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Predictors of Job Satisfaction Among Telecommuters

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2016

Abstract

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by

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MBA, Keller Graduate School, 2004

BS, Letourneau University, 2002

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

With millions of people telecommuting each day, business leaders need to understand the factors contributing to job satisfaction among telecommuters. Drawing from the theory of purposeful work behavior, the purpose of this correlational study was to provide decision makers with information about the factors associated with job satisfaction among telecommuters. The research question addressed the relationship between gender, age, and level of telecommuting and job satisfaction. Using multiple linear regression analysis of 65 telecommuter survey respondents, the results ($F(3,61) = 2.4$, $p > .05$) indicated that no statistical significant relationships were found between job satisfaction and the predictor variables; however, the results indicated that job satisfaction among telecommuters was high, regardless of demographic variables. Additionally, a correlational analysis determined that a correlation exists between age and job satisfaction as well as age and level of telecommuting. Knowing that job satisfaction is ubiquitous among telecommuters and that correlations exist around age contributes to the knowledge base on the impacts of telecommuting. Business leaders could benefit from these findings when implementing telecommuting policies or procedures. Implications for social change are that satisfaction may increase when employees have the option to telecommute, which can affect business profitability. In addition, fewer people commuting to work decreases emissions and improves the environment.

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Dedication

This is dedicated to my sons Douglas, Myles, and Daniel. The world you will work in will no doubt be different from mine, but I hope you take time to explore it and learn all that you can. I imagine that one day you will be living and working within the boundaries of this study. Know that I love you, and all I do is for you!

To my husband Doug, without you this would have never been possible. Your support and encouragement have kept me going, and I will forever be indebted to you for seeing me through. To my mother, Dr. Glenda Overstreet, did you ever imagine that your beautiful baby girl would one day call you Dr. Mom and you call her Dr. Shawn? Well today is that day!

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Additionally, I would like to thank Dr. Aarthi Reddy. Aarthi, even though you were pregnant with twins, you still took time to talk me through regression analysis and provided your insights and experience on dissertations. For that, I am truly grateful.

Thank you all!

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Section 1: Foundation of the Study

In the United States, millions of people work in alternative locations outside of corporate offices (Telework Research Network, 2012). This type of work has many different names, such as telecommuting, mobile officing, teleworking, working from home, working at home, alternate work location, and flexible work arrangements. Regardless of the term used, each indicates that an employee works from a location other than the employer's business office (Aboelmaged & El Subbaugh, 2012).

Background of the Problem

According to Madlock (2013), nearly 20 million employees telecommute in the United States, and this number could continue to increase each year by more than 20%. The exact number of telecommuters is difficult to determine because of the many factors and types of workers, including self-employed, stay-at-home moms, and contractors, and the number of telecommuters could range from 2.9 million to 33.7 million (Calvasina, Calvasina, & Calvasina, 2012).

Telecommuting is a work arrangement in which employees do not commute to a central place of work (Aboelmaged & El Subbaugh, 2012). Telecommuting changes the corporate culture from an environment where employees go into the office and everyone works together to a virtual environment. Not only is the corporate culture changed, but it also affects business operations, human resources, and many other elements of how a company runs. The Society for Human Resources Management Online Staff (2013) found that 58% of human resources professionals believe that telecommuting increases employee satisfaction and has a profound effect on workplace recruiting and retention.

Additionally, an association exists between business performance outcomes and employee performance and satisfaction (Latif et al., 2013). Thus, business leaders looking to ensure profitability and organizational performance need to understand all impacts to their organization and the ways telecommuting can benefit their organization.

Problem Statement

Telecommuting can have a positive influence on organizational outcomes such as performance, productivity, retention, and commitment (Martin & MacDonnell, 2012). Seventy-three percent of telecommuting government employees reported high levels of job satisfaction in 2012 (U.S. Office of Personnel Management, 2013). Despite the benefits, many business leaders are reluctant to allow telecommuting (Stout, Awad, & Guzmán, 2013). The general business problem was that some business leaders are unwilling to allow telecommuting. The specific business problem was that some business leaders lack an understanding of the relationship between telecommuting, demographic factors, and job satisfaction.

Purpose Statement

The purpose of this quantitative correlation study was to examine the relationship between the level of telecommuting, gender, age, and employee job satisfaction. The predictor variables were the level of telecommuting measured in days per week, gender, and age. The dependent variable was employee job satisfaction. The targeted population was telecommuters in the United States. The implications for positive social change included the potential to understand the correlates of employee job satisfaction, thus, increasing the ability to maintain corporate advantages and profitability and increases in

telecommuting can have an impact on the environment (Global e-Sustainability Initiative, 2012).

