nature of the research questions the correlational design was chosen.

Summary of the Nature of the Study. The independent variables for this study are organizational commitment and work-life balance of women faculty members in the STEM disciplines working at colleges and universities within the United States. The independent variable, organizational commitment, was studied utilizing the three-component model of organizational commitment. This model further identified specific types of organizational commitment as either affective, continuance or normative. These three types of organizational commitment will be discussed in detail in the theoretical framework and the literature review. The dependent variable for this study was the voluntary turnover intention of women faculty members in the STEM disciplines working at colleges and universities within the United States. This study focused on the relationship between these variables, which ultimately led to the quantitative, correlational research design and method.

Research Questions

As discussed in the previous section, this study was a quantitative, correlational examination of the relationship between the three types of organizational commitment (affective, continuance and normative), work-life balance and voluntary turnover intention among women faculty members in the STEM disciplines employed at colleges and universities within the United States. The first step in conducting scholarly research is developing a research question (Zhu, 2015). The research questions listed below addressed the research problem by exploring the relationship between organizational commitment, work-life balance and voluntary turnover intention. The following research questions guided the study:

RQ1a. Is there a relationship between organizational affective commitment and voluntary turnover intention of women faculty in the STEM disciplines within the United States?

RQ1b. Is there a relationship between organizational normative commitment and voluntary turnover intention of women faculty in the STEM disciplines within the United States?

RQ1c. Is there a relationship between organizational continuance commitment and voluntary turnover intention of women faculty in the STEM disciplines within the United States?

RQ2. Is there a relationship between work-life balance and voluntary turnover intention of women faculty in the STEM disciplines within the United States?

Hypotheses

In quantitative research, a hypothesis is a prediction that the researcher expects to find regarding the outcomes or relationships among variables (Creswell, 2014; Ingram-Broomfield, 2014). In order to answer the aforementioned research questions, the following hypotheses were explored in this study. Each research question was aligned with a specific null and alternate hypothesis. The first three hypotheses examined the relationship between the three types of organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States. The last hypothesis examined the relationship between work-life balance and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

H1a: There is a statistically significant relationship between affective organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

H1a₀: There is no statistically significant relationship between affective organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

H1b: There is a statistically significant relationship between continuance organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at college and universities within the United States.

H1b₀: There is no statistically significant relationship between continuance organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

H1c: There is a statistically significant relationship between normative organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

H1c₀: There is no statistically significant relationship between normative organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

H2: There is a statistically significant relationship between work-life balance and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

H2₀: There is no statistically significant relationship between work-life balance and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

Theoretical Framework

Theories provide an opportunity for interrelated concepts to converge in order to “describe, predict, and explain phenomena” (Karnick, 2013, p. 29). Theories provide a basis, founded in research, to predict behaviors or events (Creswell, 2014; Grant & Osanloo, 2014). A theoretical framework provides structure and vision for the study (Grant & Osanloo, 2014). The first theory used in this study was the Social Exchange Theory. The second theory was Mobley’s Job Satisfaction Model (Mobley, 1977). Finally, the third theory was the Three-Component Model of Organizational Commitment (Meyer & Allen, 1997). Each of these theories is briefly discussed in the next few paragraphs. The literature review will provide a more in-depth discussion of these theories. Additionally, the last paragraph of this section will describe how this theoretical framework connects to the variables (organizational commitment, work-life balance and voluntary turnover intention), and ultimately the hypotheses of this study.

Social Exchange Theory. Individuals make a series of investments in relationships (Blau, 1964). The Social Exchange Theory focuses on the obligations that result from the employee/employer relationship (Akingbola, 2012). In an organization, each party trades something of value (Mowday, Porter, & Steers, 1982). In the Social Exchange Theory, the employer provides for the employee, and the employee reciprocates with positive attitudes, increased job satisfaction and work involvement (Kloutsiniotis & Mihail, 2017). The Social Exchange Theory focuses on reciprocal actions that have no contractual obligation such as time (Akingbola, 2012). This theory results from voluntary behavior based on trust and gratitude (Akingbola, 2012). The Social Exchange Theory has been utilized to explain correlations between human resource practices, employee commitment and employee engagement

(Akingbola, 2012). Engagement is a positive work-related state of mind exemplified by vigor, dedication and absorption (Kloutsiniotis & Mihail, 2017).

Cropanzano and Mitchell (2005) suggested that when the relationship is built on mutual obligations, it can lead to mutual commitments. Social Exchange Theory views interactions as currency creating, where currency is a reciprocal action of equal or greater measure (Emerson, 1976). Positive reciprocity functions as foundational to the Social Exchange Theory (Emerson, 1976). Positive reciprocity is central to Social Exchange Theory; negative exchange implies negative reciprocity (Gouldner, 1960). Emerson (1976) implies that both positive and negative sides of Social Exchange Theory predict outcomes or reactions (Gouldner, 1960). Turnover or turnover intention can be a negative response to a negative employee/employer transaction (Blau, 1964). The Social Exchange Theory is associated with the work-life balance variable in that as work-life balance increase, so do the benefits of staying with the organization. As work-life balance decreases, the costs associated with staying with the organization increase.

Mobley's Job Satisfaction Model. The second theory chosen was a study adopted from Mobley (1977) that explained how job satisfaction might eventually lead to the employee leaving the organization. Mobley's Job Satisfaction Model has dominated turnover research since the 1980's and is still an integral part of turnover research (Wittmer, Shepard, & Martin, 2014). This model identifies a series of steps that employees go through when dissatisfied with their job. The first step is that employees begin thinking about leaving their current position (Mobley, 1977). The second step is that employees start looking at other jobs or alternatives to their current positions (Mobley, 1977). The third step is that the employee develops an intention to leave the organization, which may lead to actually leaving the organization (Mobley, 1977).

This theory was important to this study because it identified steps leading up to actual turnover, or, in other words, identified the process of turnover intention.

Three-Component Model of Organizational Commitment. The third theory taken into consideration for this study was the three-component model of organizational commitment. Meyer and Allen (1997) first established this framework. The three organizational commitment components that this theory was based on include affective commitment, continuance commitment and normative commitment (Meyer & Allen, 1997). These three components of organizational commitment are conceptually different and have distinct implications for employees when deciding to stay with or leave the organization (Allen & Meyer, 1996). This theory was important to this study because an examination of organizational commitment from three perspectives helps researchers to understand why some employees opt to stay with and why some employees opt to leave their organizations.

The Social Exchange Theory, Mobley's Job Satisfaction Model and Meyer and Allen's Three-Component Model of Organizational Commitment work together to provide a solid theoretical framework for this study. The Social Exchange Theory provides a basis for the relationship between the employee and the organization. Mobley's Job Satisfaction Model takes this relationship a step further and describes how employees react when they feel the organization/employee relationship no longer serves them. Finally, the third theory, Meyer and Allen's Three-Component Model of Organizational Commitment, goes into detail about the different types of commitment an employee may experience with an organization, and how these three types of organizational commitment affect the voluntary turnover intention of employees. These theories may explain how work-life balance challenges and organizational commitment affects an individual's decision to stay with or leave the organization.

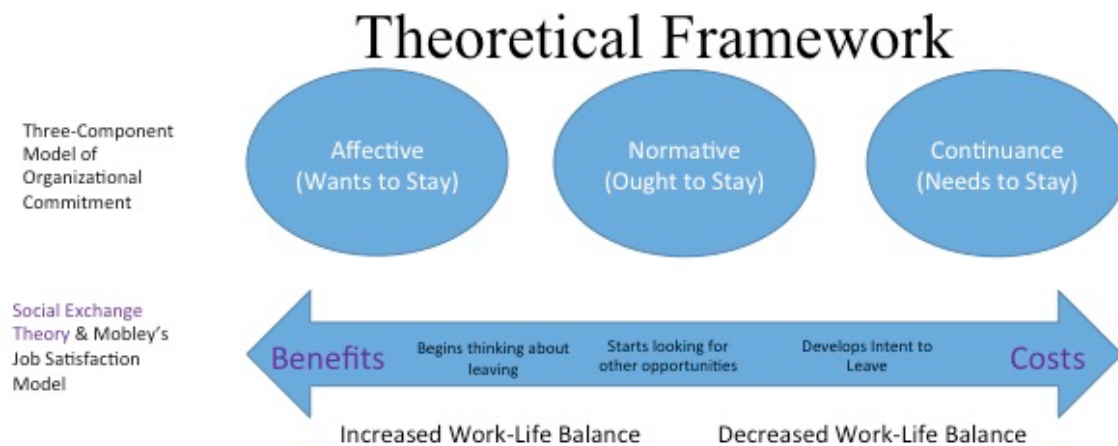


Figure 1. Relationship Between Theories

Discussion of relationships between theories and variables. Figure 1 shown above depicts the relationship between Social Exchange Theory, Mobley's Job Satisfaction Model and Meyer and Allen's Three-Component Model of Organizational Commitment. The top part of the figure describes the three types of organizational commitment (affective, normative and continuance). The figure specifically identifies the primary indicator of each of the types of organizational commitment. For example, an employee with affective commitment wants to stay with the organization, an employee with normative commitment feels as if they ought to stay with the organization and an employee with continuance commitment feels as if they need to stay with the organization.

The bottom part of the figure depicts the relationship between the Social Exchange Theory and Mobley's Job Satisfaction Model. The Social Exchange Theory weighs the benefits and costs of staying with the organization. Work-life balance is a benefit or cost for the employee, which is why it was one of the independent variables for this study. Mobley's Job Satisfaction Model describes the thought process of an employee as they consider other

opportunities along the Social Exchange Theory continuum. For example, on the benefits side of the Social Exchange Theory, an employee may begin thinking about looking at opportunities or comparing the current benefits to other opportunities. As the benefits decrease and the costs increase the employees may look for other opportunities or develop an intent to leave the organization.

Definition of Terms

Definitions of terms establish a common language and clarify any potential misunderstandings (Suddaby, 2010). The following are key terms and definitions utilized throughout the study:

Affective commitment. Affective commitment is the emotional attachment employees have to their organization (Demirtas & Akogan, 2015; Kloutsiniotis & Mihail, 2017; Leroy, Palanski, & Simons, 2012; Meyer & Allen, 1991; Ohana & Meyer, 2015; Riveros & Tsai, 2011; Sothan, Baoku, & Xiang, 2016; Wu & Liu, 2014).

Continuance commitment. Continuance commitment considers the costs associated with leaving the organization (Bartlett, 2001; Meyer & Allen, 1991; Riveros & Tsai, 2011; Sothan, Baoku & Xiang, 2016; Wu & Liu, 2014). Continuance commitment is also defined as the member's attachment to the organization due to perceived social or economic value (Meyer & Allen, 1991).

Normative commitment. Normative commitment is the perceived obligation to stay with the organization (Bartlett, 2001; McCallum, Forret, & Wolff, 2014; Meyer & Allen, 1991; Riveros & Tsai, 2011; Sothan, Baoku, & Xiang, 2016; Sow, Anthony, & Berte, 2016; Yucel, McMillan, & Richard, 2014).

Job Satisfaction. Job satisfaction is an employee's perception, feelings and attitudes towards a job (Al-Zoubi, 2012; Setyaningdyah, Nimran, & Thoyib, 2013; Zahoor, Rafiz, Zia, & Rizwan, 2014).

Organizational commitment. Organizational commitment is the feeling that leads an employee to feel connected to the organization (Bartlett, 2001) or the psychological link between the employee and the organization (Allen & Meyer, 1996). Lam and Liu (2014), as well as Agarwal and Sajid (2017), described organizational commitment as the level of attachment individuals have to their employing organization.

STEM. STEM is an acronym that stands for science, technology, engineering and mathematics that applies to both academic and non-academic disciplines (Noonan, 2017).

Voluntary turnover intention. Voluntary turnover intention is the intent of an employee to leave their employer (Cinar, 2015; Long & Thean, 2011; McInerney, Ganotice, King, Marsh, & Morin, 2015). Turnover intention is the final step of an employee's cognitive process of withdrawal from an organization before the employee actively decides to quit and begins seeking other employment (Mobley, 1977).

Work-life balance. Work-life balance is the equality and balance of life where both work and life are equally engaging and satisfying (Greenhaus, Collins, & Shaw, 2003).

Assumptions

An assumption is an unconfirmed fact that the researcher believes and accepts is true (Madsen, 2013). In other words, assumptions are factors that the researcher believes are true, but not verified (Kent, 2009). Assumptions can both underpin and limit our research (Pettigrew, 2013). This research is based on two major assumptions. The first assumption was that

participants would truthfully and accurately complete the questionnaire. The second assumption was that participants would understand the content of the questionnaire.

Limitations

A limitation is any constraint out of the researcher's control that could potentially influence the study (Aastrup & Halldorsson, 2013; Connelly, 2013). This study utilized established questionnaires, which could be limited by a lack of, or incomplete response by the sample. Missing data is problematic for the analysis and interpretation for any survey (Meyer & Allen, 2004). Secondly, based on the research method and design chosen, only inferences about the population can be made. Causal or explanatory conclusions were not a result of this quantitative, correlational research. Finally, the questionnaire assessed the employee's perceptions of their work through self-reported responses. This research project was limited by the employee's perceptions at the point in time that they completed the questionnaire. Self-reported data could be biased because respondents tend to respond in a way that puts the employee in a positive light, rather than give honest or objective responses (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Delimitations

Researchers use delimitations to set the boundaries of the study (Fan, 2013; Madsen, 2013). The first delimitation of this study was that the results only related to women faculty members in the STEM disciplines employed at colleges and universities within the United States. The results of this study focused on higher education organizations and do not apply to other sectors. Additionally, exclusion criteria also includes individuals that do not agree to the informed consent, individuals that are younger than 18 years of age, and individuals that are not

women faculty members in the STEM disciplines at colleges and universities within the United States.

Reduction of Gaps

The results of this study may contribute to the bottom line of colleges and universities within the United States by helping organizations determine the specific type(s) of organization commitment (affective, normative or continuance) and work-life balance challenges that may impact why women in STEM disciplines, particularly women faculty, voluntarily leave organizations. This study can also provide human resource managers with personnel data that may help target their human resource policies and procedures that may help decrease turnover. This study could fill a gap in the literature pertaining to the organizational commitment, work-life balance and voluntary turnover intention of women faculty members in the STEM disciplines working at college and universities within the United States.

Implications for Biblical Integration

Researchers can apply scripture to both business and human resource concepts. Organizational commitment and voluntary turnover intention are two of these concepts for which scripture provides guidance. Ecclesiastes 3:13 states, "That each person finds pleasure in his work as this is a gift from God." Neubert and Halbesleben (2015) stated that spiritual calling was an important component of organizational commitment. Elangovan, Pinder, and McClean (2010) also agreed that spirituality is related to workplace outcomes such as organizational commitment. Van Duzer (2010), however, described businessmen and women as having limited and indirect connections with God during their business hours. At the same time, businessmen and women may have a limited and indirect connection with the organization in which they work.

In addition to the connection with the employee, an organization should consider their connection with the community. According to Van Duzer (2010), the purpose of business is to help the community flourish by providing goods and services. Successful organizations create opportunities that result in positive social change for their communities (Steiner & Atterton, 2014). Additionally, the purpose of an organization is to provide employees the opportunity to express themselves and utilize their God-given talents through meaningful and creative work (Van Duzer, 2010). Employee turnover affects an organization's ability to contribute to their communities by affecting their profitability and sustainability (Bothma & Roodt, 2012).

Relationship to Field of Study

This study focused on the relationship between organizational commitment work-life balance and voluntary turnover intention of women faculty members in the STEM disciplines employed by colleges and universities within the United States. The data specifically focused on the three types of organizational commitment to include affective, normative, and continuance. The results of this study may have a direct impact on the field of human resources. This research study addressed an ongoing problem faced by human resource professionals within colleges and universities and identified areas of focus for organizational commitment (affective, continuance and normative), work-life balance and voluntary turnover intention. One of the primary challenges of human resource professionals is staffing and retaining human capital. Closing the gap in knowledge in the relationship between organizational commitment (affective, continuance and normative), work-life balance, and voluntary employee turnover may improve the overall understanding of human resources, specifically for women in the STEM disciplines at colleges and universities.

A Review of the Professional and Academic Literature

A literature review reveals the gaps in the existing literature and provides a background as to how this study might provide knowledge for those gaps (Charmaz, 2006). A literature review reflects a general-to-specific approach that entails general material to provide a comprehensive perspective and ends with material closely related to the purpose of the study (Roberts, 2010). The purpose of this literature review was to examine the knowledge base on organizational commitment (affective, continuance and normative), work-life balance and voluntary turnover intention of women faculty in STEM disciplines. The literature builds an initial knowledge base of the main topics of the study. The literature review includes 120 references from peer-reviewed articles. Additionally, 135 of the literature articles reviewed had publication dates within five years of the completion of this dissertation.

The literature review will discuss, evaluate and synthesize the historical and contemporary literature of organizational commitment (affective, continuance and normative), work-life balance, voluntary turnover intention and the theories that support this research. The first section of the review will introduce organizational commitment, work-life balance and voluntary turnover intention through a historical review. The next section of the literature review will review the body of literature that discusses the theoretical framework of this study. These three theories are the Social Exchange Theory, Mobley's Job Satisfaction Model, and Meyer and Allen's Three-Component Model of Organizational Commitment. The next section of the literature review will discuss more current literature on organizational commitment, work-life balance, and voluntary turnover intention. The final section will discuss specifically organizational commitment, work-life balance and turnover intention of women faculty members

in the STEM disciplines, to include a summary of quantitative, correlational studies on these topics.

Theoretical Perspective (Social Exchange Theory). The Social Exchange Theory dates back to the 1920's (Cannon & Herda, 2016). Social Exchange Theory is a broad concept that explains transactions between the employee and the employer (Lioukas & Reuer, 2015). In the case of the Social Exchange Theory, transactions are a paired set of events where both parties benefit (Lee & Jeong, 2017; Lioukas & Reuer, 2015). Social exchange relationships in the workplace are important in understanding organizational harmony and productivity (Lioukas & Reuer, 2015). Sociology and social psychology scholars suggest that exchanges in social relationships are based on valued commodities such as money, approval, appreciation, advice, trust and even opportunities (Lee & Jeong, 2017).

Social exchange is the voluntary actions of individuals with the expectations of a reaction from others (Lee & Jeong, 2017; Lioukas & Reuer, 2015). For example, an employee receives a salary or other compensation and the organization receives services towards the organization's mission (Lee & Jeong, 2017; Lioukas & Reuer, 2015). Sufficient exchanges between organizations and employees lead to increased organizational efficiency, decreased turnover, and increased affective organizational commitment (Lee & Jeong, 2017; Lioukas & Reuer, 2015). Employees who believe that the organization cares about them are more likely to reciprocate and mirror those behaviors to the organization and team members (Lee & Jeong, 2017; Lioukas & Reuer, 2015). When employees feel that the organization invested in them, they feel obligated to respond with greater attachment and stronger commitment (Lee & Jeong, 2017).

The connection between the Social Exchange Theory, commitment and turnover began as early as the 1960's. Employees who have committed to their supervisor, team or organization

are less likely to leave the organization (Meyer & Allen, 1997). An organization that does not reciprocate an employee's commitment may cause an employee to seek other opportunities (Meyer & Allen, 1997). This theory is important to this doctoral dissertation because it explains how transactions between the employer and employee could affect the relationship between the two, and ultimately the sustainability of this relationship.

Theoretical Perspective (Mobley's Job Satisfaction Model). The second theory considered is adopted from the Mobley (1977) study that explained how job satisfaction might eventually lead to the employee leaving the organization. This model identifies a series of steps that employees go through when dissatisfied with their job. The first step is that employees begin thinking about leaving their current position (Mobley, 1977). The second step is that employee starts looking at other jobs or alternatives to their current position (Mobley, 1977). The third step is that the employee develops an intention to leave the organization, which may lead to actually leaving the organization (Mobley, 1977).

Mobley believed that job satisfaction indirectly leads to turnover behavior, especially when another opportunity offers the potential for more job satisfaction (Lee, Fernandez & Chang, 2018). This theory was important to this study because it identifies steps leading up to actual turnover, or, in other words, identifies the process of turnover intention. Researchers have also recommended Mobley's employee decision-making process for future studies (Peltokorpi, Allen & Froese, 2015; Wittmer, Shepard, & Martin, 2014). Researchers agree that Mobley's (1977) model continues to contribute to the research in turnover (Babalola, Stouten, & Euwema, 2015; Katsikea, Theodosiou, & Morgan, 2015; Peltokorpi, Allen, & Froese, 2015; Qiu, Haobin, Hung, & York, 2015).

Theoretical Perspective (Three-Component Model). Organizational commitment refers to the level of attachment individuals have to their employing organizations (Agarwal & Sajid, 2017; Lam & Liu, 2014). Organizational commitment is a reliable predictor of voluntary employee turnover and employee intention to leave the organization (Saha, 2016).

Organizational commitment can take three very distinct forms to include affective, normative and continuance (Allen & Meyer, 1996; Azeez, Fapohunda, & Jayeoba, 2017; Kloutsiniotis & Mihail, 2017; Lam & Liu, 2014; Sloan, Buckham, & Lee, 2017; Sothan, Baoku, & Xiang, 2016). These three components of organizational commitment are conceptually different and have distinct implications for employees when deciding to stay with or leave the organization (Allen & Meyer, 1996).

Meyer and Allen (1991) introduced these three separate dimensions of organizational commitment. According to Allen and Meyer (1996), these three separate components all have straightforward implications for leaving or staying with an organization, yet, they are conceptually different. The three types of organizational commitment are three of the independent variables in this study. Table 1 below introduces the three components of organizational commitment and their basic characteristics.

Table 1

<i>Three Components of Organizational Commitment</i>	
Types of Commitment	Characteristics of Commitment
Affective	Psychological Attachment; Want To
Continuance	Lack of Alternatives; Need To
Normative	Moral Obligation; Ought To

Affective Commitment. Affective commitment is the first component of Meyer and Allen's (1991) organizational commitment model. Affective commitment is the emotional attachment the employee has to the organization, specifically the psychological attachment (Allen & Meyer, 1996; Asgharian, Anvari, Ahmad, & Tehrani, 2014; Azeez, Fapohunda, & Jayeoba, 2017; Demirtas & Akogan, 2015; Lam & Liu, 2014; Lu & Gursory, 2016; Ohana & Meyer, 2016; Ross & Ali, 2017; Sothan, Baoku, & Xiang, 2016; Wu & Liu, 2014). Cao and Hamori (2014) define affective commitment as the employee's willingness to stay in an organization because they want to. Affective commitment is an essential component of organizational commitment, and of the three forms used in Meyer and Allen's three-component model of commitment, affective commitment was the first to address an individual's bond with the organization (Mercurio, 2015).

Affective commitment indicates shared values among employees within organizations (Brockner, Senior, & Welch, 2014). Affective commitment occurs when employees commit because they want to, not because they have to (Allen & Meyer, 1996). According to Morin, Meyer, Belanger, Boudrias, Gagne, and Parker (2016), affectively committed employees value change in an organization, remain focused on completing any assigned tasks or goals, and have a willingness to increase their workload if it ensures the success of the implemented change. Affective commitment factors include achieving and meeting goals, maintaining organizational membership, and accepting the organization's goals and values (Wang, Weng, McElroy, Ashanasy, & Lievens, 2014).

Bulut and Culha (2014) established certain attitudes as indicators of affective commitment to include the employee's attachment to the organization, the level the employee willingly participates as a member of the organization, and the employee's acceptance of the

organization's goals. Neelam, Bhattacharya, Sinha, and Tanksale (2015) referenced that high affective commitment led to an increase in employee satisfaction and a decrease in turnover, as listed in their study of 218 Indian professionals in the Information Technology industry. More studies related to affective commitment are found later in this literature review. Business leaders benefit when assessing an employee's affective commitment because it helps to identify an individual's perceived loyalty and self-sacrifice to a company (Teimouri et al., 2015). Practices that make an employee feel competent at work influence the employee's affective commitment positively (Kloutsiniotis & Mihail, 2017).

Affective commitment more significantly correlates with the intention to leave an organization than continuance and normative commitment (Kloutsiniotis & Mihail, 2017). Affective commitment is significantly related to voluntary attendance and better job performance (Meyer & Allen, 1997; Meyer, Stanley, Hersovitch, & Topolnytsky, 2002). Meyer and Allen (1997) believe that employees with strong affective commitment provide more value to the organization than those with weak affective commitment. Among the three types of commitment, the negative correlation between voluntary turnover intention and affective commitment was the strongest (Meyer & Allen, 1997). The antecedents of affective commitment are personal characteristic and work experiences (Kloutsiniotis & Mihail, 2017; Meyers & Allen, 1991).

Continuance Commitment. Continuance commitment is the second component found in Meyer and Allen's (1991) employee commitment model. Continuance commitment refers to the personal cost of leaving the organization and the personal investment to the organization (Azeez, Fapohunda, & Jayeoba, 2017; Meyer & Allen, 1991; Wu & Liu, 2014). In other words, an employee considers the costs associated with leaving the organization when experiencing

continuance commitment (Allen & Meyer, 1996; Ross & Ali, 2017; Sloan, Buckham, & Lee, 2017; Sothan, Baoku, & Xiang, 2016). The length of time an employee is with the organization may have an impact on the employee's continuance commitment. Individual investments increased when employees remained with the companies over an extended period, which, in turn, increased the chances of high employee continuance commitment (Ma, Qu, & Wilson, 2016).

Continuance commitment is associated with the limited number of other employment opportunities, as well as the attractiveness of those opportunities (LaFlamme, Beaudry, & Aguir, 2014). The antecedents of continuance commitment are alternatives and investments (Meyer & Allen, 1991). Mobley (1977) touched upon continuance commitment in the Mobley's Job Satisfaction Model found in the last section. Mobley believed that turnover behavior and intention was indirectly influenced by the availability of other opportunities that may provide greater job satisfaction (Lee, Fernandez, & Chang, 2018). Becker (1960) argued that employees who have vested costs or time in organizations, such as an increased pay because of tenure or promotions, would be less likely to leave. Becker (1960) referred to this as the side-bet theory. Becker (1960) proposed the term "side bet" when discussing continuance commitment. Becker (1960) described side bets as anything of value to the employee that would potentially be lost or lessened in value if he or she left the organization.

Continuance commitment affects more than an employee potentially leaving the organization, continuance commitment may also impact their current performance. According to Meyer and Allen (1991), individuals exert more effort when they are continually committed to the organization. Meyer and Allen (1991) suggested that employees with high levels of continuance commitment would complete the tasks left over from the low performing individuals to maintain their employment.

Normative Commitment. Normative commitment is the least studied of the three types of organizational commitment (Ross & Ali, 2017). The third type of organizational commitment, normative commitment, is the perceived obligation to stay with an organization (McCallum, Forret, & Wolff, 2014; Meyer & Allen, 1991; Ross & Ali, 2017; Sloan, Buckham, & Lee, 2017; Sothan, Baoku, & Xiang, 2016; Sow, Anthony, & Berete, 2016; Yucel, McMillan, & Richard, 2014). The antecedents of normative commitment are socialization experience and organizational investments (Meyer & Allen, 1991).

Others suggest that psychological contracts are part of normative commitment (Giluk, 2014). The psychological contract between an employee and the workplace takes into account very basic human needs and desires such as dignified treatment and growth (Giluk, 2014). Breaking this contract can be extremely demotivating because of the impact of distrust and violating the basic psychological contract, most likely ending in an employee's decision to leave the company (Giluk, 2014). Keeping psychological contracts with employees was critical to minimizing employee turnover (Giluk, 2014).

Organizational Commitment. Organizational commitment was previously discussed in the theoretical perspective section of this literature review, however, this section will continue the discussion of organizational commitment as one of the two independent variables for this study. Organizational commitment has an extensive research base (Meyer & Allen, 1997; Meyer et al., 2002). Organizational commitment is a concept that describes the relationship between the employee and the organization (Sothan, Baoku, & Xiang, 2016). Organizational commitment is the employee's belief in a company's values and objectives, the employee's ability to work for the benefit of the company, and the employee's established relationship with his or her employer (Azeez, Fapohunda, & Jayeoba, 2017; Keskes, 2014). Organizational commitment can improve

performance, decrease absenteeism and reduce turnover intention and actual turnover (Meyer, et al., 2002; Sotham, Baoku, & Xiang, 2016; Steers, 1977). An organization's success is highly dependable on maximizing and maintaining the talent of its workforce (Lakshman & Rai, 2014; Mandhanya, 2015; McManus & Mosca, 2015). At the same time, a loss of talent is a loss to the organization (Guha & Chakrabarti, 2014).

Historical Overview of Organizational Commitment. Organizational commitment research has a strong history, but became a topic of discussion in the early 1970s (Meyer & Allen, 1991). Organizational commitment has continued to be a theme in the research of today. Meyer and Allen (1991) were one of the first to examine organizational commitment as three-dimensional by assessing more than the individual's affective commitment, but their continuance and normative commitments as well.

Etzioni (1975) defined organizational commitment as the significant involvement that binds individuals to their organization. In the Etzioni (1975) model, positive organizational involvement was equal to commitment. Organizational commitment research became more prominent with Meyer and Allen (1990). Meyer and Allen (1990) looked at the mindset of people to analyze the nature of commitment. As a result, Meyer and Allen (1991) developed the three-component model in 1991, as discussed in previous sections, to further build upon the idea and concept of organizational commitment. This three-part model comprised of three types of commitment to include affective, continuance and normative (Meyer & Allen, 1990; Meyer & Allen, 1991). However, the initial model only included affective and continuance commitment (Meyer & Allen, 1990; Meyer & Allen, 1991). Later, Meyer and Allen (1990) added normative commitment to include the obligation component.

Definition of Organizational Commitment. There are many definitions of organizational commitment in the literature. In early research, organizational commitment was a psychological construct that measured an individual's level of attachment to the organization (Leflamme, Beaudry, & Aguir, 2014; Okubanjo, 2014; Sloan, Buckham, & Lee, 2017). Lam and Liu (2014) went beyond an employee's attachment and willingness to help the organization succeed, and added the employee's willingness to stay with the organization. One definition of organizational commitment is the level the employee identifies with and gets involved with the organization (Bulut & Culha, 2010; Cao & Hamori, 2016). Sloan, Buckham and Lee (2017) defined organizational commitment as one of the most important characteristics of the employee's relationship with the organization.

Organizational commitment is the bond the employee has with the organization that makes the employee want to stay with the organization and helps the organization meet its goals and objectives (DeLotell & Cates, 2016). Organizational commitment is the employee's acceptance of the organization's goals and strategies, the willingness of the employee to work for the organization and the employee's motivation to remain with the organization (Bulut & Culha, 2010). Literature has indicated that certain factors may impact organizational commitment. These factors include employee development opportunities, training, and leadership styles (Bulut & Culha, 2010; Cao & Hamori, 2015; DeLotell & Cates, 2016).

Measures of Organizational Commitment. The literature offers various instruments to measure organizational commitment. Mowday, Steers and Porter introduced that 15-item Organizational Commitment Questionnaire (OCQ) in 1979. Mowday et al. (1979) developed a questionnaire that helped to advance the study of organizational commitment by assessing an employee's desire to stay with the company, accept and believe in the values of an organization,

and his or her willingness to remain productive at work. Mowday's et al. (1979) questionnaire was one-dimensional and focused solely on an employee's feelings or attachment to the organization. This questionnaire was a one-dimensional view of organizational commitment. O'Reilly and Chatman also created an organizational commitment questionnaire which included 12 items and measured three dimensions of organizational commitment to include internalization, identification, and compliance (Dhammika, Ahmad, & Sam, 2012). The Three-Component Model of Employee Commitment questionnaire measures an employee's affective commitment, continuance commitment and normative commitment (Meyer & Allen, 2004). Some critics questioned the validity of the one-dimensional view of commitment, so Allen and Meyer (1990) proposed a three-component model in their quantitative study measuring the antecedents of the affective, continuance, and normative commitments of 256 clerical, managerial, non-unionized, and supervisory employees.

Allen and Meyer (1990) introduced the multi-dimensional measurement tool in 1990. The model by Allen and Meyer (1990) measured the three previously discussed components of organizational commitment to include affective, continuance, and normative. The original Three-Component Model employee commitment questionnaire had 24 items (Meyer & Allen, 1991). The revised version used in this study contains 18 items (Meyer & Allen, 2004). Each of the three-components within this questionnaire is scored separately (Meyer & Allen, 2004). Meyer, Allen and Smith (1993) tested Meyer and Allen's three-component model of commitment and its effects on turnover intention and occupational commitment with a quantitative, correlational study that served as a guide to my research.

Organizational Commitment Measurements. Although many theorists have used Mowday, Steers, and Porter's (1979) Organizational Commitment Questionnaire as the basis for

their studies of organizational commitment (Benton, 2014), researchers have continued to use Meyer and Allen's three-component model of commitment to identify the psychological reasons why employees remain committed to the organizations (Meyer & Allen, 1991). The following paragraphs specifically discuss the affective, continuance and normative scales. The original versions of the questionnaire were updated; the updated version was used in this study.

The instrument used to measure affective commitment was the affective commitment scale, developed in 1984 by Meyer and Allen. The original affective commitment questionnaire contained eight items (Meyer & Allen, 1990). The questionnaire was later reduced to six items (Meyer & Allen, 1993). The reliability and validity of this questionnaire has been proven with multiple studies (Meyer & Allen, 2004).

The questionnaire used to measure continuance commitment was the continuance commitment scale, developed in 1984 by Meyer and Allen. The original continuance commitment questionnaire contained eight items and addressed personal sacrifices individuals made when leaving the organization (Meyer & Allen, 1990). Meyer, Allen and Smith (1993) later reduced the continuance commitment scale to six items. Meyer and Allen (1991) indicated that the continuance commitment scale provided an assessment of constraints that significantly influenced one's decision to remain with a company, which differed from the affective and normative scales that specifically addressed one's feelings or attachment to an organization. The continuance commitment scale achieved an acceptable reliability of .64 (Mishra et al., 2015), and Yamao and Sekiguchi (2015) indicated in their study that the scale had a Cronbach's alpha coefficient of .76.

Normative Commitment Questionnaire. The questionnaire used to measure normative commitment was the normative commitment scale, developed by Allen and Meyer in 1990. This

scale originally contained eight items and looked at the employee's moral obligation to remain with the company (Allen & Meyer, 1990). Meyer et al. (1993) later reduced the scale to six items. The normative commitment scale achieved a reliability score of .85 (Mishra et al., 2015) and a Cronbach's alpha coefficient of .82 (Yamao & Sekiguchi, 2015).

Organizational Commitment and Turnover Intention. Organizations with an awareness of organizational commitment have also have insight on turnover intention of their employees (Sotham, Baoku, & Xiang, 2016). Scholars have linked organizational commitment to turnover intention (Kalidass & Bahron, 2015). According to Hussain and Asif (2012) there is a negative relationship between commitment and turnover intention. The employee's intention to stay with an organization is directly influenced by the level of connection the employee feels toward the organization (Imran, Arif, Cheema, & Azeem, 2014).

Faloye (2014) explored the connection between the three dimensions of organizational commitment and turnover intentions. The findings showed a weak positive relationship between affective commitment, continuance commitment, and turnover intention, but not for normative commitment (Faloye, 2014). Neelam, Bhattacharya, Sinha, and Tanksale (2015) referenced that high affective commitment led to an increase in employee satisfaction and a decrease in turnover, as listed in their study of 218 Indian professionals in the Information Technology industry.

Work-Life Balance. Work-life balance brings an alignment between these work roles and family roles (Azeez, Fapohunda, & Jayeoba, 2017). Work-life balance is described by other terms such as work-life conflict and work-family conflict. Wang, Lee and Wu (2017) used the term work-family conflict. Work-family conflict is the conflict between work roles and family roles, specifically those that are mutually incompatible (Torp, Lysfjord, & Midje, 2018).

Ultimately the work roles make participating in family roles that much more difficult (Torp, Lysfjord, & Midje, 2018). Work and family schedules are becoming more difficult to balance, ultimately making work flexibility an attractive characteristic in organizations (Jijena Michel & Jijena Michel, 2015). Work-life balance was described by Azeez, Fapohunda, and Jayeoba (2017) as the control one has of their responsibilities between work and family. Work-family conflict is the conflict of incompatible demands due to work and family roles, making participation in each of these roles more difficult. Wang, Lee, and Wu (2017) also indicted that the conflict can go both ways. The commitment of individuals who work and have obligations outside of the place of work should not be taken lightly (Azeez, Fapohunda, & Jayeoba, 2017). Work-family conflict alters employee's behavior in the workplace, to include their organizational commitment (Demsky, Ellis, & Fritz, 2014; Fuwa, 2014). Wang, Lee, and Wu (2017) indicated that when employees are experiencing work-family conflict may leave employment to reduce work interferences and family conflict.

Work-life balance is a barrier for women in technical fields (Simard et al., 2008). The work-life balance human resources initiatives common in the workplace today continue to perpetuate the ideal worker male stereotypes and tend to weaken the perception of career-motivated women (Pas et al., 2014). Women, in particular, are faced with making decisions that ultimately leave them in a dilemma – devotion to career or devotion to family (Simard et al., 2008). Pas, Peters, Doorewaard, Eisinga, and Lagro-Janssen (2014) referred to the ideology of the worker as gendered, suggesting that long hours, a willingness to relocate, work overtime or be on call, are characteristics of the ideal worker, and are easier met by males because of the lesser pressures society places on males in their private lives. Sok, Bloome, Ruiters, Tromp, and Lub (2018) studied 418 respondents working at business schools. Sok et al. (2018) discovered

that positive home-work interference was negatively related to turnover intention while negative home-work interference was positively related to turnover intention.

Work-Life Balance in STEM Disciplines. Work-Life balance is a critical issue for college and university faculty (Watanabe & Falci, 2014). Causative factors that may account for the under-representation of women at the higher ranks in academic science is work-life balance (Villablanca, Li, Beckett, & Howell, 2017). In a survey completed by the Higher Education Research Institute in 2010-2011, only 32% of faculty in the United States feel that their personal lives and professional lives are balanced (Watanabe & Falci, 2014). Female academic professionals in the STEM disciplines are more likely to struggle with work-life balance compared to academic professionals in non-STEM fields (June, 2012). These struggles include long hours, lack of family-friendly environments and pressure to achieve tenure (June, 2012).

Glass, Sassler, Levitte and Micheltore (2013) state that women are underrepresented in STEM workplaces, particularly female employees that are mothers. Ecklund and Lincoln (2011) conducted research that found that women in science fields (including academics) are more likely to have fewer or no children than those in non-STEM disciplines. Fouad, Fitzpatrick, and Liu (2011) performed a qualitative study of current and former female engineers to compare and contrast the factors for leaving or persisting in these professions. The study found that women who persisted with the profession often sacrificed career advancement for family obligations (Fouad, Fitzpatrick, & Liu, 2011). Singh, Zhang, Wan, and Fouad (2018) conducted a study that investigated the relationship between work-family conflict and the intention to leave for women engineers. This results of this study that included 245 participants indicated that organizational efforts to create inclusive work environments that allow women to create work-life balance while

valuing their contributions contributed to the overall attachment to the organization (Singh et al., 2018).

Work-Life Balance and Turnover of Women Faculty. Women continue to be underrepresented in tenured and administrative academic positions despite the economic advances of women in academics over the last 20 years (Hart, 2016). The underrepresentation is especially evident in STEM disciplines (Hart, 2016). Women make up 25.7% of tenured faculty in STEM disciplines (Hart, 2016). Glass, Sassler, Levitte, and Michelmore (2013) contribute the underrepresentation of women in the STEM workplace to work-life balance. Women may choose to work part-time more often than men due to balancing work and home responsibilities (Watanabe & Falci, 2017; Webber & Rogers, 2018). More than one-third of women have worked part-time during some part of their career to balance work and family, 25% have worked reduced hours, and 16% have declined promotion (Hewlett, 2007). Webber and Rogers (2018) indicate that women report more challenges getting promotions or gaining tenure, partially due to work-life balance.

To decrease turnover and increase gender diversity among faculty, work-life balance must be a topic of discussion (Watanabe & Falci, 2017). Faculty members who are not satisfied with their work-life balance may leave the organization (Webber & Rogers, 2018). Women are more likely to leave their jobs for family-related reasons (Lambert & Hogan, 2009). Specifically, women faculty members in STEM disciplines voluntarily leave colleges and universities in the United States at higher rates than males at all levels (Burnett et al., 2012; Gumpertz, Durodoye, Griffith, & Wilson, 2017; Thomas, Poole, & Herbers, 2015). Balancing multiple roles can contribute to discontentment in the workplace, which can lead to turnover (Webber & Rogers, 2018). Hewlett, Buck, Luce, Servon, Sherbin, Shiller, Sosnovich, and

Sumberg (2008) found that some women in STEM fields who experience work-life balance issues leave the organization entirely. Hunt (2016) indicated that women in the STEM fields (academic and non-academic) leave their organization because of inflexible schedules, long work hours, and workplace culture. Work-life integration was also an issue that contributed to the “leaky pipeline” discussed in detail below (Bilimoria & Lord, 2014; Tajlili, 2014; White, 2015).

Work-Life Balance Questionnaire. The definition of work-life balance varies across theoretical models and research studies (Brough, Timms, O’Driscoll, Kalliath, Siu, Sit, & Lo, 2014). Brough et al. (2014) found six common definitions of work-life balance, all corresponding to their own unique research instrument. Brough et al. (2014) used this research to create their 4-item Work-Life Balance Questionnaire, which was used in this study. In this questionnaire employees are asked to respond based on reflection of their work and non-work activities using a Likert-scale with “1” being strongly disagree and “5” being strongly agree (Chan, Kalliath, Brough, Siu, O’Driscoll, & Timms, 2016). Higher scores on this questionnaire represent better work-life balance (Chan et al., 2016).

Employee Turnover. Employee retention has become a significant topic in the field of human resource management (Loliwe, 2016). Turnover research has increased significantly in the last ten years (Loliwe, 2016). Turnover is the percentage or quantity of workers who leave an organization to seek new employment opportunities (Pohler & Schmidt, 2015). Employee turnover is one of the most challenging issues in human resource management (Loliwe, 2016). Organizations struggle to predict and manage turnover. Some scholars believe that organizations have a difficult time retaining employees because employees are always searching for better opportunities (Ferreira & Almeida, 2015; Kamarulzaman, Zulkeflee, Hamid, Sahari, & Halim, 2015). Employees leave organizations for many different reasons, some are positive, and some

are negative (Al-Emadi, Schwabenland, & Qi, 2015). Although some of the factors that contribute to turnover such as the state of the economy are beyond the organization's control, other factors such as human resource factors are well within the organization's control (Doh, Smith, Stumpf, & Tymon, 2011).

Historical Overview of Voluntary Turnover Intention. In the last 100 years, voluntary employee turnover research has been discussed in over 2000 articles (Lee, Hom, Eberly, Li, & Mitchell, 2017). The first scholars to put voluntary turnover intention on the map was James March and Herbert Simon in their 1958 publication, *Organizations* (Lee et al., 2017). Mobley (1977) built upon the work of March and Simon with his job satisfaction model that was discussed previously (Lee et al., 2017). Turnover intention is the final step of an employee's cognitive process of withdrawal from an organization before the employee actively decides to quit and begins seeking other employment (Mobley, 1977). Organizational commitment impacts workplace behaviors, including voluntary turnover intention (Ferris & Aranya, 1983). For decades, organizations have searched out methods to slow voluntary turnover and retain employees.