Nature of the Study

The methodology for this study was quantitative. In this study, I examined the relationship between multiple variables; thus, a quantitative correlational study was the appropriate method because the focus of quantitative research is examining the relationship between multiple variables (Bryman, 2012).

The intent of this study was to determine the relationship between the predictor and the dependent variables; thus, I chose a correlational design. The focus of a correlational design is relationships rather than causation, which eliminates validity concerns regarding causal ties between independent and dependent variables (Nimon & Oswald, 2013).

Research Question

What is the relationship between the level of telecommuting, gender, age, and employee job satisfaction?

Hypotheses

H_0: No relationship exists between the linear combination of the level of telecommuting, gender, age, and employee job satisfaction.

H_a: A relationship exists between the linear combination of the level of telecommuting, gender, age, and employee job satisfaction.

Theoretical Framework

Researchers have studied the effects of telecommuting from many different perspectives, but an analysis of the literature showed that no specific theory exists on the effects of telecommuting, and researchers have not used any particular method to study telecommuting and employee satisfaction (Madsen, 2011). Although researchers have widely used job satisfaction theories and called them significantly relevant, no current theories include a focus on the impact of individual traits. Thus, the use of a person–situation interaction theory such as personal work behavior on job satisfaction provided increased knowledge of the influence of the predictor variables on job satisfaction.

Person–situation interaction theories indicate that differences exist among individuals based on their individual traits and situations (Leroy, Anseel, Gardner, & Sels, 2015). When grouped, the expected outcome of commonality will exist among those individuals (Aghaz & Hashemi, 2014). One such theory was the theory of purposeful work behavior by Barrick, Mount, and Li (2013). The purposeful work behavior theory is a combination of such theoretical views as Digman's five-factor model and Hackman and Oldham's job characteristics theory in an attempt to expand the literature on person–situation interactions (Barrick et al., 2013). According to the theory, there are four higher order goals that every employee strives to obtain to determine meaningful and purposeful work behavior. When an employee obtains these high order goals in their work, their work behavior becomes defined by their individual traits (Barrick et al., 2013).

The four goals were communion (relatedness), status (power), autonomy, and achievement. Purposeful work behavior is an integration of higher order goals and job characteristics in an effort to describe the impact individual traits and job characteristics have on work outcomes (Gully, Phillips, Castellano, Han, & Kim, 2013). Within this study, I determine job satisfaction by individual traits and job characteristics, given that all employees are striving to achieve higher order goals. Although purposeful work behavior does not call out individual demographic characteristics specifically, the notion that all individual characteristics apply was the focus of this study. I expected the need to obtain the four goals, along with the ability to telecommute, to result in different job satisfaction levels among the different predictor variables. Thus, purposeful work behavior was the theoretical framework examined in this study.

Operational Definitions

Electronic cottage. An electronic cottage is a reference for telecommuting (Madsen, 2011); the term originally referred to a home equipped with a computer, modem, and telephone line that allowed an individual to perform work in the home while connected to a remote computer site (Nyaanga, Ehiobuche, & Ampadu-Nyarkoh, 2013).

Flexible work arrangements. A flexible work arrangement includes the ability to adjust working times and locations for a better work–life balance (Rocereto, Gupta, & Mosca, 2011).

Job satisfaction. In this study, job satisfaction included positive or negative feelings employees have about their job (Basak, 2014).

Level of telecommuting. Level of telecommuting is the number of days (1-5 days per week) spent telecommuting (Martin & MacDonnell, 2012).

Nontelecommuter. A nontelecommuter is an employee who performs job duties at the organizational facility (Wheatley, 2012).

Telecommuter. Telecommuters are employees allowed to perform organizational duties from home or other locations using technology (Madlock, 2013).

Telecommuting. Telecommuting, also known as telework, is an arrangement between an organization and an employee to work from a location other than the organization's business site (U.S. Office of Personnel Management, 2013).

Assumptions, Limitations, and Delimitations

Assumptions

This study included two assumptions: respondents were truthful and organizational culture would be insignificant for a telecommuter. Meeting the first assumption was likely because participation was voluntary, and participants were able to withdraw at any time. The second assumption was that in-office organizational culture would not have a significant impact on the findings. Although organizational culture has a significant relationship with employee satisfaction (Ahmad & Veerapandian, 2012), in this study organizational culture was irrelevant, as all the participants were telecommuters and not likely to experience in-office organizational culture situations.

Limitations

The limitations of this study included convenience sampling and correlational studies. Using convenience sampling limits generalizations to large populations

(Acharya, Prakash, Saxena, & Nigam, 2013). Furthermore, a general limitation in correlational studies is generalization and participant behavior. For example, each participant is an individual, and I could not generalize each participant's behavior over the entire population. Instead, the purpose of this study was to determine the relationship between the variables. Furthermore, the use of a self-reporting survey was also a limitation. As the participants answered the questions based on their perspective, their individual perspective could affect the validity of the study. Although participants may try to be honest, they might lack introspection, which could bias their response (Simon & Goes, 2013).

Delimitations

The focus of this study was to examine if a relationship exists between job satisfaction, gender, and age among telecommuters. Additionally, the goal of the study was not to determine or compare any job satisfaction levels of nontelecommuters or individuals with any other special employment arrangements.

Significance of the Study

Contribution to Business Practice

The findings from this study include new insights regarding the relationship between job satisfaction among telecommuters within different age and gender groups. The results provide insight into whether the number of days a person telecommutes is a predictor of job satisfaction. These insights are beneficial in helping organizational leaders determine who to target, if anyone, for telecommuting programs. Additionally, as organizational leaders target employees who are likely to gain more satisfaction from

telecommuting, the effect on the environment is evident: fewer people commuting to work decreases emissions and thus improves the environment. These new insights help business leaders implement new practices, policies, and procedures concerning telecommuting, such as defining the amount of time a person can telecommute, defining the parameters of what constitutes a telecommuter, and setting requirements for who can telecommute.

Implications for Social Change

As more organizational leaders are cutting costs, they should understand which benefits offer the most value to their employees. Through this study, leaders may gain new insights into which employees they should target for telecommuting opportunities. Additionally, leaders may gain new insight into how their employee base might respond to new telecommuting programs and policies based on the demographics of their organization. Furthermore, as organizational leaders gain a new understanding of telecommuters and target employees for telecommuting roles, fewer people commute to work, which decreases emissions and improves the environment.

A Review of the Professional and Academic Literature

The literature review consisted of contemporary peer-reviewed research for studies on theories on telecommuting, job satisfaction, age, and gender. The search for literature on each variable involved using EBSCOhost, Emerald Insight, ProQuest, Sage Journals, and Thoreau databases. Each database had a collection of business journals that included peer-reviewed and academic research journals and articles on a multitude of business topics. Therefore, the literature review consisted of the following segments:

- The third wave society theory
- Alternate theories of job satisfaction
- Alternate theories of person–situation
- Telecommuting
- Elements of age
- Elements of gender
- Job satisfaction
- Telecommuting and job satisfaction
- Telecommuting, age, and job satisfaction
- Telecommuting, gender, and job satisfaction
- Telecommuting, age, gender, and job satisfaction

Searching each database for the same variables led to some duplicates in the results. The summary of the search represents a sample of the results and only reflects the search on ProQuest. Table 1 shows the results of the ProQuest search.

Table 1

Sample of Database Results From ProQuest

Searched categories	Total	Scholarly journals	Dissertations	Books
Telecommuting	10,293	495	63	4
Age differences	178,358	73,095	3,820	3
Gender	70,777	33,112	3,292	8
Job satisfaction	44,366	10,230	2,071	15
Telecommuting/job satisfaction	182	35	16	0
Telecommuting/age/job satisfaction	11	2	1	0
Telecommuting/gender/job satisfaction	4	3	1	0
Telecommuting/age/gender/job satisfaction	1	1	0	0

I reviewed 365 articles for relevance and used 91 in the literature review. Of the 91 resources, 83 were journal articles, four were dissertations, one was a paper, and three were governmental research documents. Eighty-one of the 91 sources (89%) were peer reviewed, and 79 (86.8%) had publication dates within 5 years of the completion of this study.

The purpose of this study was to determine the relationship between level of telecommuting, gender, age, and employee job satisfaction. The null hypothesis was no relationship existed between level of telecommuting, gender, age, and employee job satisfaction. Within the literature review, I addressed all the variables associated with the hypotheses. Additionally, this review addresses all theories considered for the theoretical framework in this study. The theoretical framework is the foundation of a study, and the review started with literature regarding the theoretical framework.

The theoretical framework used in this study was the purposeful work behavior theory. This theory concerns the impact individual characteristics can have on behavior. For the purpose of this study, individual characteristics consisted of gender, age, and level of job satisfaction, and I measured behavior in job satisfaction levels. However, I considered several other theories as the theoretical framework prior to using purposeful work behavior. A review of these alternative theories appears below.

Theory of the Third Wave Society

One theory considered for this study was Toffler's theory of the third wave society. Toffler is a futurist who has written several books on how knowledge and technology affect civilization and may influence future society (Toffler, 2013). The

premise of his books is predominantly theoretical, as no one can study the future to ensure the predictions are correct, but the predictions are instead a guestimate based on societal patterns and social exchange theory. Toffler hypothesized that human civilizations go through three primary stages or waves.