Types of Turnover. There are several types of turnover, as indicated by the literature. Turnover can be voluntary or involuntary, functional or dysfunctional, avoidable or unavoidable. Voluntary turnover is when the employee decides to leave the organization (Cinar, 2015; Hom, Mitchell, Lee, & Griffeth, 2012; McInerney, Ganotice, King, Marsh, & Morin, 2015). Involuntary turnover happens when the employee does not leave the organization by choice (Hom, Mitchell, Lee, & Griffeth, 2012). With involuntary turnover, the employee is typically dismissed from the organization. Functional turnover occurs when an employee that is not productive or that is not an asset leaves the organization (Hom, Lee, Shaw, & Hausknecht,

2017). Avoidable turnover occurs when management has control of the factors that encouraged the employee to leave the organization. Avoidable turnover can also be referred to as dysfunctional turnover. Dysfunctional turnover occurs when a key employee leaves the organization (Hom, Lee, Shaw, & Hausknecht, 2017). Unavoidable turnover happens when management has no control over the factors that encouraged the employee to leave the organization. The focus of this study and this literature review will be voluntary turnover and voluntary turnover intention.

Voluntary Turnover Intention. Voluntary turnover occurs when employees choose to leave an organization (Kam & Meyer, 2015; Spell, Eby, & Vandenberg, 2014; Vujicic, Jovicic, Lalic, Gaic, & Cvejanov, 2014). Voluntary turnover intention, on the other hand, describes an individual that plans to leave the organization or quit their current position or organization (Cinar, 2015; McInerney, Ganotice, King, Marsh, & Morin, 2015). Turnover intention is the final step of an employee's cognitive process of withdrawal from an organization before the employee actively decides to quit and begins seeking other employment (Mobley, 1977).

Dwivedi (2015) describe turnover intention as a cognitive process that includes mental decisions that take place before the employee terminates employment with the organization. Saridakis and Cooper (2016) detailed the steps that people go through in the voluntary turnover intention process. The first step is to assess their current position (Saridakis & Cooper, 2016). The second step is that the employee evaluates his or her level of satisfaction with the company and/or the job (Saridakis & Cooper, 2016). The third step is that the employee evaluates the costs and consequences associated with leaving the organization (Saridakis & Cooper, 2016). The final step is that the employee assesses the alternatives available and conducts a pro/con

analysis of the all the options (Saridakis & Cooper, 2016). Dwivedi's (2015) model is very similar to Mobley's (1977) Job Satisfaction model previously discussed.

Factors Affecting Employee Turnover. With employee turnover as a major concern to organizations, there must be an accurate measurement regarding factors that influence employee losses (Griffin, Hogan, & Lambert, 2014; Hauff, Richter, & Tressin, 2015; Jadoo, Aljunid, Dastan, Tawfeeq, Mustafa, Ganasegeran, & Al Dubai, 2015). Wang, Wang, Xu, and Ji (2014) identified categories of voluntary employment turnover. These factors are external, internal and employee (Wang et al., 2014). External factors include job availability, economic conditions, and location (Wang et al., 2014). Internal factors include compensation, culture, socialization, and training or development opportunities (Wang et al., 2014). Factors that could affect employee turnover also include, but are not limited to, pay and benefits, team culture, management, orientation, training and development, recognition, and job characteristics. Employee factors include job satisfaction, expectations, personality, family obligations, education, and personal health (Ahmad & Rainyee, 2014; Wang et al., 2014). Organizations may fear that training their employees would encourage them to explore other opportunities, but training may lead to better retention. However, Chami-Malaeb and Garavan (2013) identified a positive relationship between affective commitment and organizations that invest in talent and leadership development. Ultimately, leaders who understand the reasons and consequences for turnover have a better opportunity to develop strategies to reduce the effects of turnover (Leon, Bellairs, & Halbesleben, 2015; Prasannakumar, 2015; Savaneviciene, Vaitkevicius, Ciutiene, & Meiliene, 2015). The effects of turnover will be discussed in the next few paragraphs.

Effects of Employee Turnover. The results of turnover are usually negative but are dependent on many factors, one of which is the degree that employees work together (Hale,

Ployhart, & Shepherd, 2016). Organizations adapt to turnover in two phases, disruption and recovery (Hale et al., 2016). Disruption is defined as a change in collective performance when an employee leaves the organization (Hale et al., 2016). Losing high-quality employees is more disruptive than losing low-quality employees (Call, Nyberg, Ployhart, & Weekley, 2015). Disruption is also a change in collective performance when an employee leaves the organization (Hale, Ployhart, & Shepherd, 2016). Recovery is the increase in collective performance after the disruption phased caused by employee separation (Hale, Ployhart, & Shepherd, 2016). Collective Turnover is the quantity and quality of knowledge, skills, abilities and other characteristics that the organization loses when an employee leaves the organization (Call et al., 2015).

Cost of Turnover. Turnover is one of the largest costs to an organization (Lalitha & Singh, 2014). An increased turnover rate poses a threat to organizational leaders because of the high replacement costs, increased training costs, loss of productivity, loss of efficiency and decreased profitability (Gupta & Shaw, 2014; Kovner, Brewer, Fatehi, & Jun, 2014; Singhapakdi, Lee, Sirgy, & Sensasu, 2015). Turnover intention is an important factor to organizations (Meyer & Allen, 1997). Turnover costs are typically described in two ways, direct costs and indirect costs. Both of these types of turnover costs are described in the next few paragraphs.

Direct Costs. Turnover has a negative impact on the business' bottom line (Hom, Mitchell, Lee, & Griffeth, 2012). When an employee leaves, the organization incurs direct costs to include recruitment, training, and general administrative costs and indirect costs such as decreased productivity and competitiveness (Akkas, Chakma, & Hossain, 2015; Griffin, Hogan, & Lambert, 2014; Lambert & Hogan, 2009; Prasannakumar, 2015; Wahyuningtyas, Sule,

Kusman, & Soemaryani, 2015; Wang et al., 2015). However, the replacement costs vary by industry, organization and employment sector (Hom, Mitchell, Lee, & Griffeth, 2012). Since 2001, the National Science Foundation has spent over \$130 million in grants, partially to increase the recruitment and retention of female faculty in STEM fields (Taylor, Beck, Lahey, & Froyd, 2017). Specifically, replacing STEM faculty at a university within the United States can cost as much as \$300,000 for a junior professor to over \$700,000 for senior professors (Lawrence, Celis, Kim, Lipson, & Tong, 2014).

Indirect Costs. Turnover also has indirect costs (Lambert & Hogan, 2009). The loss of well-trained workers negatively impacts profitability, productivity, and sustainability (Baldwin & Lafrance, 2014; Bothma & Roodt, 2012; Gupta & Shaw, 2014; Kovner, Brewer, Fatehi, & Jun, 2014; McManus & Mosca, 2015; Singhapakdi, Lee, Sirgy, & Sensasu, 2015). Training a new employee can range from 90 percent to 200 percent of the employee's annual salary (Hom, Mitchell, Lee, & Griffeth, 2012). Voluntary turnover intention has implications for the organization, even before the employee leaves (Call, Nyberg, & Ployhart, 2015). As an organization downsizes, the remaining individuals gain more responsibility (Meyer & Allen, 1997).

Safeguarding the human resource investment is important because organizations invest significant time, money and effort in hiring and developing their employees (Cao & Hamori, 2016). Voluntary employee turnover not only increases organizational costs, but it also hinders the effectiveness and competitiveness of the organization (Doh, Smith, Stumpf, & Tymon, 2011; Singhapakdi, Lee, Sirgy, & Senasu, 2015). Voluntary turnover potentially leads to the loss of high performers and talent shortage (George, 2015).

Organizations with high turnover show decreased performance compared to their competitors (Doh, Smith, Stumpf, & Tymon, 2011; Gupta & Shaw, 2014; Mowday, Steers & Porter, 1979). Key workers have a significant impact on business sustainability, profitability, and achieving stakeholder's expectations (Martin, 2015). Turnover causes problems with workloads and workflow that can increase as turnover increases (Call, Nyberg, Ployhart, & Weekley, 2015). Companies that focus on the retention of high-quality employees preserve their staffing and experience levels instead of reinvesting in recruiting and hiring new employees (Kovner, Brewer, Fatehi, & Jun, 2014).

Voluntary Turnover Intention Questionnaires. Leaders across all industries are concerned with turnover (Cohen, Blake, & Goodman, 2015; Collins, McKinnies, Matthews, & Collins, 2015) and face challenges in decreasing the rate of employee turnover (Uhi-Bien, Riggio, Lowe, & Carsten, 2014). Reducing turnover is a complicated business problem that requires continuous research (Huffman, Casper, & Payne, 2014). Researchers have utilized several instruments to measure turnover intention.

Women in STEM Disciplines. The Economic and Statistics Administration (ESA) describes STEM careers with professional and technical attributes related to computer science, mathematics, engineering, and physical sciences (Beede, Julian, Langdon, McKittrick, Khan, & Doms, 2011). The full inclusion of women in academics in the United States, particularly in the STEM disciplines is a challenge (Su, Johnson, & Bozeman, 2014). Leading up to World War II, many top STEM schools, particularly engineering schools, did not admit women (Bix, 2004). The few women admitted to technical schools faced discrimination and hostile learning environments because their presence challenged traditional gender roles (Bix, 2004). The U.S. Office of Science and Technology Policy stated that it is crucial to support women pursuing

STEM careers because they are an essential part of the United States' strategy to remain competitive on a global level (White, 2015).

Turnover of Women Faculty in STEM Disciplines. Colleges and universities within the United States are specifically facing challenges retaining women faculty in the STEM (Science, Technology, Engineering & Mathematics) disciplines (Carrigan, O'Leary, Riskin, Yen, & O'Donnell, 2017). Specifically, women faculty members in STEM disciplines voluntarily leave colleges and universities in the United States at higher rates than males at all levels (Burnett, et al., 2012; Gumpertz, Durodoye, Griffith, & Wilson, 2017; Thomas, Poole, & Herbers, 2015). Retaining faculty members provides numerous benefits to include providing mentorship and acting as role models for students (Sahl, 2017). As student diversity increases so does the need for a diverse faculty (Sahl, 2017). Gender diversity is imperative to the success of academia and enriches knowledge creation (Watanabe & Falci, 2017).

Bilimoria and Lord (2014) argued that the reasons for the underrepresentation of women in STEM leadership positions was a "leaky pipeline." Bilimoria and Lord (2014) defined the "leaky pipeline" as the systematic loss of women at key career transition points. Women leave STEM professions early in their careers at higher rates than men (Fouad, Fitzpatrick, & Liu, 2011; Thilmany, 2008). Women exit STEM professions at higher rates than men, comparable to other professions (Hunt, 2016). A study released in 2008 showed that 52% of women between the ages of 35-40 in science, engineering, and technology professions left the workplace (Thilmany, 2008).

At the undergraduate level, women hold half of the bachelor's degrees awarded in STEM fields (Beede et al., 2011). However, qualified women drop out of STEM areas of study at higher rates than men do (Gokhale, Rabe-Hemp, Woeste, & Machina, 2015). Women continue

to be underrepresented in STEM professions (Rosenthal, London, Sheri, & Lobel, 2011; Watanabe & Falci, 2017) and in academia (Villablanca, Li, Beckett, & Howell, 2017). While more women are earning STEM degrees, women are still underrepresented at all levels of the academic hierarchy (Glass & Minnotte, 2010). In response to this growing issue, affirmative action offices and university personnel have produced several recommendations to incorporate gender balance among faculty, yet women are still significantly underrepresented (Glass & Minnotte, 2010).

The underrepresentation of women in STEM fields has been heavily documented (Su, Johnson, & Bozeman, 2014). As of 2015, women filled 47 percent of jobs in the United States, but only held 25 percent of STEM jobs (Noonan, 2017). Women are also under-represented in STEM academia. Although there has been an increase in advanced degrees earned by women, women are still less likely to stay in academia or become full professors (Watanabe & Falci, 2017). In academia, women earn approximately half of doctorates in the United States, but only account for 16 percent of full professorship and 23 percent of tenure line positions (Su, Johnson & Bozeman, 2014). The underrepresentation of women in STEM continues to be a cause for concern for U.S. policymakers, industry leaders and educators (Bidwell, 2014; Simard et al., 2008).

Reasons for Turnover. Professional organizations have tried to make the STEM environment inclusive so that women can achieve their full potential; however, stereotyping and tokenism lead to isolation and exclusion (Beaton, Tougas, Rinfret, & Monger, 2015; Simard, et al., 2008). The literature stated that women in highly technical fields face the barriers of exclusion from social networks, a lack of access to mentors, and a lack of role models (Beede et al., 2011; Simard et al., 2008). Studies have indicated that once women graduate and enter the

workforce, barriers in a male-dominated work culture are some of the main causes of why women leave STEM fields (Fouad, Fitzpatrick, & Lui, 2011; Thilmany, 2008).

Organizational Commitment. Women have been historically under-represented among STEM faculty (Thomas, Poole, & Herbers, 2015). Women are increasingly under-represented in high-ranking college and university positions such as professors, department chairs and deans (Thomas, Poole, & Herbers, 2015). External social support, for families with two full-time working professionals, seems critical to career longevity and work-life balance (Baumgartner & Schneider, 2010). The correlation between external support, work-life balance, and career longevity could provide important, as high levels of organizational commitment have been linked to women who also have high levels of social support (Baumgartner & Schneider, 2010).

Gender-Based Pay Differences. Gender-based pay differences also affected the job satisfaction of women faculty. For example, when gender-based pay differences increased, the job satisfaction of female faculty decreased (Hagedorn, 1996). Barriers related to salary and career advancement opportunities have remained consistent challenges for women in the workplace for decades (Brawner, Camacho, Lord, Long, & Ohland, 2012).

Job Satisfaction. Women faculty are underrepresented in the STEM fields and experience lower job satisfaction (Thomas, Poole, & Herbers, 2015). Callister (2006) researched the relationship between gender and job satisfaction of STEM faculty members. Callister (2006) found that female faculty members had less job satisfaction than their male counterparts. Callister (2006) determined in this study that lack of interpersonal and social relations contributed to this difference in job satisfaction.

Women in STEM Leadership Positions. Another reason for the “leaky pipeline,” as discussed earlier was unequal employment opportunities for women pursuing STEM leadership

positions (Bell & Yates, 2015; Biliomoria, Lord, & Marinelli, 2014). Per Su, Johnson and Bozeman (2014), women faculty in STEM disciplines advance slower, are less likely to be promoted and receive less resources. Baumgartner and Schneider (2010) noted that although women progress professionally at the lower levels of an organization, progress becomes somewhat halted at the upper levels, in turn increasing turnover. Su, Johnson and Bozeman (2014) noted that women make up a smaller proportion of academic administrators, specifically academic chairs in the STEM fields. The U.S. government commits significant resources to attracting and retaining women in the STEM professions, including equal opportunity legislation that aims to advance women in STEM leadership positions (Bilimoria & Lord, 2014).

Relevant Studies To This Research. The following section is an analysis of studies related to this research. This section includes both quantitative and qualitative studies on the topic, but specifically includes quantitative, correlational studies that were conducted using the independent variables for this study (organizational commitment and work-life balance) and the dependent variable (voluntary turnover intention). The order that these studies will be discussed begins with relevant organizational commitment studies. Then, relevant work-life balance studies are discussed. Finally, relevant voluntary employee turnover studies are discussed. This section will then look at studies that combine the variables in this study by discussing relevant organizational commitment and turnover intention studies, as well as relevant work-life balance and turnover intention studies. Finally, the section will end with discussion of studies specifically related to these variables in the STEM disciplines.

Relevant Organizational Commitment Studies. Some studies focused on the general concept of organizational commitment. Studies have also focused specifically on the three components of organizational commitment. These three components of organizational

commitment include affective commitment, continuance commitment and normative commitment.

Affective Commitment Studies. Affective commitment is the first type of commitment found in the Three Component Model of Organizational Commitment. Keiningham et al. (2015) indicated that when compared to affective commitment, normative commitment did not have a strong relationship with predicting the loyalty of individuals. For this reason, the authors suggesting using affective commitment over normative commitment (Keiningham et al., 2015). Lee, Sohn, Kim, Kwon and Park (2018) investigated the impact of perceived human resource practices on affective commitment and turnover intention in the United States and Korea. In this study, internal mobility had the most significant association with turnover intention in both the United States and Korea (Lee et al., 2018). Within the United States, however, internal mobility was a strong predictor of affective commitment while training was a strong predictor of affective commitment in Korea (Lee et al., 2018).

Continuance Commitment Studies. Meyer, Allen, and Gellatley (1990) noted that the continuance commitment scale was an exhaustive way to measure the costs associated with turnover. Continuance commitment is associated with the benefits received from the employer that are unique to a particular organization (Brockner, Senior, & Welch, 2014). Meyer et al. (2002) referenced that since 1982 over 100 published studies addressed continuance commitment and its relationship to absenteeism, turnover, job satisfaction, performance, and career development. Employees who experience continuance commitment with their employer have difficulty leaving the organization (Gellatly et al., 2014). According to Battistelli, Galletta, Vandenberghe, and Odardi (2016), employee continuance commitment increased when individuals saw their actions boosted their chances of retaining some advantages or assets such

as a membership with an organization or club, company benefits, salaries or pensions, or recognition in and around the community. Joung, Goh, Huffman, Yuan, and Surles (2015) conducted a quantitative study of the organizational commitment of 447 food service employees across the United States. The authors indicated that continuance commitment did not have an impact on turnover intention (Joung et al., 2015).

Normative Commitment Studies. Of the three components, normative commitment received the least amount of attention in research and was the last element added to the organizational commitment model (Vandenberghe, Mignonac, & Manville, 2015). McCallum, Forret, and Wolff (2014) indicated in their quantitative correlational study that examined the internal and external networking behaviors of 335 managers in the healthcare system, that normative commitment related to the employees feeling a sense of responsibility to stay with the organizations.

Organizational Commitment Studies in the Field of Education. Organizational commitment has been studied in the field of education as well. Akram, Malik, Nadeem, and Atta (2014) investigated work-family enrichment as predictors of work outcomes. These work outcomes included affective commitment and turnover intentions (Akram et al., 2014). In the teaching profession, 225 individual from private and public colleges were selected (Akram et al., 2014). The results showed that work-family enrichment was a negative predictor of turnover intention, but a positive predictor of affective commitment (Akram et al., 2014). Zhang's (2015) expanded on the work of previous researchers by listing the derivatives of continuance commitment, which included economic commitment and choice commitment, in his quantitative, experimental study of 356 professors in Beijing, China. Zhang (2015) described economic commitment as the fear associated with an employee's concern for ending one's membership

with a firm and choice commitment as the lack of alternative jobs available for who employees who intend to end their association with a company.

Buck (1999) studied organizational commitment among higher education employees at public colleges and universities. Buck (1999) focused specifically on how human resource strategies affect organizational commitment among staff employees at public colleges and universities. Calland (2012) took this research a step farther when he investigated the correlation of human resource strategies and organizational commitment among the staff employed by a private non-profit university located in Virginia. Calland's (2012) study was focused on benefits, due process, employee participation, employee skill level, general training, job enrichment, social interaction and wages. Calland's (2012) study was limited to a nonprofit university in Virginia limiting the scope of the study. Calland (2012) listed one of his recommendations for future research is to increase the sample size. Another recommendation by Calland (2012) was to examine turnover. Although this research was not specifically examining specific human resource strategies, this study furthered research conducted by both Buck (1999) and Calland (2012) and investigated turnover, as suggested by Calland (2012).

Relevant Work-Life Balance Studies. There have been work-life balance studies that incorporated both quantitative and qualitative methods (Hillon, Domagalski, & Zanglein, 2017). These studies assume that workers have two separate lives or roles, the professional life and the personal or home life (Hillon, Domagalski, & Zanglein, 2017). Azeez, Fapohunda and Jayeoba (2017) studied work-life balance as an antecedent of organizational commitment. These researchers believed that work-life balance conflict can lead to decreased or non-commitment of employees due to a misalignment of work and family roles (Azeez, Fapohunda, & Jayeoba, 2017). This study used questionnaires to look at the relationship between work-life balance and

organizational commitment in post-graduated students (Azeez, Fapohunda, & Jayeoba, 2017).

The study revealed that work-life balance has a positive, but statistically insignificant, relationship to organizational commitment (Azeez et al., 2017).

Relevant Voluntary Employee Turnover Studies. There are numerous published studies on why workers leave employers (Baumgartner & Schneider, 2010; Fouad, Fitzpatrick, & Liu, 2011; Lambert & Hogan, 2009). Turnover research goes back to the 1920's when the first empirical turnover study demonstrated that clerical workers were more likely to leave an organization if their father's were professionals or small business owners (Hom, Lee, Shaw, & Hausknecht, 2017). The clerical workers were more likely to stay if their father's were unskilled or semi-skilled workers (Hom et al., 2017). Mishra, Mishra, and Grubb (2015) have studied the role commitment plays in turnover. Mishra, Mishra, and Grubb (2015) found that individuals who earned degrees at the graduate level or higher had an increased chance of finding alternative employment, and their continuance commitment levels and turnover intention levels were high.

Relevant Organizational Commitment and Turnover Relationship Studies. Previous researchers examined the relationship between organizational commitment and turnover intentions (Wong & Laschinger, 2015; Yusoff et al., 2015). Numerous studies focus on organizational commitment and its relationship to turnover intentions (Chiu & Chen, 2016). Gamble and Tian (2015) studied 1,017 retail employees in China regarding organization commitment dimensions (affective, continuance and normative). The results of this study showed affective and normative commitment was negatively related to turnover intentions; whereas continuance commitment was positively related to turnover intention (Gamble & Tian, 2015). Luchak and Gellatly (2007) researched the relationship between organizational commitment and voluntary turnover. Luchak and Gellatly (2007) surveyed randomly selected

unionized utility workers, nurses, and food service employees. The study found that increasing organizational commitment reduced intentions to leave the organization (Luchak & Gellatly, 2007).

Affective Commitment. Neelam, Bhattacharya, Sinha, and Tanksale's (2015) referenced that high affective commitment led to an increase in employee satisfaction and a decrease in turnover, as listed in their study of 218 Indian professionals in the Information Technology industry. Zhang (2015) also found in his quantitative study of the personality traits of 356 Chinese academics that affective commitment played a significant role in employees achieving the goals of organizations, and that employees remained with groups or companies because they chose to do so, not because they felt an obligation to stay. Gellatly et al. (2014) conducted a qualitative, phenomenological study that determined that out of the three forms of commitment, affective commitment had the highest inverse relationship with turnover and continuance commitment had the lowest. Mehmood, Ahmad, Irum, and Ashfaq's (2016) quantitative correlational study examined the job satisfaction, affective commitment, and turnover intention of 106 front desk bank employees in Pakistan. This study identified a negative relationship between affective commitment and turnover intention (Mehmood, Ahmad, Irum, & Ashfaq, 2016). Teimouri et al. (2015) indicated in their quantitative correlational study of 185 managers that high affective commitment was a sign of durability and an excellent predictor of the employee's total commitment to the organization.

Relevant Work-Life Balance and Turnover Intention Studies. Huffman, Casper, and Payne (2014) conducted a research study using a sample of 5505 United States Army Officers. The sample was broken down into two sections, married and unmarried (Huffman et al., 2014). This study found that the spouse, for the married participants, was key in the decision to leave or

stay with the organization (Huffman et al., 2014). This study also found that the married participants stayed with jobs four years longer than the single participants (Huffman et al., 2014). However, Shuck, Twyford, Reio, and Shuck (2014) found that work demands was more of a predictor in turnover intention than work-life balance.

Relevant Studies of STEM Faculty. Colleges and universities have allowed the phenomenon of high turnover of faculty to become a cultural norm (Figueroa, 2015). Although faculty retention has been the subject of research, few studies have focused on women faculty in the STEM disciplines (Burnett et al., 2012). Burnett et al. (2012) explored issues of faculty attrition, focusing specifically on STEM women. The Burnett et al. (2012) study examined the different perceptions of STEM and Non-STEM faculty at a large upper-Midwestern public university. STEM faculty for this study included faculty in biology, chemistry, computer science, engineering, agriculture, mathematics and social sciences (Burnett et al., 2012). This study also included faculty members who had left the university in the previous two years (Burnett et al., 2012). This study indicated that faculty that who have resigned, women faculty, and faculty in non-STEM disciplines had lower job satisfaction than current faculty, male faculty and faculty in STEM disciplines (Burnett et al., 2012).

Thomas, Poole and Herbers (2015) conducted a semi-Markov model to examine the future faculty challenges within science and engineering faculties. Thomas, Poole and Herbers (2015) used faculty rosters at five points in time (1998, 2002, 2005, 2009 and 2012). Individuals were tracked for a seven-year period during these timeframes and given a category at the end of their time period (Thomas et al., 2015). These categories included Assistant Professor, Associate Professor, Professor, resigned, denied tenure or retired/died (Thomas et al., 2015). This model allowed the researchers to examine retention and promotion of STEM faculty across this time

period. Their analysis resulted in existing practices producing gender gaps in recruitment, retention and career progression among science and engineering faculty (Thomas, Poole, & Herbers, 2015). One result of this study was that women faculty, pre-and post-tenure, resigned voluntarily more often than men (Thomas et al., 2015).

Hagedorn (1996) researched the turnover intentions of female faculty. This study compared the turnover intentions of female faculty to their male counterparts based on the gender-pay gap (Hagedorn, 1996). This research indicated that the gender-pay gap impacted the intentions of female faculty to remain with the organization (Hagedorn, 1996). Xu (2008) researched the attrition rates and turnover intentions of female faculty members. The literature found that women in STEM faculty positions have higher turnover intention rates than men. Xu (2008) found that STEM faculty were more likely to experience voluntary turnover intention because of less research support and advancement opportunities. Ultimately, women did not feel as free to express their ideas as their male counterparts (Xu, 2008). Callister (2006) also conducted a study examining the relationship between gender and turnover intentions of faculty members in the STEM disciplines. Callister's (2006) study resulted in finding that female faculty members in science and engineering disciplines are more likely to leave the organization than their male counterparts. Callister (2006) determined that women faculty in STEM disciplines left the organization more often because of department climate, lack of autonomy and lack of promotion opportunities (Callister, 2006).

According to the SWE Retention Study, women are more likely than men to choose to leave STEM fields to avoid a negative work environment (Frehill, 2009d). The study also revealed that women leave STEM fields due to work-life integration priorities (Frehill, 2009d). Simard et al. (2008) argued that women tend to leave science and technology careers when they

hit midcareer due to blocked advancement. The SWE Retention Study revealed that the role of a manager or supervisor in work-life balance is very important (Frehill, 2009c). Su, Johnson and Bozeman (2014) also indicated that women in STEM academia are at a disadvantage because of the disproportional burden of career and family.

Webber and Rogers (2018) studied the job satisfaction of tenured and tenure-track faculty members in 100 colleges and universities across the United States. Webber and Rogers (2018) found that factors that influence women faculty's job satisfaction were impacted, in part, by work-life balance. The study used data from the Collaborate on Academic Careers in Higher Education (COACHE) survey. Although more women than men responded to the survey, the survey indicated some key differences in men and women (Webber & Rogers, 2018). These differences include that women faculty reported lower salaries, fewer women were tenured, and fewer women worked in the STEM disciplines (Webber & Rogers, 2018).

Pascale (2018) conducted a study that examined the causal relationship between faculty and institutional level variables and the intention to leave among women faculty in the STEM fields within higher education. This study utilized a quantitative design using secondary data from a large database provided by the United States Department of Education's National Center for Educational Statistics. Among the factors that may be important predictors of intention to leave for women who teach the STEM disciplines in higher education include positive perceptions of campus climate, job autonomy, compensation, security and institutional/departmental support.

Woman or Female. Researchers have used the terms female and woman interchangeably, sometimes within the research articles themselves (Joshi, 2014). For the purposes of this research, from identifying the problem to analyzing the results, it is imperative

to identify the participants as either female or woman. However, what was the most appropriate term for this research and for those that will use this research results within their organizations? Additionally, it was important that the participants of the study are able to identify with the study from the outset without being turned off by the terminology. The terms male/female man/woman have an inconsistent history (Joshi, 2014). This inconsistency goes as far as interchanging the terms female/man and woman/male within research (Joshi, 2014). Google Scholar was used to search both “Female STEM Professionals” and “Women STEM professionals.” The search for female stem professionals yielded 24,800 results. The search for women stem professionals yielded 24,700 results. This indicates that even among scholarly research that specifically focuses on STEM professionals, the terms female and women are used almost equally. The next paragraph explains some of the different connotations related to both female and woman.

The first distinction between woman and female is grammatical. The term woman is a noun and the term female is an adjective (Newton-Small, 2016). To some, female references a biological category (“Using ‘Lady,’ ‘Woman,’ and ‘Female’ to Modify Nouns”, 2018). A female can be any species, but a woman can only be a human (Newton-Small, 2016). The word ‘female’ should only be used when the word ‘male’ would be used in a similar situation (“Using ‘Lady,’ ‘Woman,’ and ‘Female’ to Modify Nouns, 2018). According to Joshi (2014), female is to only be used when the biological distinction is relevant or needs to be preserved. As discussed above, some avoid using the term female because it is also associated with animals, not just with humans (Joshi, 2014). Although it is the preference of women to not be called either professionally (Newton-Small, 2016), for example they would like to be considered a faculty member versus a female faculty member, for the purposes of this research a distinction must be

made. Only one question in this study refers to the gender of the participant, and this was an elimination question in order to ensure that the right individuals participate in the study. For the purposes of this study, the research used the term “woman” or “women” for the elimination question and throughout the study. The exception would be to use the term female when citing sources that used the word female in their article or research.

Transition and Summary

This section included a comprehensive review of organizational commitment, work-life balance, and voluntary turnover intention literature. The literature documented three types of organizational commitment to include affective, normative and continuance. The literature also discussed the importance of understanding voluntary turnover intention due to the costs associated with replacing valuable human resource capital.

Section two will provide a comprehensive review of methodology. Section two will begin with a restatement of the purpose of this study and details about the participants of the study. Section two will also go into details about the population that this study will focus on, women faculty in STEM disciplines. Once the population has been described, the data collection and the data analysis will be described. In addition to how the data were collected and analyzed, the next section will also go into detail about the reliability and validity of the questionnaires used in this study.

Section 2: The Project

This study employed quantitative methodology with a correlational design to examine if organizational commitment and work-life balance were related to the voluntary turnover intention. Section One of this study provided an introduction by discussing the background of the problem, the significance of the study, established the research questions and provided a detailed review of the scholarly literature related to this topic. This section outlines the procedures used to examine the correlation between organizational commitment, work-life balance and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States. This section is organized into the following sections: Purpose Statement, Role of the Researcher, Participants, Research Method and Design, Data Collection, Data Analysis Technique, and Reliability and Validity.

Purpose Statement

The purpose of this quantitative, correlational study was to examine the relationship between organizational commitment, work-life balance and voluntary turnover intention in women faculty in the STEM disciplines in colleges and universities within the United States. The results of this study may help leaders in colleges and universities as they make strategic human resource decisions, specifically those that impact women in the STEM disciplines. The implications of this research could yield information useful for the human resource budgets of colleges and universities as replacement costs of employees potentially decreases because of reduced turnover.

Role of the Researcher

The researcher served several roles in the execution of the dissertation. The researcher gained approval to conduct the study from Liberty University's Institutional Review Board (IRB)

and the creators of the questionnaires. Three questionnaires were used in this study. The first questionnaire was the revised Organizational Commitment Questionnaire Revision with Specific Commitment Scales (Meyer & Allen, 2004). The second questionnaire was the Work-Life Balance Questionnaire (Brough, Timms, O'Driscoll, Kalliath, Siu, Sit, & Lo, 2014). The final questionnaire was the Turnover Intention Scale (Roodt, 2012).

The researcher utilized inferential statistics to analyze the data collected throughout the process. Lastly, the researcher interpreted the results to examine the relationship between organizational commitment, work-life balance and voluntary turnover intention. Upon completion of the process, the researcher determined where further research could potentially contribute to the body of knowledge regarding organizational commitment, work-life balance and voluntary turnover intention.

Participants

The target population for this study was women faculty members in the STEM disciplines employed at colleges and universities within the United States. As of 2013, there were 99,200 STEM women faculty members at four-year colleges and universities within the United States (Women, Minorities, and Persons with Disabilities in Science and Engineering, 2016). The source of the sample was Survey Monkey's Education Audience and social media sites such as Facebook, LinkedIn and Twitter. The Survey Monkey Audience database was available upon receipt of payment. The researcher did not have direct contact with the participants. Survey Monkey only provided aggregate data results that was imported into SPSS Version 24. The participants were anonymous and had the opportunity to opt out of the questionnaire at any point. The participants had access to the researcher's contact information in

the event of questions or concerns. The participants also had the contact information for the dissertation chair that was available to address questions or concerns regarding the project.

Inclusion criteria for this doctoral study was individuals that agree to the informed consent, individuals that were over 18 years of age and individuals who were women faculty working in the STEM disciplines at colleges and universities within the United States. Exclusion criteria was individuals that did not agree to the informed consent, individuals that were younger than 18 years of age and individuals that were not women faculty members in the STEM discipline working at colleges and universities within the United States. The source of the sample was from Survey Monkey's Education Audience, which includes the database of college and university employees. This database was available once surveymonkey.com receives payment. An additional source for the sample was social media sites such as Facebook, LinkedIn and Twitter.

Research Method and Design

Turnover is expensive, impacts productivity, and leads to a loss of organizational knowledge (Mayfield & Mayfield, 2007). The method of research chosen must provide insight into this business problem. This quantitative research study examined the relationship between organizational commitment, work-life balance and voluntary turnover intention of women faculty members working in the STEM disciplines at colleges and universities within the United States. This section presents a summary of the method and design. The research method and design addressed the project's research questions.

Method. The research method was guided by the research questions. The quantitative method was chosen for this doctoral study because quantitative methods are useful for applying the results of smaller groups to broader populations with similar characteristics (Swanson &

Holton, 2005). When a quantitative method is used, the same result should be achieved if the study is repeated (Burns, 2000). Quantitative research is often used to examine the relationship between variables using a pre-determined instrument based on obtaining data (Castillo-Page, Bodilly, & Bunton, 2012; Creswell, 2014; Karanja, Zaveri, & Ahmed, 2013). The relationship between variables indicates that one variable may cause the second variable (Zikmund, 2003). The quantitative method was chosen to examine the relationship between the three types of organizational commitment (affective, continuance and normative), work-life balance and voluntary turnover intention.

Design. Quantitative research involves four main designs to include descriptive, correlational, experimental and quasi-experimental (Chudleigh & Smith, 2015; Creswell, 2014; Turner, Balmer, & Coverdale, 2013). Correlational research examines associations between variables (Chudleigh & Smith, 2015). This research was designed as a correlational, non-experimental quantitative study that focused on the three main variables listed below. The quantitative, correlational method of data analysis was chosen to examine the relationship between voluntary turnover intention (dependent variable), work-life balance (independent variable) and the three types of organizational commitment (independent variables). The experimental design was not chosen because the variables were not influenced, only examined.

Population and Sampling

The population, within a research study, is a large collection of individuals from which a scholar may draw a research sample (Emmel, 2015). The population for this study was a group of women faculty members working within the STEM disciplines at colleges and universities within the United States. It is important to select suitable participants for the study, as the participants affect the reliability and validity of the results (Lewis, 2013). Survey Monkey

distributed the questionnaire to their education audience pool. The survey was also shared on social media sites such as Facebook, LinkedIn and Twitter. The sample frame for this study was women faculty members working within the STEM disciplines at colleges and universities within the United States who are also members of Survey Monkey's Education Audience, as well as those that see the invitation to participate on social media sites such as Facebook, LinkedIn and Twitter. The sample excluded non-faculty employees of colleges and universities and all male faculty members of college and universities. All women faculty members in STEM disciplines in the Survey Monkey Education Audience and who saw the invitation on social media sites such as Facebook, LinkedIn or Twitter had an opportunity to participate in the questionnaire. Those that participated were the sample for this study. The sample size was calculated using Krejcie and Morgan's (1970) sample size chart, based on the formula in the same article. The sample size was based on a .05 degree of accuracy and 95% confidence level. Based on this chart if the population was 75,000 or over the sample frame size would be 382. When the population reaches 100,000 the sample frame size was 384. Another source used to determine the sample size was Survey Monkey's sample size calculator. The population size of 99,200 with a confidence level of 95% and margin of error of 5% was input into the calculator. The resulting sample size was 383 (Survey Monkey, 2017). For the purpose of this research, the study used the sample frame size of 384.

The targeted population of this study was women faculty members in the STEM disciplines that work at colleges and universities within the United States. The information collected might help strategic level decision makers make changes to policies and systems that impact the strategic human resource decisions in universities and colleges. This study may provide a broader impact on other organizations with similar organizational commitment, work-

life balance and turnover challenges. Additionally, this study may help the women faculty in the STEM disciplines, as organizations begin to understand how women become committed to their organizations and how these two variables impact their decision to leave or stay with the organization.

Data Collection

This section provides a summary of the questionnaires used and why the particular questionnaire was selected. This section also provides a summary of the data collection and organization techniques. This section was important to the study because how the data were collected has an impact on the reliability and validity of the study.

Questionnaires. The questionnaires used for this doctoral study was an online questionnaire comprised of three separate previously validated questionnaires to include the Organizational Commitment Questionnaire (OCQ) Revision with Specific Commitment Scales (Meyer & Allen, 2004), Work Life Balance Questionnaire (Brough, et al., 2014) and Turnover Intention Scale (Roodt, 2004). All of these questionnaire are found in Appendix A. Data were collected using an online questionnaire housed on the Survey Monkey site. The questionnaire was protected and secured by a confidential username and password utilized by the researcher. Once the questionnaire was closed out surveymonkey.com data collection tools were used to consolidate the data into a format that can be analyzed.

The first page of the questionnaire provided informed consent information that explained that participation was voluntary and that all data provided will be kept anonymous. The questionnaire was conducted electronically through surveymonkey.com using the Survey Monkey Audience. The link to the survey was also shared via social media sites such as Facebook, LinkedIn and Twitter. A brief intro to the questionnaire explained that participation

was voluntary and anonymous. The informed consent described the purpose of the doctoral study, and how the information obtained through the questionnaire will be utilized (Fink, 2012). The individual was not be able to continue with the questionnaire unless they electronically signed the informed consent. The second page of the questionnaire asked the inclusion questions. Inclusion questions included asking if the individual was a woman faculty member in a STEM discipline that currently worked for a college or university within the United States. The second page of the questionnaire also asked if the participant was at least 18 years of age. If the participant was not 18 years of age, a woman and a faculty member in a STEM discipline that currently worked for a college or university within the United States, they could not continue with the questionnaire. The Survey Monkey results were obtained and the quantitative analysis was performed using SPSS version 24. The questionnaire was not linked to specific individuals and did not require login information, to provide the participants adequate ethical protection.

Demographics. The first six questions of the questionnaire were demographic and elimination questions. These questions confirmed that the subject was at least 18 years of age, a woman and worked as a faculty member in the STEM discipline at a college or university within the United States. If the participant answered no to being at least 18 years of age, being a woman or working as a faculty member in the STEM disciplines at a college or university in the United States, they received a message thanking them for participating, but they did not fit the targeted population for this questionnaire. This section of the questions also identified how long (years/months) faculty members had been with the organization and how long (years/months) they had been in their current position. Additionally, this part of the survey asked the participant if this was their first (or subsequent) career. The demographic questions were for the purposes of

collecting information only and were not used to analyze the data. As previously stated, it took the participants no longer than 3 minutes to complete this portion of the questionnaire.

Organizational commitment. The next 18 questions came from the Organizational Commitment Questionnaire (OCQ) Revision with Specific Commitment Scales (Meyer & Allen, 2004). This questionnaire examined the three different types of commitment to include affective, continuance and normative (Meyer & Allen, 2004). This questionnaire used the 7-point Likert scale (Meyer & Allen, 2004). This version of the Organizational Commitment Questionnaire was based on the original Three-Component Model of commitment (Meyer & Allen, 1991; Meyer & Allen, 1997). Each of these organizational commitment scales were scored separately (Meyer & Allen, 2004). The academic version of the Three-Component Model Employee Commitment Survey was used for this study (Meyer & Allen, 2004). The purpose of the academic version was to provide a one-time use for academic research only (Meyer & Allen, 2004). The authors of the questionnaires recommend that the questions from the three types of commitment be scored separately (Meyer & Allen, 2004). The participant's responses for all items within each scale (affective, continuance or normative) were averaged to yield the overall score for each component (Meyer & Allen, 2004). The validity and reliability of this scale has been confirmed through multiple studies, but can not be confirmed if the scale is altered (Meyer & Allen, 2004). The scales were not altered for the purpose of this doctoral study. This questionnaire took the participant no longer than nine minutes to complete.

Work-Life Balance. Work-life balance was measured using the Work-Life Balance Measure designed by Brough et al. (2014). This questionnaire included four questions, all of which are answered with a 5-point Likert scale with the following criteria: (1) Strongly Agree; (2) Agree; (3) Neither Agree nor Disagree; (4) Disagree and (5) Strongly Disagree (Brough et

al., 2014). Question two was reverse scored (Brough et al. 2014). The purpose of this questionnaire is to measure the participant's perception of their work-life balance at the time that they take the questionnaire. Higher scores represent better perceptions of work-life balance (Chan et al., 2016). This questionnaire was tested in four independent samples in which it's criterion-related validity was established (Brough et al., 2014). This validity was confirmed with a longitudinal analysis as well (Brough et al., 2014). This questionnaire also demonstrated predictive validity when used with a turnover intention variable (Brough et al., 2014). This questionnaire was combined with the Three-Component Employee Commitment Survey (Meyer & Allen, 2004) and the six questions from the Turnover Intention Scale (Roodt, 2004). The questionnaire was not changed or adjusted from it's original format for this doctoral study. It took the participant no more than two minutes to complete this portion of the questionnaire.

Voluntary Turnover Intention. The final six questions of the questionnaire concerned the participant's voluntary intention to leave the organization. This questionnaire uses a 5-point Likert scale (Roodt, 2004). The criteria for the 5-point Likert Scale varied by question with the options being never/always, very satisfying/totally dissatisfying, and highly unlikely/highly likely (Roodt, 2004). This scale has proven to be reliable to measure turnover intentions reliably with Cronbach's alpha of .8 (Bothma & Roodt, 2012). This questionnaire took no more than three minutes to complete. The participant's responses for all items within each scale were averaged to yield the overall score for each component, with reverse scored items being accounted for (Meyer & Allen, 2004).

Data Collection Technique. The questionnaires were used to collect the data for this doctoral study. Data collection occurred via a questionnaire at a single point in time. The questionnaire was open until the required sample size was achieved. Survey Monkey sent out

invitations to their Survey Monkey Audience members who are over the age of 18 and who work at a university or college. The survey invitation was also shared on social media sites such as Facebook, LinkedIn and Twitter. Once the online questionnaires were complete, the data were imported into SPSS. The researcher did not have direct access to the participants.

Data Organization Technique. It is important to safeguard and properly organize the data collected through this doctoral study. Data were downloaded from a password protected Survey Monkey account and stored on the researcher's password-protected laptop. The documents with the data are also password protected. The reports that result from analyzing the data through SPSS are also be password protected. Data collected from the doctoral study will remain in the possession of the researcher for three years after completion of the doctoral study per university Institutional Review Board requirements. After three years, the researcher will delete all data from the personal computer.

Data Analysis

Statistical Package for the Social Science – Version 24 (SPSS-24) was used to analyze the data. The questionnaire data from the quantitative study was used to examine the research questions to determine if a correlation exists. Correlation is defined as the linear association between variables to determine if one variable changes the other (Anderson, Sweeney, & Williams, 2014). Kendall Tau correlational coefficient was used for this study. The Kendall Tau Correlation Coefficient was used because the survey responses use ordinal scales.

Variables. Before the questions in the questionnaire were determined, the researcher determined the independent and dependent variables. The independent and dependent variables were chosen because of the relationship of the variables to the project's research question. There are four independent variables for this study to include affective organizational commitment,

continuance organizational commitment, normative organizational commitment and work-life balance. The dependent variable for this study was the voluntary turnover intention of women faculty in STEM disciplines at colleges and universities. Analysis of the data included the use of SPSS version 24. The variables, along with the questionnaire questions that measure the variables, the data scale used and how the data was calculated is found in Table 2 below.

Table 2

Research Variables (Initial Data Collection)

Research Variable	Variable Description	Questionnaire/Question	Data Scale	Initial Data Collection
Demographics	Age	Questionnaire 1/Q1-Q6	Ratio	As Is
Independent	Organization Commitment (Affective)	Questionnaire 2/Q7-Q12	Ordinal	*Mean of Answers
Independent	Organization Commitment (Continuance)	Questionnaire 2/Q13-18	Ordinal	*Mean of Answers
Independent	Organization Commitment (Normative)	Questionnaire 2/Q19-24	Ordinal	*Mean of Answers
Independent	Work-Life Balance	Questionnaire 3/Q25-28	Ordinal	*Mean of Answers
Dependent	Turnover Intention	Questionnaire 4/Q29-34	Ordinal	*Mean of Answers

**Adjust for Reverse*

The study used inferential statistics. Inferential statistics are used to make inferences about a population (Leedy & Ormrod, 2010). Inferential statistics were applied to test the hypothesis and relationship between the variables (Polit, 2010). The study utilized Kendall Tau's Rank Correlation Coefficient measure of correlation to determine if a correlation exists between the dependent variable (voluntary turnover intention) and the independent variables

(affective commitment, continuance commitment, normative commitment and work-life balance). The analysis of this data was performed using Statistical Package for the Social Sciences (SPSS) Version 24. SPSS, originally released in 1968, continues to be one of the most widely used computer programs for data analysis (Wellman, 2007). The variables, along with the type of statistics and the specific measures used to analyze the data are listed in Table 3 below.

Table 3

Research Variable (Data Analysis)

Research Variable	Variable Description	Type of Statistics	Specific Measurements
Demographics	Age (Years)	Descriptive	Mean, Median, Mode, Standard Deviation, Low and High
Demographics	Job Tenure (Months/Years)	Descriptive	Mean, Median, Mode, Standard Deviation, Low and High
Demographics	Organizational Tenure (Months/Years)	Descriptive	Mean, Median, Mode, Standard Deviation, Low and High
Demographics	What Career?	Descriptive	Mean, Median, Mode, Standard Deviation, Low and High
Organizational Commitment	Scores for Each of the Commitment Types (Affective, Continuance and Normative)	Descriptive	Mean, Median, Mode, Standard Deviation, Low and High
Work-Life Balance	Perception of Work-Life Balance	Descriptive	Mean, Median, Mode, Standard Deviation, Low and High
Turnover Intention	Intention to Turnover	Descriptive	Mean, Median, Mode, Standard Deviation, Low and High
Each Type of Organizational Commitment and Turnover Intention	Each Type of Organizational Commitment and Turnover Intention	Inferential	Kendall's tau Rank Correlation Coefficient
Work-Life Balance and Turnover Intention	Work-Life Balance (Independent Variable) and Turnover Intention (Dependent Variable)	Inferential	Kendall's tau Rank Correlation Coefficient

Reliability and Validity

The design for this study was grounded in The Social Exchange Theory, Mobley's Job Satisfaction Theory and the Three-Component Model of Organizational Commitment.

Quantitative research seek explanations and predictions for a particular set of variables to that a research can develop generalizations and contribute to the theories of the study (Williams, 2007).

Credible research is subject to reliability and validity. A key moment to consider reliability and validity is when the research questionnaires are created or selected. As discussed in the previous section, the research questionnaire selected for this study was an online questionnaire through surveymonkey.com comprised of three established survey instruments. The reliability and validity of the questionnaire and techniques are described in this section. The Organizational Commitment Questionnaire is the first general commitment measure that was deemed valid and reliable (Mowday et al., 1982).

Reliability. Creswell (2014) and Drost (2011) describe reliability as the consistent approach across researchers and projects. The reliability of a study demonstrates consistent and repeatable administration and response (Creswell, 2014; Drost, 2011). Reliability is the likelihood that the instrument consistently produces the same results (Antonius, 2013; Cooper & Schindler, 2008). It is important that the research instrument utilized in the research accurately and consistently measures the topic examined (Creswell, 2014; Drost 2011).

Validity. Validity occurs when data accurately and precisely quantifies what it was meant to measure (Holton & Burnett, 2005). Validity also indicates that the conclusions drawn are truthful (Zarit, Stephens, & Femia, 2003). The sample size of the study enhances the validity of the findings. External validity, also known as the generalizability of the findings, establishes trustworthiness in the data analysis of quantitative research (Cooper & Schindler, 2008). The

four potential threats to validity are internal validity threats, external validity threats, statistical conclusion threats, and construct validity threats (Creswell, 2014; Drost, 2011). This section will specifically discuss the internal validity threats and the external validity threats.

Internal Validity Threats. Internal validity refers to the extent the researcher can infer a causal relationship between variables (Gronhaug & Ghauri, 2010). According to Chong-ho (2015), internal validity is present when there is enough evidence to substantiate a claim. The researcher controlled the internal validity of this study by including women faculty members in the STEM discipline. Additionally, using historically valid tools such as the Organizational Commitment Questionnaire and the Organizational Commitment Questionnaire (OCQ) Revision with Specific Commitment Scales increases the validity of this study.

External Validity Threats. External validity is the extent that the study can be generalized, particularly across populations, settings and times (Creswell, 2005; Johnson & Christensen, 2004, Parker 1993). One threat to the external validity of this project is that the population came from Survey Monkey's Audience and through social media such as LinkedIn, Twitter and Facebook. This population may be more engaged based on their willingness to participate in questionnaires regarding their specific career field or employment sector. The external validity is impacted by the ability to generalize these results to other target populations such as women faculty members in other disciplines outside of STEM.

Reliability and Validity of Affective, Continuance and Normative Commitment Scales. Several studies have used the Affective, Continuance and Normative Commitment Scales (Allen & Meyer, 1996). The internal consistency of the three-component commitment scales has been measured using the alpha coefficient (Allen & Meyer, 1996). Allen and Meyer (1996) analyzed the coefficient alpha of the three-component questionnaire using 40 employee samples

representing more than 16,000 employees from a diverse set of organizations and occupations).

In this analysis, employees responded to at least one of the three commitment measures (Allen & Meyer, 1996). The median reliability for affective commitment was .85 (Allen & Meyer, 1996).

The median reliability for continuance commitment was .79 (Allen & Meyer, 1996). Finally, the median reliability for normative commitment was .73 (Allen & Meyer, 1996). The reliability of

the commitment measures was also analyzed using test-retest reliability. Table 4 describes

internal consistency reliabilities for affective, continuance and normative commitment scales.

Table 4

<i>Internal Consistency Reliabilities for Affective, Continuance and Normative Commitment Scales</i>			
ACS	CCS	NCS	Reference/Sample
.79	.79	.79	Allen & Lee (1993)
.87	.75	.79	Allen & Meyer (1990)
			-Sample 1
.86	.82	.73	Allen & Meyer (1990)
			-Sample 2
.82	.81	.74	Allen & Smith (1987)
.79	.69	.65	Cohen (1993)
.81	.69	.74	Finegan (1994)
.86	.79	.73	Hackett, Bycio, & Hausdorf (1994)
			- Sample 1
.84	.75	.75	Hackett, Bycio, & Hausdorf (1994)
			- Sample 2
.86	.78	.67	Lee (1992)
.88	.81	.78	Lynn (1992)
.83	.84	.71	McDonald (1993)
.82	.74	.83	Meyer, Allen & Smith (1993)
.88	.83	.52	Randall, Fedor & Longenecker (1990)
.84	.80	.76	Reilly & Orsak (1991)
.81	.74	.71	Somers (1993a; 1993b)

Note: Adapted from "Affective, Continuance, and Normative Commitment to the Organization: An Examination of Construct Validity," by N. Allen and J. Meyer, 1996, *Journal of Vocational Behavior*, 49, p. 256.

Reliability and Validity of the Work-Life Balance Questionnaire. Work-life balance was measured using an questionnaire designed by Brough, Timms, O'Driscoll, Kalliath, Siu, Sit, and Lo (2014). This questionnaire was validated with four independent samples from two different countries (Brough et al., 2014). The criterion-related validity of this questionnaire was also measured with the antecedent variable of work demands and outcome variables that included job satisfaction, family satisfaction, psychological strain and turnover intentions (Brough et al., 2014). Additionally, this questionnaire was used within a cross-sectional and in a longitudinal study, both confirming the validity of the questionnaire (Brough et al., 2014).

Transition and Summary

This quantitative research study tested the hypotheses using data collected through Survey Monkey and social media sites such as Facebook, Twitter and LinkedIn using three questionnaires to include the Organizational Commitment Questionnaire (OCQ) Revision with Specific Commitment Scales (Meyer & Allen, 2004), Work-Life Balance Questionnaire (Brough, Timms, O'Driscoll, Kalliath, Siu, Sit, & Lo, 2014), and the Voluntary Turnover Intention Questionnaire (Roodt, 2004). A sample size of over 384 respondents were obtained. Once the sample size was reached, the data was analyzed using SPSS Version 24. A detailed analysis of this data will be provided in the next section.

Section 3: Application to Professional Practice and Implications for Change

This study was derived from research problems that focus on the relationship between organizational commitment, work-life balance and turnover intention. A summary of the analytical results and presentation of the findings is found in section three. The study focused on two main research questions. The first main research question centered on the relationship between the three types of organizational commitment (affective, continuance and normative) and turnover intention. The second main research question focused on the relationship between work-life balance and turnover intention. Included in this section is the overview of the study, presentation of the findings, application to professional practice, recommendations for action, recommendations for further study, reflections, summary and study conclusions.

Overview of the Study

The purpose of this quantitative, correlational study was to examine the relationship between organizational commitment (affective, continuance and normative), work-life balance and turnover intention of women faculty who teach in the STEM disciplines at colleges and universities within the United States. The independent variables of this study were organizational commitment (affective, continuance and normative) and work-life balance. The dependent variable of this study was turnover intention. The online survey used for this study was comprised of three separate previously validated questionnaires to include the Organizational Commitment Questionnaire (OCQ) Revision with Specific Commitment Scales (Meyer & Allen, 2004), Work Life Balance Questionnaire (Brough, et al., 2014) and Turnover Intention Scale (Roodt, 2004). Permission was gained from the survey owners to utilize all three survey instruments. Participants were recruited through the Survey Monkey Audience and through social media sites such as Facebook, LinkedIn and Twitter to participate in the study.

Five hundred fifty eight individuals voluntarily participated in the study after reading the informed consent. These participants answered an online survey hosted by Survey Monkey that included qualifying questions, organizational commitment questions (affective, continuance and normative), work-life balance questions and turnover intention questions. Of the 558 individuals that started the survey, 424 participants provided complete responses. None of the incomplete surveys were utilized in the analysis of the data. Descriptive and inferential statistics were used to analyze the data. Specifically, Kendall's tau-b was used to determine if a relationship exists between the independent variables (organizational commitment and work-life balance) and the dependent variable (turnover intention).

Presentation of Findings

This quantitative, correlational study used three established surveys to poll women faculty who work in the STEM disciplines at colleges and universities within the United States regarding their organizational commitment, work life balance and turnover intention. Because the research was focused on women faculty that teach the STEM disciplines at colleges and universities within the United States, only those individuals that met these qualifying criteria were included in the following results. Males, women that teach outside of the United States, women who teach disciplines other than STEM and women that do not teach at the college and university level were not included in this study.

All of the hypotheses were tested using the same population. This paragraph includes a discussion of demographics to include age, time in the organization, time in the current position and which career the participant is in currently. The first demographics presented is the age of the study participants. The mean age of the participants was 45.17 years (Table G). The youngest participant was 23 and the oldest participant was 73. Table 11 in Appendix G shows

the participant's time in their current position and time with their current organization. Based on the information in this chart, the mean time an individual has spent in their current position is almost seven and a half years. The mean time spent with their current organization is almost nine years, three months. The minimum amount of time for both position and organization was one month. The maximum amount of time in the position was 38 years and one month. The maximum amount of time in the organization was 40 years.

Table 12 in Appendix G is the summary of responses from the question that asked if their current position was their first career. This table indicated that 47.2 percent, or 200 participants, indicated that their current position was their first career. The remaining 52.8 percent have had at least one other career. A chart going into more detail about what career a participant is in is also found in Table 13 of Appendix G. As indicated in the previous chart, 200 participants, or 47.2 percent are in their first career. The remaining results are that 35.6 percent are in their second career, 13 percent are in their third career, 3.1 percent are in their fourth career and 1.2 percent are in their fifth. The participants were only given the option to respond with the second, third, fourth and fifth careers. If individuals had more careers there was not a place in the survey to indicate this, which is one limitation of this study.

Each of the research questions and hypotheses are discussed below to include the descriptive and inferential statistics of the specific hypothesis. Descriptive statistics were used to evaluate each of the independent variables. The tables in Appendix G show the mean, median, mode, standard deviation, minimum and maximum for each of the questions asked for each set of questions representing each variable. Additionally, a histogram showing the mean for each variable is shown in a figure for each of the variables. Scores for reverse keyed items were adjusted.

The Kendall's tau-b, also known as Kendall Rank Correlation Coefficient, was used in this study. Specifically, Kendall's tau-b correlation was used to determine the relationship between the three types of organizational commitment (independent variables), work-life balance (independent variables) and turnover intention (dependent variable). Kendall's tau-b is a non-parametric measure of relationships between columns of ranked data. The main assumption of Kendall's tau-b are that the two variables are measured on ordinal or continuous scales (Morgan, Leech, Gloeckner, & Barrett, 2011). Likert scales, like the ones used in this study, are ordinal scales (Bishop & Herron, 2015; Norman, 2010). This assumption was met by all the variables. Kendall's tau-b returns a value of zero to one, where zero is no relationship and one is a perfect relationship. Each of these research questions and hypotheses will be discussed individually below.

The analysis began with the descriptive statistics for the specific hypotheses. The analysis continued with the distribution of the data and conclusions based on the results using inferential statistics. This information is used to reject or fail to reject the null hypothesis and ultimately answer the research questions.

Null Hypothesis 1

There are two main hypotheses, the first of which is broken up into three sub-hypotheses. These three sub-hypotheses focus on the three different types of organizational commitment to include affective, continuance and normative. Each of the hypotheses based on organizational commitment are discussed below.

Null Hypothesis 1a (Affective Commitment). The first null hypothesis is that there is no statistically significant relationship between affective organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and

universities within the United States. Initially a descriptive analysis was conducted to look at the means of the individual questions, as well as the overall mean, on the affective commitment questions. Furthermore, to test the null hypothesis Kendall's tau-b was conducted to determine if there is a relationship between affective organizational commitment and turnover intention. Specifically, Kendall's tau-b correlation was used to determine the relationship between affective commitment (independent variable) and turnover intention (dependent variable). Kendall's tau-b is a non-parametric measure of relationships between columns of ranked data. The main assumption of Kendall's tau-b is that the two variables are measured on ordinal or continuous scales (Morgan, Leech, Gloeckner, & Barrett, 2011). This assumption was met while testing this null hypothesis. Likert scales, like the ones used in this study, are ordinal scales (Bishop & Herron, 2015; Norman, 2010).

Null Hypothesis 1a Descriptive Analysis. The descriptive analysis data for the questions for affective commitment are shown in Table 14 in Appendix G. There were 424 complete responses for this set of questions. The highest mean for this set of questions with a 4.99 was for question one of the survey, "I would be very happy to spend the rest of my career with this organization." The lowest mean for this set of questions with a 4.19 was for question two of the survey, "I really feel as if this organization's problems are my own." There were three reverse keyed items in this set of questions and all scores were adjusted during this analysis. The mean for these six questions was 4.67. This mean represents the mean for the dependent variable, affective commitment. The mean is used in the Kendall tau-b analysis examining the relationship between the independent variable, affective commitment, and the dependent variable, turnover intention. The mean of all six questions combined was slightly negatively skewed with a skewness statistic of -.522 overall, which is visually represented in Figure 2.

Skewness pertains to the curve of the distribution, which is considered normal at zero. Morgan, Leech, Gloeckner, and Barrett (2011) provided an arbitrary guidelines that a skewness of more than +1.0 or less than -1.0 is indicative of a distribution that is markedly skewed. The mode can not be calculated on the mean, however the mode for the individual questions was five for one question and six for the remaining questions.

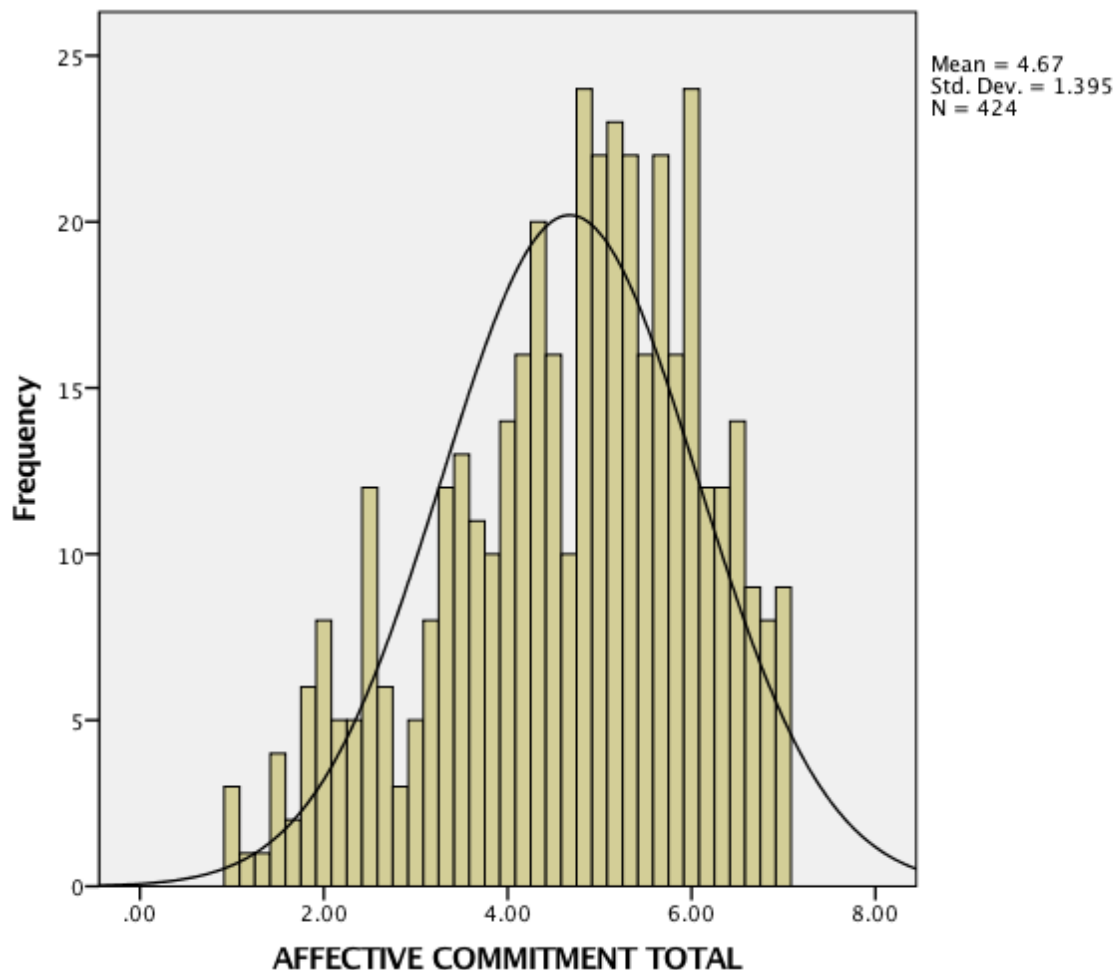


Figure 2. Histogram (Affective Commitment Mean)

Null Hypothesis 1a Inferential Analysis. To investigate the relationship between affective commitment and turnover intention, Kendall's tau-b was conducted. The analysis indicated a statistically significant negative association between affective commitment and turnover

intention, $\tau\text{-}b(422) = -.488, p < .001$. These data are found in the SPSS output found in Table 5. This means that the less affective commitment an individual has, the more likely they are to have turnover intention and that the more affective commitment an individual has, the less likely they are to have turnover intention. Based on these results, the null hypothesis that there is a statistically significant relationship between affective commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States is rejected.

Morgan, Leech, Gloeckner and Barrett (2011) indicate that statistical significance does not provide information about the strength of the relationship, but effect size does. Effect size is defined as the strength of the relationship between the variables, dependent and independent (Morgan, Leech, Gloeckner & Barrett, 2011). The correlation coefficient for affective commitment and turnover intention is $-.488$ indicating a relationship that is between small and medium according to Morgan, Leech, Gloeckner and Barrett (2011). The scatter plot in Figure 9 provides a visual of the relationship between affective and turnover intention. The scatter plot in Figure 3 also provides a visual that as affective commitment increases, turnover intention decreases.

Table 5

Kendall's tau-b (Affective Commitment)

			Affective Commitment Total	Turnover Intention Total
Kendall's tau-b	AFFECTIVE	Correlation Coefficient	1.000	-.488**
	COMMITMENT	Sig. (2-tailed)	.	.000
	TOTAL	N	424	424
	TURNOVER	Correlation Coefficient	-.488**	1.000
	INTENTION TOTAL	Sig. (2-tailed)	.000	.
			N	424

**. Correlation is significant at the 0.01 level (2-tailed).

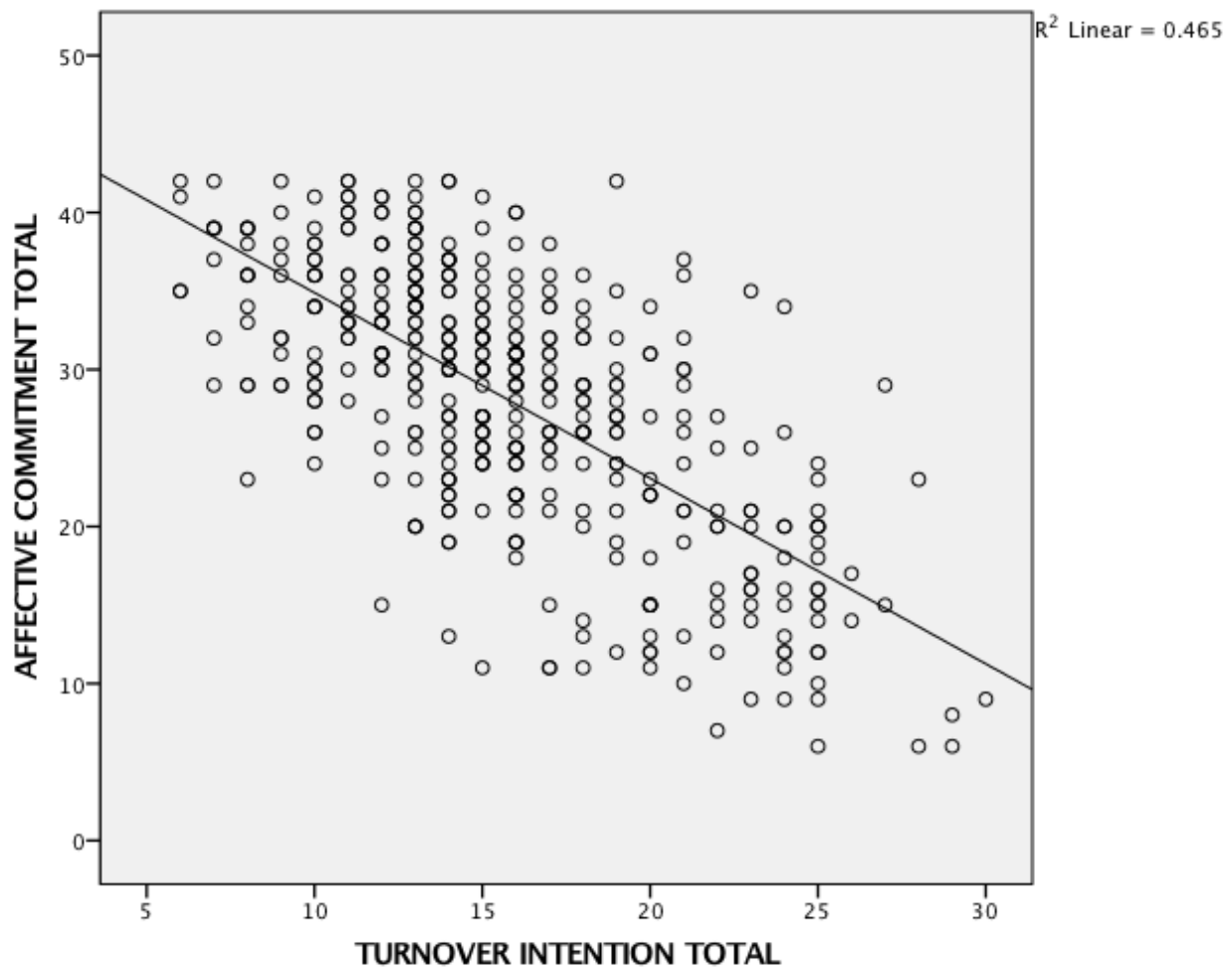


Figure 3. Scatter Plot (Affective Commitment Mean/Turnover Intention Mean)

Null Hypothesis 1b (Continuance Commitment). The second null hypothesis of this study is that there is no statistically significant relationship between continuance organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States. Initially a descriptive analysis was conducted to look at the means of the individual questions, as well as the overall mean, on the continuance commitment questions. Furthermore, to test the hypothesis Kendall's tau-b was conducted to determine if there is a relationship between continuance organizational commitment and turnover intention. Specifically, Kendall's tau-b correlation was used to determine the relationship between continuance commitment (independent variable) and turnover intention (dependent variable). Kendall's tau-b is a non-parametric measure of relationships between columns of ranked data. The main assumption of Kendall's tau-b is that the two variables are measured on ordinal or continuous scales (Morgan, Leech, Gloeckner, & Barrett, 2011). This assumption was met while testing this null hypothesis. Likert scales, like the ones used in this study, are ordinal scales (Bishop & Herron, 2015; Norman, 2010).

Null Hypothesis 1b Descriptive Analysis. The descriptive analysis of the questions for continuance commitment are shown in Table 15 in Appendix G. There were 424 complete responses for this set of questions. The highest mean for this set of questions with a 4.57 was for, "Right now, staying with my organization is a matter of necessity as much as desire." The lowest mean for this set of questions with a 3.20 was for, "If I had not already put so much of myself into this organization, I might consider working elsewhere." There were no reverse keyed items in this set of questions. The mean for these six questions was 4.03. This average represents the mean for the independent variable, continuance commitment. The mean is used in the Kendall tau-b analysis examining the relationship between the independent variable,

continuance commitment, and the dependent variable, turnover intention. The responses were almost completely normally distributed with a skewness statistic of .001, which is visually represented in Figure 4. The mode can not be calculated on the mean, however the mode for the individual questions was six for two questions and two for the remaining questions.

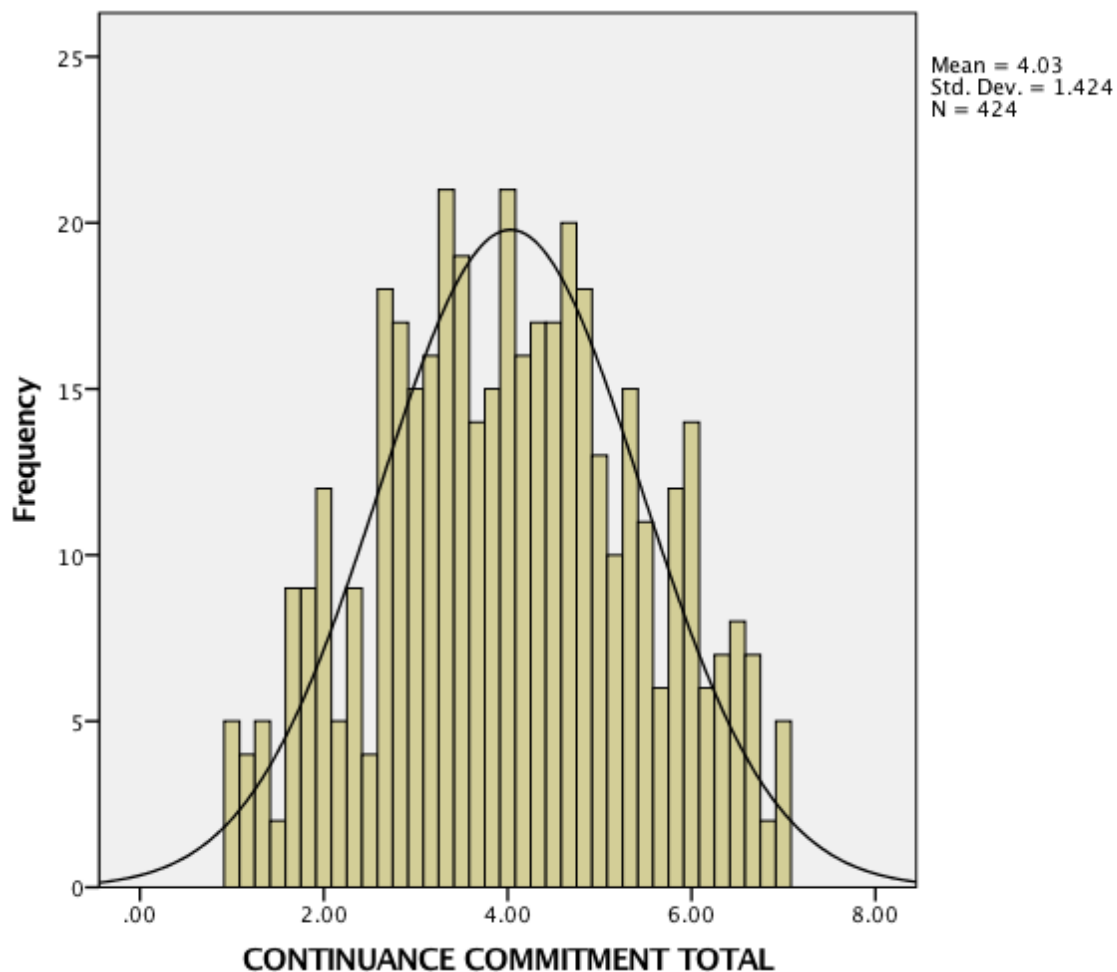


Figure 4. Histogram (Continuance Commitment Mean)

Null Hypothesis 1b Inferential Analysis. To investigate the relationship between continuance commitment and turnover intention, Kendall's tau-b was conducted. The results are

found in Table 6 below. The analysis indicated a statistically significant positive association between continuance commitment and turnover intention, $\tau\text{-}b(422) = .187, p < .001$. This means that the more continuance commitment an individual has, the more likely they are to have turnover intention and that the less continuance commitment an individual has, the less likely they are to have turnover intention. Based on these results, we must reject the null hypothesis that there is no statistically significant relationship between continuance commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

Morgan, Leech, Gloeckner and Barrett (2011) indicate that statistical significance does not provide information about the strength of the relationship, but effect size does. Effect size is defined as the strength of the relationship between the variables - dependent and independent (Morgan, Leech, Gloeckner & Barrett, 2011). The correlation coefficient for continuance commitment and turnover intention is .187 indicating a relationship that is less than small according to Morgan, Leech, Gloeckner and Barrett (2011). The scatter plot in Figure 5 provides a visual of the relationship between continuance commitment and turnover intention. The scatter plot in Figure 5 does not appear to provide a definitive relationship between continuance commitment and turnover intention.

Table 6

Kendall's tau-B (Continuance Commitment)

			Continuance Commitment Total	Turnover Intention Total
Kendall's tau-b	CONTINUANCE COMMITMENT TOTAL	Correlation	1.000	.187**
		Coefficient		
		Sig. (2-tailed)	.	.000
	TURNOVER INTENTION TOTAL	N	424	424
		Correlation	.187**	1.000
		Coefficient		
		Sig. (2-tailed)	.000	.
		N	424	424

**. Correlation is significant at the 0.01 level (2-tailed).

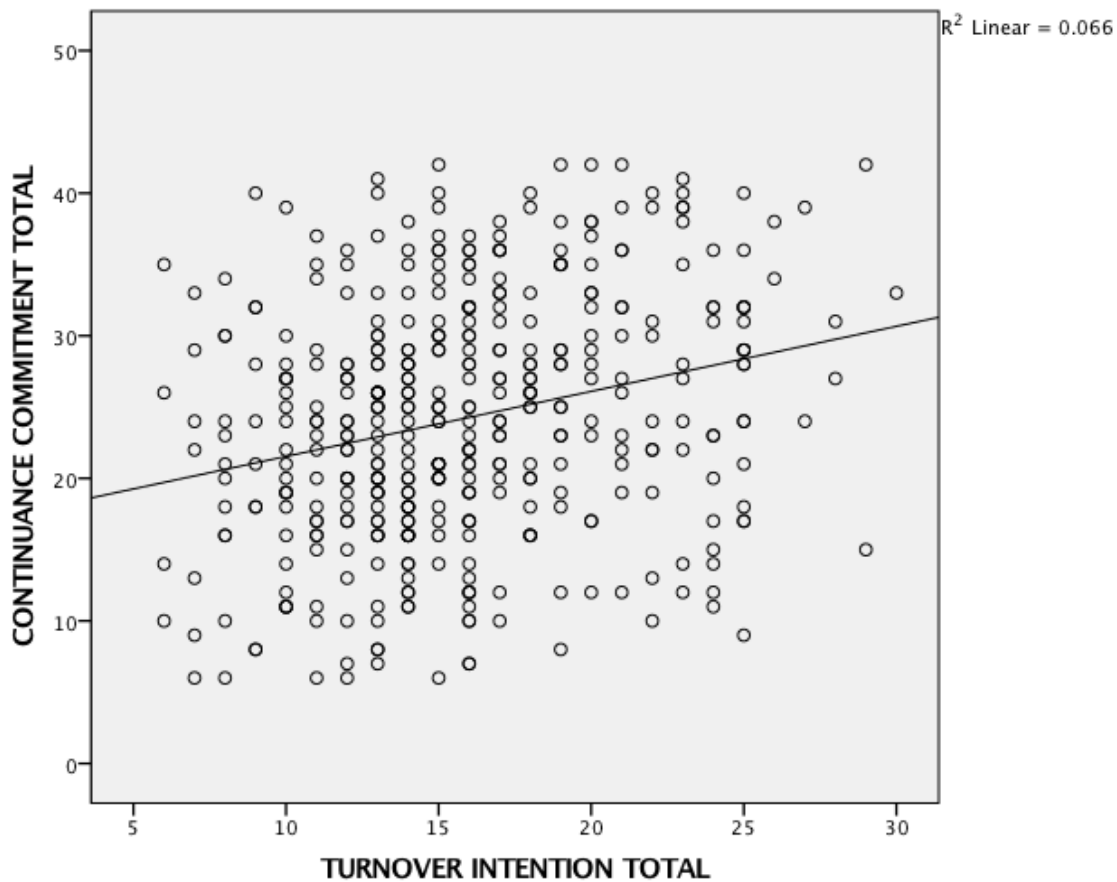


Figure 5. Scatter Plot (Continuance Commitment Mean/Turnover Intention Mean)

Null Hypothesis 1c (Normative Commitment). The third null hypothesis of this study is that there is no statistically significant relationship between normative organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States. Initially a descriptive analysis was conducted to look at the means of the individual questions, as well as the overall mean, on the normative commitment questions. Furthermore, to test the hypothesis Kendall's tau-b was conducted to determine if there is a relationship between normative organizational commitment and turnover intention. Specifically, Kendall's tau-b correlation was used to determine the relationship between normative commitment (independent variable) and turnover intention (dependent variable). Kendall's tau-b is a non-parametric measure of relationships between columns of ranked data. The main assumption of Kendall's tau-b is that the two variables are measured on ordinal or continuous scales (Morgan, Leech, Gloeckner, & Barrett, 2011). This assumption was met while testing this null hypothesis. Likert scales, like the ones used in this study, are ordinal scales (Bishop & Herron, 2015; Norman, 2010).

Null Hypothesis 1c Descriptive Analysis. The descriptive analysis of the questions for normative commitment are shown in Table 16 found in Appendix G. There were 424 complete responses for this set of questions. The highest mean for this set of questions with a 4.41 was for, "I would not leave my organization right now because I have a sense of obligation to the people in it." The lowest mean for this set of questions with a 3.34 was for, "Even if it were to my advantage, I do not feel it would be right to leave my organization now." There was one reverse keyed item in this set of questions and all scores were adjusted during this analysis. The mean for these six questions was 4.24. This average represents the mean for the independent variable, normative commitment. The mean is used in the Kendall tau-b examining the

relationship between the independent variable, normative commitment, and the dependent variable, turnover intention. The mean of all six questions combined was slightly negatively skewed with a skewness statistic of $-.219$ overall, which is visually represented in Figure 6. Based on this range, the responses this data falls within the range of normal distribution. The mode can not be calculated on the mean, however the mode for the individual questions was five for five question and two for the remaining question. The first question had multiple modes, with five being the smallest value of the two.

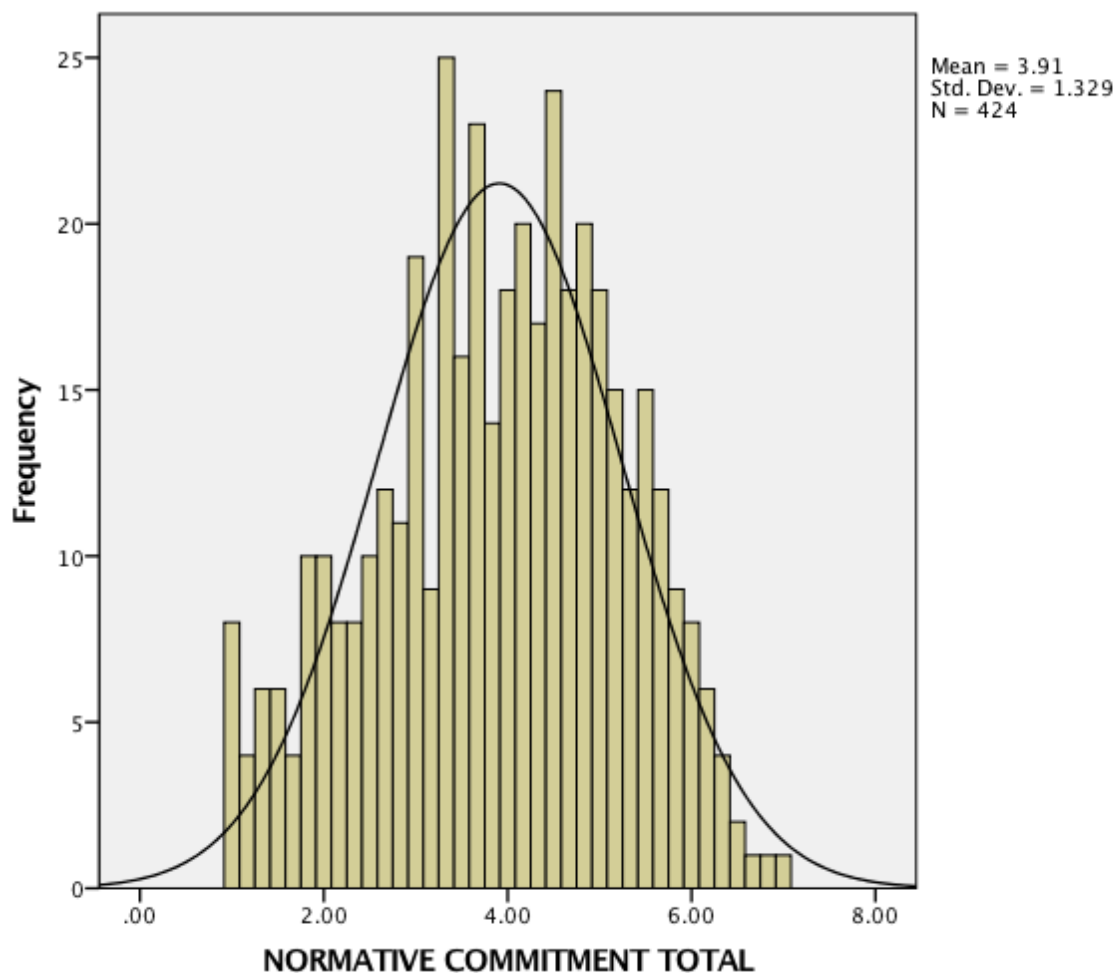


Figure 6. Histogram (Normative Commitment Mean)

Null Hypothesis 1c Inferential Analysis. To investigate the relationship between normative commitment and turnover intention, Kendall's tau-b was conducted. The results of this analysis are found in Table 7 below. The analysis indicated a significant negative association between normative commitment and turnover intention $\text{tau-b}(422) = -.357, p < .001$. This means that the less normative commitment an individual has, the more likely they are to have turnover intention and that the more normative commitment an individual has, the less likely they are to have turnover intention. Based on these results, we must reject the null hypothesis that there is no statistically significant relationship between normative commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

Morgan, Leech, Gloeckner, and Barrett (2011) indicate that statistical significance does not provide information about the strength of the relationship, but effect size does. Effect size is defined as the strength of the relationship between the variables - dependent and independent (Morgan, Leech, Gloeckner & Barrett, 2011). The correlation coefficient for normative commitment and turnover intention is .357 indicating a relationship that is between medium and large according to Morgan et al. (2011). The scatter plot in Figure 9 provides a visual of the relationship between work-life balance and turnover intention. The scatter plot in Figure 7 provides a visual of the moderate negative relationship between normative commitment and turnover intention.

Table 7

Kendall's tau-b (Normative Commitment)

			Normative Commitment Total	Turnover Intention Total
Kendall's tau-b	NORMATIVE COMMITMENT TOTAL	Correlation	1.000	-.357**
		Coefficient		
		Sig. (2-tailed)	.	.000
	TURNOVER INTENTION TOTAL	N	424	424
		Correlation	-.357**	1.000
		Coefficient		
		Sig. (2-tailed)	.000	.
		N	424	424

**. Correlation is significant at the 0.01 level (2-tailed).

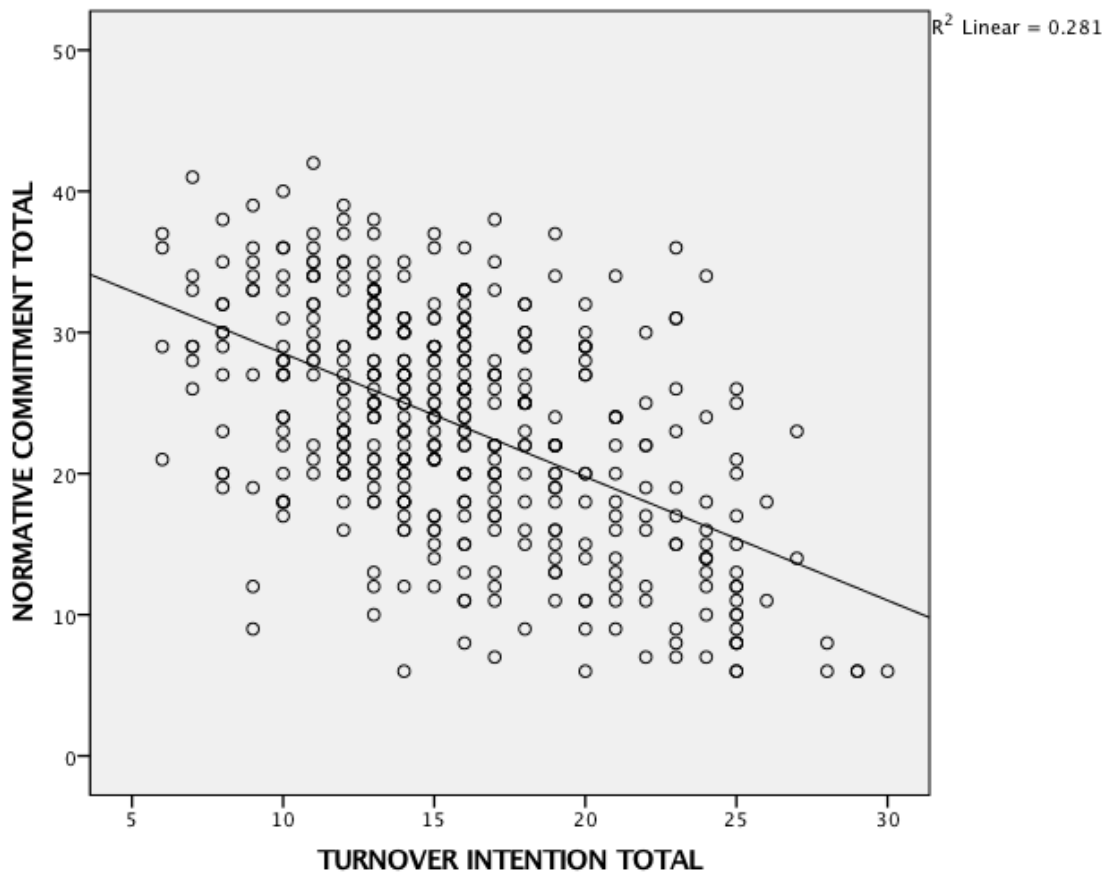


Figure 7. Scatter Plot (Normative Commitment Mean/Turnover Intention Mean)

Null Hypothesis 2

The second main null hypothesis of this study is that there is no statistically significant relationship between work-life balance and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States. Initially a descriptive analysis was conducted to look at the means of the individual questions, as well as the overall mean, on the work-life balance questions. Furthermore, to test the hypothesis Kendall's tau-b was conducted to determine if there is a relationship between work-life balance and turnover intention. Specifically, Kendall's tau-b correlation was used to determine the relationship between work-life balance (independent variable) and turnover intention (dependent variable). Kendall's tau-b is a non-parametric measure of relationships between columns of ranked data. The main assumption of Kendall's tau-b is that the two variables are measured on ordinal or continuous scales (Morgan, Leech, Gloeckner, & Barrett, 2011). This assumption was met while testing this null hypothesis. Likert scales, like the ones used in this study, are ordinal scales (Bishop & Herron, 2015; Norman, 2010).

Null Hypothesis 2 Descriptive Analysis. The descriptive analysis of the questions for work-life balance are shown in Table 17 found in Appendix G. There were 424 complete responses for this set of questions. The highest mean for this set of questions with a 3.24 was for, "I currently have a good balance between time I spend at work and the time I have available for non-work activities." The lowest mean for this set of questions with a 3.00 was for, "I have difficulty balancing my work and non-work activities." There was one reverse keyed item in this set of questions and all scores were adjusted during this analysis. The mean for these four questions was 3.21. This average represents the mean for the independent variable, work-life balance. The mean is used in the Kendall tau-b examining the relationship between the

independent variable, work-life balance, and the dependent variable, turnover intention. The mean of all four questions combined was slightly negatively skewed with a skewness statistic of $-.337$ overall, which is visually represented in Figure 8. Based on this range, the responses this data falls within the range of normal distribution. The mode can not be calculated on the mean, however the mode for the individual questions was four for all four questions.

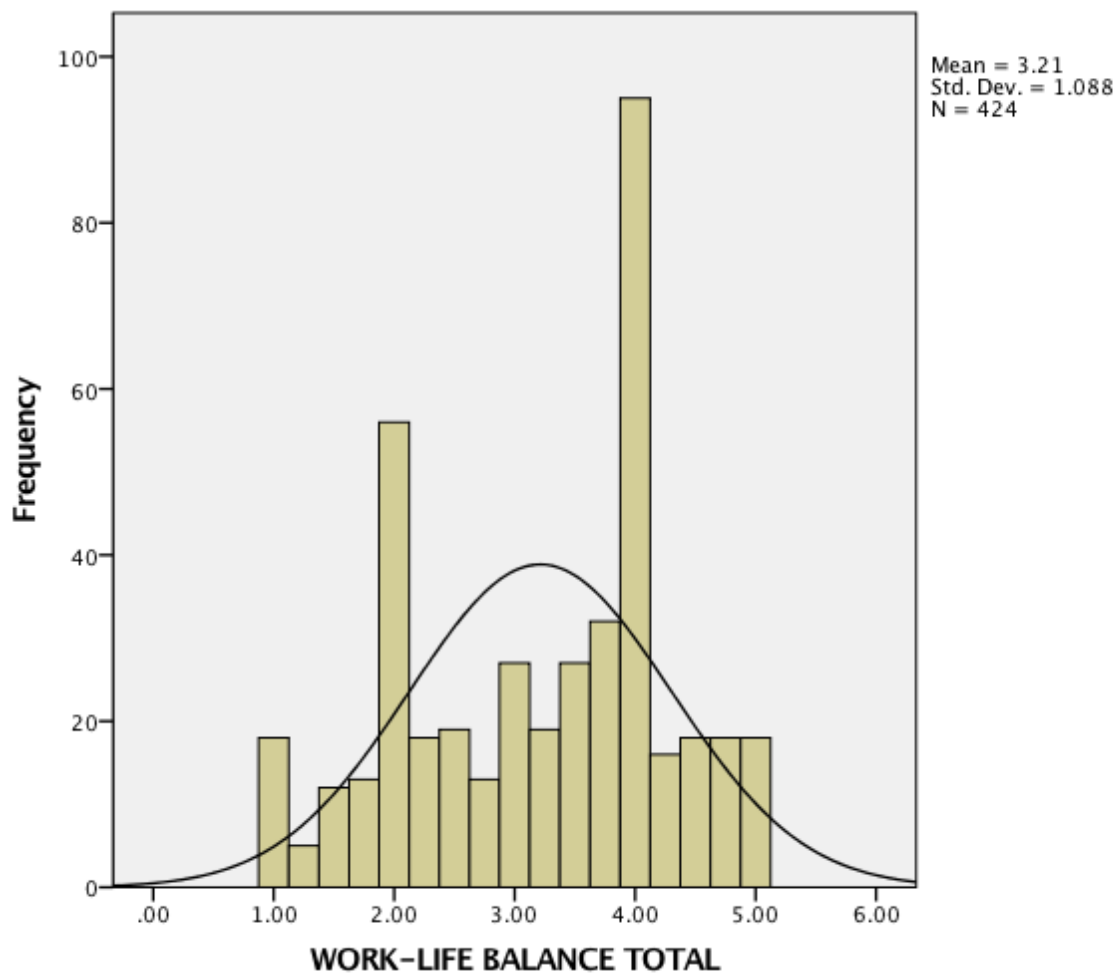


Figure 8. Histogram (Work-Life Balance Mean)

Null Hypothesis 2 Inferential Analysis. To investigate the relationship between work-life balance and turnover intention, Kendall's tau-b was conducted. The results of this analysis are found in Table 8 below. The analysis indicated a statistically significant negative association between work-life balance and turnover intention $\tau\text{-b}(422) = -.264, p < .001$. This means that the less work-life balance an individual has, the more likely they are to have turnover intention and that the more work-life balance an individual has, the less likely they are to have turnover intention. Based on these results, we must reject the null hypothesis that there is no statistically significant relationship between work-life balance and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States.

Morgan, Leech, Gloeckner and Barrett (2011) indicate that statistical significance does not provide information about the strength of the relationship, but effect size does. Effect size is defined as the strength of the relationship between the variables, dependent and independent (Morgan, Leech, Gloeckner & Barrett, 2011). The correlation coefficient for work-life balance and turnover intention is $-.264$ indicating a relationship that is between small and medium according to Morgan, Leech, Gloeckner and Barrett (2011). The scatter plot in Figure 9 provides a visual of the relationship between work-life balance and turnover intention.

Table 8

Kendall's tau-b (Work-Life Balance)

			Work-Life Balance Total	Turnover Intention Total
Kendall's tau-b	WORK-LIFE BALANCE TOTAL	Correlation Coefficient	1.000	-.264**
		Sig. (2-tailed)	.	.000
		N	424	424
	TURNOVER INTENTION TOTAL	Correlation Coefficient	-.264**	1.000
		Sig. (2-tailed)	.000	.
		N	424	424

**. Correlation is significant at the 0.01 level (2-tailed).

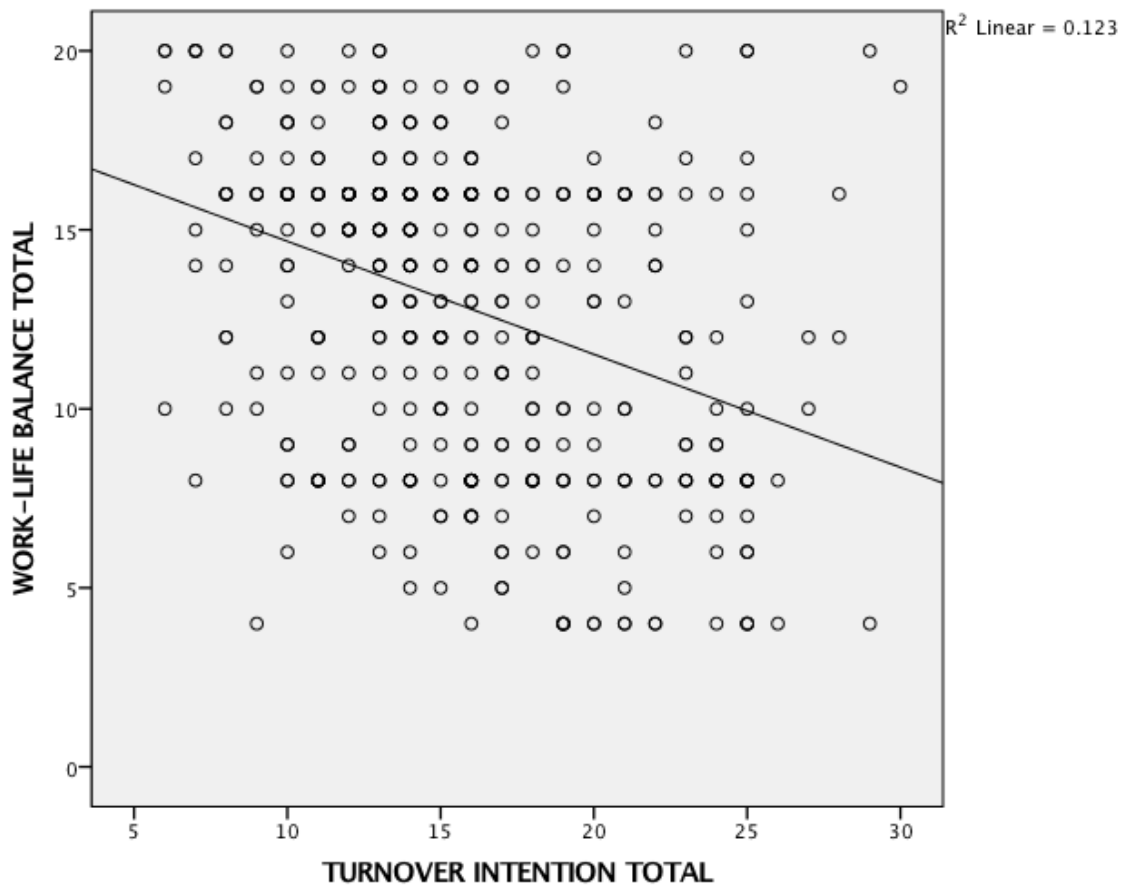


Figure 9. Scatter Plot (Work-Life Balance Mean/Turnover Intention Mean)

Relationship of hypotheses to research questions. As previously discussed, there were two main research questions, with the first question broken up by the three types of organizational commitment (affective, continuance and normative). The second main research question focused on work-life balance. Each research question is presented below. In the following section the results of each of the hypotheses will be addressed as it relates to the applicable research question.

Research Question 1. As described above, the first research question is broken up into three separate research questions. Although they all focus on organizational commitment, the three questions specifically ask about the type of organizational commitment (affective, continuance or normative).

Research Question 1a (Affective Commitment). The first research question was to gain insight into the relationship between affective organizational commitment and turnover intention. As discussed in section one, affective commitment is the emotional attachment the employee has to the organization, specifically the psychological attachment (Allen & Meyer, 1996; Asgharian, Anvari, Ahmad, & Tehrani, 2014; Azeez, Fapohunda, & Jayeoba, 2017; Demirtas & Akogan, 2015; Lam & Liu, 2014; Lu & Gursory, 2016; Ohana & Meyer, 2016; Ross & Ali, 2017; Sothan, Baoku, & Xiang, 2016; Wu & Liu, 2014). The null hypothesis for this research question was that there is no statistically significant relationship between affective organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States. Based on the Kendall tau-b analysis there is a statistically significant negative relationship, indicating that individuals with positive affective commitment have a negative intent to leave the organization. Based on the results of this study, the null hypothesis has been rejected.

Research Question 1b (Continuance Commitment). The second research question was to gain insight into the relationship between continuance organizational commitment and turnover intention. Continuance commitment is associated with the limited number of other employment opportunities, as well as the attractiveness of those opportunities (LaFlamme, Beaudry, & Aguir, 2014). The null hypothesis for this research question was that there is no statistically significant relationship between continuance organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States. Based on the Kendall tau-b analysis there is a statistically significant positive relationship, indicating individuals with a positive continuance commitment have a positive intent to leave the organization. Based on the results of this study, the null hypothesis has been rejected.

Research Question 1c (Normative Commitment). The third research question was to gain insight into the relationship between normative organizational commitment and turnover intention. Normative commitment, is the perceived obligation to stay with an organization (McCallum, Forret, & Wolff, 2014; Meyer & Allen, 1991; Ross & Ali, 2017; Sloan, Buckham, & Lee, 2017; Sothan, Baoku, & Xiang, 2016; Sow, Anthony, & Berete, 2016; Yucel, McMillan, & Richard, 2014). The null hypothesis for this research question was that there is no statistically significant relationship between normative organizational commitment and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States. Based on the Kendall tau-b analysis there is a statistically significant negative relationship, indicating individuals with a statistically significant positive normative commitment have a negative intent to leave the organization. Based on the results of this study, the null hypothesis has been rejected.

Research Question 2. Finally, the second main research question was to gain insight into the relationship between work-life balance and turnover intention. Work-family conflict is the conflict between work roles and family roles, specifically those that are mutually incompatible (Torp, Lysfjord, & Midje, 2018). Work-life balance brings an alignment between these work roles and family roles (Azeez, Fapohunda, & Jayeoba, 2017). The null hypothesis for this research question was that there is no statistically significant relationship between work-life balance and voluntary turnover intention of women faculty in the STEM disciplines working at colleges and universities within the United States. Based on the Kendall tau-b analysis, there is a statistically significant negative relationship, indicating that individuals with a positive work-life balance intend to stay with the organization. Based on the results of this study, the null hypothesis has been rejected.

Summary of the Findings. The findings were revealed through statistically analyzing the data through the lens of the research questions and hypotheses listed in previous sections. All statistical tests and analyses were conducted using IBM SPSS Statistics Version 24. Through analyzing 424 complete surveys from women who teach a STEM discipline at a college or university within the United States, insight was gained into the organizational commitment, work-life balance and turnover intention of this population. The survey data were useful in answering the research questions. From the findings summarized in Table 9 below, this study concluded that there is a statistically significant relationship between affective commitment, continuance commitment, normative commitment and work life balance to turnover intention, however the relationship is weak (continuance commitment and work-life balance) to moderate (normative commitment and affective commitment).

The direction of the relationship may provide some insight to organizational leaders. The findings indicate that affective commitment, normative commitment and work-life balance have a negative relationship with turnover intention. It can be concluded from this data that the more affective commitment, normative commitment and work-life balance an individual has, the less likely they are to seek other opportunities. Continuance commitment, on the other hand, has a positive relationship with turnover intention. This can be interpreted to mean that the more continuance commitment an individual has to their organization, the more likely they will seek out other opportunities. The strongest negative relationship is with affective commitment, indicating this variable has the most impact on turnover intention. This finding is consistent with research that indicates that affective commitment more significantly correlates with the intention to leave an organization than continuance and normative commitment (Kloutsiniotis & Mihail, 2017).

Table 9

Kendall's tau-b Summary

Variable	Kendall tau-b Relationship	Statistically Significant	Kendall tau-b Direction
Affective Commitment	.488	Yes	Negative
Continuance Commitment	.187	Yes	Positive
Normative Commitment	.357	Yes	Negative
Work-Life Balance	.182	Yes	Negative

The results of this study are supported by the theoretical framework presented in section one. The three theories that this research is based on is the Social Exchange Theory, Mobley's Job Satisfaction Model and Meyer and Allen's Three Component Model. The Social Exchange Theory weighs the benefits and costs of staying with the organization. This theory would apply to those individuals that may be experiencing continuance commitment challenges in their organizations. Although there was not a strong relationship between continuance commitment and turnover intention, the relationship was still statistically significant and should be considered when establishing human resource practices. Mobley's Job Satisfaction Model describes the thought process of an employee as they consider other opportunities. This theory would apply to all of the variables, however since affective commitment has the strongest relationship with turnover intention, it would benefit organizations to look at ways to increase affective commitment in their organization. Finally, the last theory discussed in section one was Meyer and Allen's Three-Component Model of Organizational Commitment. This theory provided three of the independent variables for this study. Understanding the relationship (strength and direction) of each of these independent variables may help organizations prioritize time and resources when establishing human resource policies.

The findings align with other studies on the same subject. Previous research studies have associated increased affective commitment with reduced turnover (Kloutsiniotis & Mihail, 2017; Neelam et al., 2015). Kloutsiniotis and Mihail (2017) as well as Meyer and Allen (1997) indicate that decreased affective commitment more significantly correlates with the intention to leave an organization than the other two types of organizational commitment. Generally speaking, Luchak and Gellatly (2007) surveyed randomly selected unionized utility workers, nurses, and food service employees. The study found that increasing organizational commitment

reduced intentions to leave the organization (Luchak & Gellatly, 2007). Gamble and Tian (2015) studied 1,017 retail employees in China regarding organization commitment dimensions (affective, continuance and normative). The results of this study showed affective and normative commitment was negatively related to turnover intentions; whereas continuance commitment was positively related to turnover intention (Gamble & Tian, 2015).

Meyer et al. (2002) referenced that since 1982 over 100 published studies addressed continuance commitment and its relationship to absenteeism, turnover, job satisfaction, performance, and career development. Joung, Goh, Huffman, Yuan, and Surles (2015) conducted a quantitative study of the organizational commitment of 447 food service employees across the United States. The authors indicated that continuance commitment did not have an impact on turnover intention (Joung et al., 2015), which contradicts the findings of this study. Gellatly et al. (2014) found that employees who experience continuance commitment with their employer have difficulty leaving the organization.

Of the three components, normative commitment received the least amount of attention in research and was the last element added to the organizational commitment model (Vandenberghe, Mignonac, & Manville, 2015). McCallum, Forret and Wolff (2014) indicated in their quantitative correlational study that examined the internal and external networking behaviors of 335 managers in the healthcare system, that normative commitment related to the employees feeling a sense of responsibility to stay with the organizations. Other studies have also indicated that normative commitment is negatively correlated with turnover intention (Gamble & Tian, 2015).

Finally, the work-life balance results of this study were consistent with the SWE Retention Study, women are more likely than men to choose to leave STEM fields due to work-

life integration priorities (Frehill, 2009d). A study conducted in the field of education is also aligned with the results of this study. Akram, Malik, Nadeem, and Atta (2014) investigated work-family enrichment as predictors of work outcomes. These work outcomes included affective commitment and turnover intentions (Akram et al., 2014). In the teaching profession, 225 individual from private and public colleges were selected (Akram et al., 2014). The results showed that work-family enrichment was a negative predictor of turnover intention, but a positive predictor of affective commitment (Akram et al., 2014).

Applications to Professional Practice

The findings of this research are applicable to the field of human resources and business. The purpose of this study was to examine the relationship between organizational commitment (affective, continuance and normative), work-life balance and turnover intention. The specific research questions addressed how the different types of organizational commitment (affective, continuance and normative) and work-life balance are related to turnover intention. This research was designed to help organizations, specifically colleges and universities within the United States, decrease the rate of voluntary turnover with this specific population (women faculty who teach in the STEM disciplines), and perhaps expand the benefits of this understanding to other populations. This section contains the application of this research study to human resource policies and explains how these findings are relevant to improve organizational commitment, work-life balance and human resource strategies.

The first research question (broken up into three sub-questions) were to gain insight into the relationship between organizational commitment (affective, continuance and normative) to turnover intention. Although all three types of organizational commitment have a statistically significant relationship with turnover intention, affective commitment had the strongest

relationship. The results of this study are relevant to improved human resource practices that may impact an individual's organizational commitment and work-life balance. With human resource departments and businesses having limited resources, this research indicates that businesses and organization should focus on human resource policies and strategies that increase organizational commitment. If additional resources are available, human resource policies and strategies that enhance continuance and normative commitment can be addressed.

The second research question was to gain insight into the relationship between work-life balance and turnover intention. There was a statistically significant relationship between work-life balance and turnover intention. Between the two main independent variables, work-life balance had the weakest relationship with turnover intention. As indicated in the paragraph above, as resources permit human resource policies and strategies should be considered to increase work-life balance. By applying resources to human resource policies and strategies that make the most impact, businesses and organizations can decrease turnover and ultimate reduce the monetary and non-monetary impacts of replacing personnel.

Biblically, the research supported the scripture as it relates to organizational commitment and work-life balance. Elangovan, Pinder, and McClean (2010) agreed that spirituality is related to workplace outcomes such as organizational commitment. Ecclesiastes 3:13 states, "That each person finds pleasure in his work as this is a gift from God." Neubert and Halbesleben (2015) stated that spiritual calling was an important component of organizational commitment. Additionally, Van Duzer (2010) described business as the opportunity to provide creative and meaningful work. Although Van Duzer (2010) did not specifically discuss organizational commitment, it has been established by Jiang and Johnson (2018) that meaningful work is

positively associated with positive work attitudes such as organizational commitment, specifically affective commitment.

Additionally, according to Jiang and Johnson (2018), the relationship between meaningful work and affective commitment was stronger for those that placed less importance on work, indicating that work-life balance was also an important factor. The Bible also indirectly highlights work-life balance. Colossians 3:17 and 3:23-24 both discuss work, specifically working in the name of the Lord and do it with all of your heart. Between two verses that discuss work are four verses that talk specifically about family relationships. The results of this research, as well as the scripture, provides opportunities and guidance for organizational leaders to enhance the relationship between the organization and the employee through targeted human resource practices that focus on providing opportunities for meaningful work, particularly to those individuals that place less importance on work and more importance on other aspects of their lives such as family. Although the study specifically focused on women who teach the STEM disciplines at colleges or universities within the United States, the relationships discovered in this study may be helpful to other organizations and or other populations that experience similar turnover challenges. Specific recommendations for human resource policies and business practices are found in the next section.

Recommendations for Action

The results of this study indicated that there is a statistically significant relationship between the three types of organizational commitment (affective, continuance and normative), work-life balance and turnover intention. The study Organizational commitment (affective, continuance and normative), work-life balance and turnover intention are complex, yet important issues for today's organizations. The results of this study emphasize their complexity,

particularly with the three different types of organizational commitment. Based on the results of this study, some recommendations for action are in the following paragraphs.

The first recommendation for action is focused on affective organizational commitment. The results of this study indicated a statistically significant negative relationship between affective commitment and turnover intention. Research has shown that affective commitment more significantly correlates with the intention to leave an organization than continuance and normative commitment (Kloutsiniotis & Mihail, 2017). The results of this study mirrored the results of Kloutsiniotis and Mihail (2017) by showing that affective commitment had a stronger relationship with turnover intention than the other two types of organizational commitment or work-life balance. Organizations should utilize resources to gain insight to what human resource policies most impact affective organizational commitment, as this may have the most impact to the organization. When applying resources to human resource strategies and policies, those that increase affective commitment should take priority as this may have the most impact on the turnover intention of the employees. One specific human resource strategy that may impact affective organizational commitment is a robust training program, specifically one that orients the individual to the organization. Human resource managers, on behalf of their organizations, could design a program that provides an overview of the individual's position, as well as the overall purpose and culture of the organization.

The second recommendation for action is focused on continuance commitment. The results of this study found a statistically significant relationship between continuance commitment and turnover intention. Continuance commitment had a statistically significant relationship with turnover intention. According to this research, the relationship between continuance commitment and turnover intention was positive indicating that the more

continuance commitment an individual has the more likely they are to leave the organization. The costs associated with leaving an organization may include opportunities available in other organizations or the current pay. Specifically, organizations could look at their pay levels to determine if they are offering competitive pay for the position and type of organization, especially compared to what is offered in the geographic vicinity of the organization.

The third recommendation for action is focused on normative organizational commitment. The results of this study found a statistically significant relationship between normative commitment and turnover intention. Normative commitment had the second strongest relationship with turnover intention (after affective commitment). Organizations must ensure that they clearly state the expectations of the employees and that employees clearly understand the expectations of the employer to ensure that psychological contracts are not broken. Additionally, ensure that policies remain stable and that there is effective communication when policies are changing may ensure that this psychological contract remains in tact. Transparency is key to maintaining normative commitment. By providing transparency, employees may have more trust in the organization, ultimately maintaining the psychological contract with the organization.

The fourth recommendation for action is focused on work-life balance. The results of this study found a statically significant relationship between work-life balance and turnover intention. Organizations should focus on creating environments that focus on work-life balance opportunities and organizational commitment factors. Human resources should utilize non-monetary benefits such as telework, flexible work schedules, etc. Additionally, the vacation/sick leave policy should be reviewed to ensure that the leave policy does not unintentionally benefit

one gender over the other. One example would be to look at the maternity/paternity leave policy of the organization.

The recommendations for action are numerous, and many depend on the type of organization. Four suggestions were listed above to help an organization decrease turnover based on affective commitment, continuance commitment, normative commitment and work-life balance, but this list is not all-inclusive. Organizations and employees alike share in the obligation to communicate expectations and needs in order for the relationship to be fully successful in reducing turnover.

Recommendations for Further Study

The results of this study indicated that there is a statistically significant relationship between the three types of organizational commitment (affective, continuance and normative), work-life balance and turnover intention. Although this research touched upon this relationship, many factors could contribute to these relationships that were addressed in this study. Some of these recommendations stemmed from e-mails received by the researcher during the data collection process. The researcher's e-mail was available to all participants, as a result two e-mails were received regarding the survey. One e-mail received indicated that the individual did not complete the survey because the work-life balance questions did not accurately reflect their current situation. The individual, who had a one-year old child, preferred to work more and complete household chores such as cooking and cleaning less. Another participant expressed concern about the timing of the survey. The participant indicated that the responses to the survey would be different based on the academic hiring cycle, especially where alternate job options were concerned. There are numerous opportunities for further research; the researcher suggests three particular opportunities for further study. These three recommendations are listed below

The first recommendation for further study is to expand the design of the study. This study was limited to the quantitative design to examine the relationship between organizational commitment (affective, continuance and normative), work-life balance and turnover intention. A mixed-methods or qualitative design may provide more insight to some of the factor that impact the level and type of organizational commitment, the specific experiences that impact work-life balance, and explore other reasons that individuals may consider leaving the organization. In addition, a consideration in the design of the study is the timing. As indicated above by one of the participants, the timing of the study may affect the responses to the survey, ultimately affecting the results.

The second recommendation for further study is to expand or limit the population. This study focused on a very specific population, women faculty who teach in the STEM disciplines at colleges and universities within the United States. Recommendations for future studies include expanding the study to different career fields, yet still focusing on women in the workforce. Regarding this particular population, this study also did not ask the participants to identify if they were part-time or full-time, marital status, number of children, and other factors that may impact the outcome of this study. Factors such as position level, educational level, age, marital status, number of children, ethnicity and income range could be inclusion factors of the study. The results of the study may change depending on these factors. For example, a married participant may have different views on work-life balance than a single participant or a black female may have different responses to the commitment questionnaires than a white female. The possibilities for inclusion and exclusion factors for this type of research study are almost endless. All of the above mentioned factors might have a significant impact on the results of this study both for this population, as well as for other populations where this study is conducted.

Finally, the third recommendation for further study is to focus on human resource practices and their impact on organizational commitment, work-life balance and turnover intention. By focusing on specific human resource practices and policies, researchers can determine which practices and policies have the most impact allowing organizations to focus their limited resources on those that make the most impact. There are numerous other strategies to be considered that include, but are not limited to flexible work scheduling, promotion opportunities and parental leave.

Summary and Study Conclusions

Organizational commitment, work-life balance and turnover intentions are concepts that are of interest to organizational leaders and human resource professionals. According to research, organizational commitment is a motivational construct that indicates how committed an employee is to an organization and is considered a pre-cursor to employee turnover (Allen & Meyer, 1996; Sloan, Buckham, & Lee, 2017). Work-life balance was also a key part of this study. Women, in particular, make decisions that ultimately leave them in a dilemma – devotion to career or devotion to family (Simard et al., 2008). Women report higher levels of work-life conflict based on family expectations (Eby et al., 2005). This study served to examine the relationship between organizational commitment (affective, continuance and normative), work-life balance and turnover intention. The survey was conducted online and a thorough analysis of the data collected on the surveys. The study was conducted using participants from throughout the United States that were recruited through the Survey Monkey Audience and through social media such as Facebook, LinkedIn and Twitter. Five hundred and fifty eight individuals voluntarily participated in the study after reading the informed consent. These participants answered an online survey hosted by Survey Monkey that included qualifying questions,

organizational commitment questions (affective, continuance and normative), work-life balance questions and turnover intention questions. Of the 558 individuals that started the survey, 424 participants provided complete responses. One of the strongest conclusions from this study was shown in the direction of relationship between the individual independent variables and the dependent variable.

There is a statistically significant relationship between affective commitment, continuance commitment, normative commitment and work life balance to turnover intention, however the relationship is weak (continuance commitment and work-life balance) to moderate (normative commitment and affective commitment). The direction of the relationship may provide some insight to organizational leaders regarding human resource practices and strategies. The findings indicate that affective commitment, normative commitment and work-life balance have a negative relationship. It can be concluded from this data that the more affective commitment, normative commitment and work-life balance an individual has, the less likely they are to seek other opportunities. Continuance commitment, on the other hand, has a positive relationship with turnover intention. This can be interpreted to mean that the more continuance commitment an individual has to their organization, the more likely they may seek out other opportunities. The strongest negative relationship is with affective commitment, indicating this variable has the most impact on turnover intention.

This research study advances the human resources body of knowledge. The study provides insight to the organizational commitment, work-life balance and turnover intention of women faculty in the STEM disciplines at colleges and universities within the United States. Although the study answered research questions and tested five hypotheses directly related to these research questions, the study also provides a reference point for applying the study findings

to organizations and provides a starting point for additional research for this and other populations.

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APPENDICES

Appendix A: Survey Questions

Part 1: Elimination Questions

1. Are you over 18 years of age?
2. Are you a woman?
3. Are you a Faculty employee of a college or university within the United States?
4. Do you teach a STEM discipline at the college or university?

Part 2: Demographic Questions

5. How long have you been in your current position (Months/Years)?
6. How long have you been with your current organization (Months/Years)?
7. What is your age?
8. Is this your first career (Yes/No)? If No, what career is this for you (Second, Third)?

**Part 3: Format for the 24-item Organizational Commitment Questionnaire (OCQ)
Revision with Specific Commitment Scales**

(Meyer & Allen, 2004)

Likert Scale (1-7)

Affective Commitment Scale Items

9. I would be very happy to spend the rest of my career with this organization.
10. I really feel as if this organization's problems are my own.
11. I do not feel a strong sense of "belonging" to my organization. (R)
12. I do not feel "emotionally attached" to this organization (R)
13. I do not feel like "part of the family" at my organization (R)
14. The organization has a great deal of personal meaning to me.

Continuance Commitment Scale Items

15. Right now, staying with my organization is a matter of necessity as much as desire.
16. It would be very hard for me to leave my organization right now, even if I wanted to.
17. Too much of my life would be disrupted if I decided I wanted to leave my organization now.
18. I feel that I have too few options to consider leaving this organization.
19. If I had not already put so much of myself into this organization, I might consider working elsewhere.
20. One of the negative consequences of leaving this organization would be the scarcity of available alternatives.

Normative Commitment Scale Items

21. I do not feel any obligation to remain with my current employer. (R)
22. Even if it were to my advantage, I do not feel it would be right to leave my organization now.
23. I would feel guilty if I left my organization now.
24. This organization deserves my loyalty.
25. I would not leave my organization right now because I have a sense of obligation to the people in it
26. I owe a great deal to my organization.

Part 4: Work-Life Balance Questionnaire
(Brough, Timms, O'Driscoll, Kalliath, Siu, Sit & Lo, 2014)
Likert Scale (1-5)

- 27. I currently have a good balance between time I spend at work and the time I have available for non-work activities.
- 28. I have difficulty balancing my work and non-work activities. (R)
- 29. I feel that the balance between my work demands and non-work activities is currently about right.
- 30. Overall, I believe that my work and non-work life are balanced.

Part 5: Turnover Intention Questionnaire
(Roodt, 2004)

This portion of the questionnaire measures turnover intention and uses a 5-point Likert Scale. The qualifiers for this scale are listed per question below.

- 31. How often have you considered leaving your job? (1 – Never; 5 – Always)
- 32. How satisfying is your job in fulfilling your personal needs? (1 – Very Satisfying; 5 – Totally Dissatisfying)
- 33. How often are you frustrated when not given the opportunity at work to achieve your personal work-related goals? (1 – Never; 5 – Always)
- 34. How often do you dream about getting another job that will better suit your personal needs? (1 – Never; 5 Always)
- 35. How likely are you to accept another job at the same compensation level should it be offered to you? (1 – Highly Unlikely; 5- Highly Likely)
- 36. How often do you look forward to another day at work? (1 – Always; 5 Never)

Appendix B: Social Media Invitation

As a graduate student in the School of Business at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The purpose of my research is to examine the relationship between organizational commitment (affective, continuance and normative), work-life balance and voluntary turnover intention of women faculty in the STEM disciplines. I am writing to invite you to participate in this study.

If you are a faculty member in the STEM discipline in a college or university and are willing to participate, you will be asked to provide demographic information and complete a survey consisting of 35 questions. It should take no longer than 20 minutes for you to complete the survey. Your participation will be completely anonymous, and no personal, identifying information will be required.

To participate, go to <https://www.surveymonkey.com/r/KBS9K2H>. Consent will be implied by completing the consent form and completing the survey.

Sincerely,
Sherry L. Mathews, MBA

Appendix C: Consent Form

CONSENT FORM

A Quantitative Examination of the Relationship Between Organizational Commitment, Work-Life Balance and Voluntary Turnover Intention of Women Faculty in the STEM Disciplines at colleges and universities within the United States

Sherry L. Mathews
Liberty University
School of Business

You are invited to be in a research study on the relationship between organizational commitment, work-life balance and voluntary turnover intention of Women Faculty in the STEM Disciplines. You were selected as a possible participant because you are a member of the Survey Monkey Education Audience. Please read this form and ask any questions you may have before agreeing to be in the study.

Sherry L. Mathews, a doctoral candidate in the School of Business at Liberty University, is conducting this study.

Background Information: The purpose of this study is to examine the relationship between organizational commitment (affective, continuance and normative), work-life balance and voluntary turnover intention of women faculty in the STEM disciplines at colleges and universities within the United States. Participants will complete an online survey assessing organizational commitment, work-life balance and voluntary turnover intention. The data will be analyzed to evaluate the relationship between organizational commitment (affective, continuance and normative), work-life balance and voluntary turnover intention. The goal of this study is to examine the relationship between organizational commitment (affective, continuance and normative), work-life balance and voluntary turnover intention.

Procedures: If you agree to be in this study, I would ask you to do the following things:

1. Take an anonymous, online survey that will take approximately 20 minutes.

Risks: The risks involved in this study are minimal to none.

Benefits: Participants should not expect to receive a direct benefit from taking part in this survey.

Benefits to society include potential implementation of human resource strategies and practices that might improve the well being of employees if the variables are found to be positively correlated.

Compensation: Participants will not be compensated for participating in this study.

Confidentiality: The questionnaires will be completed anonymously using Survey Monkey. The researcher will not know the identity of the participants. Research records will be stored securely and only the researcher will have access to the records.

- Surveys will be completed online and names will not be included in the survey information collected. Potentially identifying demographic information of individual participants will not be disclosed.
- Data will be stored on a password-protected computer for three years after the completion of the study.
- The researcher and dissertation committee will have access to the data.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or your current organization. If you decide to participate, you are free to not answer any question or withdraw at any time prior to submitting the survey without affecting those relationships.

How to Withdraw from the Study: If you choose to withdraw from the study, please exit the survey and close your internet browser. Your responses will not be recorded or included in the study.

Contacts and Questions: The researcher conducting this study is Sherry L. Mathews. If you have questions, you are encouraged to contact the researcher at 325-829-9483 or smathews@liberty.edu. You may also contact the researcher's faculty advisor, Dr. Emily Knowles at ecriggins@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researchers, you are encouraged to contact the Institutional Review Board, 1971 University Blvd, Green Hall Ste 1887, Lynchburg, VA 24515 or e-mail at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information for your records.

Statement of Consent: I have read and understood the above information. If I have asked questions, I have received answers. I consent to participate in the study.

Please click on the button on the first page of the Survey Monkey survey to confirm your willingness to participate in the study.

Appendix D: SPSS Output

Table 10

<i>Age in Years</i>		
What is your age (in years)?		
N	Valid	424
	Missing	0
Mean		45.17
Median		44.00
Mode		47
Minimum		23
Maximum		73
Standard Deviation		11.296

Table 11

<i>Time in Position/Organization</i>			
		How long have you been in your current position (Years)?	How long have you been with your current organization?
N	Valid	424	424
	Missing	0	0
Mean		7.4797	9.2395
Median		4.4150	6.8750
Mode		1.00	1.00
Minimum		.08	.08
Maximum		38.08	40.00
Standard		7.96367	8.41036
Deviation			

Table 12

<i>First Career</i>		
Is this your first career?		
N	Valid	424
	Missing	0
Mean		1.53
Median		2.00
Mode		2
Minimum		1
Maximum		2

Table 13

<i>What Career</i>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	200	47.2	47.2	47.2
	2	151	35.6	35.6	82.8
	3	55	13.0	13.0	95.8
	4	13	3.1	3.1	98.8
	5	5	1.2	1.2	100.0
Total		424	100.0	100.0	

Table 14

Descriptive Statistics (Affective Commitment Questions)

	I would be very happy to spend the rest of my career with this organization. (AC)	I really feel as if this organization's problems are my own. (AC)	I do not feel a strong sense of "belonging" to my organization. (AC-R)	I do not feel "emotionally attached" to this organization. (AC-R)	I do not feel like "part of the family" at my organization. (AC-R)	The organization has a great deal of personal meaning to me. (AC)
N Valid	424	424	424	424	424	424
Missing	0	0	0	0	0	0
Mean	4.99	4.19	4.60	4.80	4.58	4.89
Median	5.00	4.00	5.00	5.00	5.00	5.00
Mode	6	5	6	6	6	6
Minimum	1	1	1	1	1	1
Maximum	7	7	7	7	7	7

Table 15

Descriptive Statistics (Continuance Commitment Questions)

	Right now, staying with my organization is a matter of necessity as much as desire. (CC)	It would be very hard for me to leave my organization right now, even if I wanted to. (CC)	Too much of my life would be disrupted if I decided I wanted to leave my organization now. (CC)	I feel that I would have too few options to consider leaving this organization. (CC)	If I had not already put so much of myself into this organization, I might consider working elsewhere. (CC)	One of the negative consequences of leaving this organization would be the scarcity of available alternatives. (CC)
N Valid	424	424	424	424	424	424
Missing	0	0	0	0	0	0
Mean	4.57	4.12	4.42	3.79	3.20	4.08
Median	5.00	4.00	5.00	3.00	3.00	4.00
Mode	6	2	6	2	2	2
Minimum	1	1	1	1	1	1
Maximum	7	7	7	7	7	7

Table 16

Descriptive Statistics (Normative Commitment Questions)

		I do not feel any obligation to remain with the current employer. (NC-R)	Even if it were to my advantage, I do not feel it would be right to leave my organization now. (NC)	I would feel guilty if I left my organization now. (NC)	This organization deserves my loyalty. (NC)	I would not leave my organization right now because I have a sense of obligation to the people in it. (NC)	I owe a great deal to my organization. (NC)
N	Valid	424	424	424	424	424	424
	Missing	0	0	0	0	0	0
Mean		4.07	3.34	3.80	3.91	4.41	3.93
Median		4.00	3.00	4.00	4.00	5.00	4.00
Mode		5 ^a	2	5	5	5	5
Minimum		1	1	1	1	1	1
Maximum		7	7	7	7	7	7

a. Multiple modes exist. The smallest value is shown

Table 17

Descriptive Statistics (Work-Life Balance Questions)

		I currently have a good balance between time I spend at work and the time I have available for non-work activities. (WLB)	I have difficulty balancing my work and non-work activities. (WLB-R)	I feel that the balance between my work demands and non-work activities is currently about right. (WLB)	Overall, I believe that my work and non-work life are balanced. (WLB)
N	Valid	424	424	424	424
	Missing	0	0	0	0
Mean		3.42	3.00	3.20	3.25
Median		4.00	3.00	4.00	4.00
Mode		4	4	4	4
Minimum		1	1	1	1
Maximum		5	5	5	5

Table 18

Descriptive Statistics (Turnover Intention Questions)

		How often have you considered leaving your job? (TI)	How satisfying is your job in fulfilling your personal needs? (TI)	How often are your frustrated when not given the opportunity at work to achieve your personal work- related goals? (TI)	How often do you dream about getting another job that will better suit your personal needs? (TI)	How likely are you to accept another job at the same compensation level should it be offered to you? (TI)	How often do you look forward to another day at work? (TI)
N	Valid	424	424	424	424	424	424
	Missing	0	0	0	0	0	0
Mean		2.76	2.25	2.82	2.85	2.76	2.35
Median		3.00	2.00	3.00	3.00	3.00	2.00
Mode		3	2	2	3	2	2
Minimum		1	1	1	1	1	1
Maximum		5	5	5	5	5	5