The first wave was agrarian or traditional society, which existed from approximately 8000 B.C. to 1750 A.D. This society was the caveman society, and day-to-day living in tribes or small communities was the focus. The progression into farming led to the next civilization wave (Haller, 2011).

The second wave was industrial society, which existed from approximately 1712 to the 1950s. Members of this society acquired the knowledge to harness energy to build the steam engine and create electricity, which led to manufacturing and factories. This wave was predominately the age of the blue-collar worker and the mass production of everything from food and clothing to education. The knowledge from the second wave led to the information age (Haller, 2011).

The third wave is knowledge society, which began in approximately 1955 and has not yet ended. This wave was the information age, where knowledge is power. The primary focus in society was building knowledge to advance technologies that make life easier and more sustainable, and this wave has had one of the largest historical impacts on human society (Kornienko, Kornienko, Fofanov, & Chubik, 2015). In the third wave society, Toffler suggested the notion of the *electronic cottage*, working from home, or telecommuting (Nyaanga et al., 2013). The notion of the electronic cottage came from the belief that knowledge changes everything, and that as people become more aware of their

impact on society and the technological advancements that are possible, they look for advancements to improve the standing and quality of life. Telecommuting provided such improvements (Haller, 2011).

Toffler's primary notion in the third wave was not so much about how telecommuting affects life as it is about why telecommuting came about. Toffler noted that telecommuting comes from advancements in technology and the notion that technology would become the focal point of existence. Toffler further asserted that the knowledge gained from technology has significantly affected how individuals live and work (Khanna & Khanna, 2011). Toffler's theory is a mainstay in discussions of the future, but the purpose of this study was not to look at why people telecommute but to look at the effect of telecommuting on a teleworker's job life. Hence, the third wave society theory was not relevant for this study. As the primary focus of this study was job satisfaction among telecommuters, the basis of more relevant theories is job satisfaction.

Alternative Theories of Job Satisfaction

Researchers have studied job satisfaction from different angles using many theoretical frameworks, including the impact of telecommuting as noted by Madsen (2011), who reviewed a multitude of studies on telecommuting and job satisfaction. However, no one particular framework has stood out over another. In fact, many frameworks are extensions of earlier frameworks. Saif, Nawaz, Jan, and Khan (2012) found that Maslow developed one of the first theories known as a content theory.

Content theories such as Maslow's hierarchy of needs, Herzberg's two-factor theory, Alderfer's ERG theory, and McClelland's theory of needs consider the fulfillment

of an individual's needs to be a motivating factor (Royle & Hall, 2012). Each of these theories, developed in the second half of the 20th century, is need based. Meeting or not meeting individual needs could affect the level of job satisfaction. Each theory has its own definition of what needs are necessary to obtain job satisfaction. A belief of all the theories noted is that fulfilling an individual's needs leads to general satisfaction (Saif et al., 2012).

According to Maslow's hierarchy of needs theory, created in 1954, there are five basic needs required to gain satisfaction: physiological, safety, belongingness, esteem, and self-actualization (Eggerth & Flynn, 2012). As an individual moves up the hierarchy and achieves each of the needs, that individual's level of satisfaction increases (Lester, 2013). Thus, a person reaching self-actualization should experience a high level of job satisfaction regardless of the job.

Herzberg's two-factor theory, developed in 1959, differs from Maslow's theory, as it categorizes needs into two factors: hygiene or job dissatisfaction factors and motivation or job satisfaction factors (Basak, 2014). Hygiene factors include working conditions such as telecommuting, job, salary, and other such elements. Motivational factors include elements such as achievement, recognition, and growth. When combined, these two factors lead to four levels of satisfaction, with the highest being high hygiene and high motivation and the lowest being low hygiene and low motivation. Additionally, Herzberg's theory indicated that when employees had motivational factors, their job satisfaction levels were also higher (Sinha & Trivedi, 2014).

Alderfer's 1969 ERG theory was an expansion of Maslow's theory that involved categorizing Maslow's five needs into three needs categories (Yang, Hwang, & Chen, 2011**)**. Alderfer proposed three basic needs: existence, which includes physiological, safety, and material needs; relatedness, which includes the feeling of belonging, respect, and security; and growth, which consists of self-actualization and esteem (Yang et al., 2011). Each basic need builds upon the others, and as people achieve one, they begin to advance to the next one.

McClelland's theory of needs from 1961 differed from the other theories noted, as its focus was on individual achievements; thus, an alternative name is achievement theory (Royle & Hall, 2012). According to McClelland, satisfaction comes from obtaining three basic needs: achievement, power, and affiliation. Achievement means having the urge or the need to excel or exceed expectations of self and others, whereas power refers to needing to have others under control and command by dictating their moves and actions. Affiliation referred to the need to have personal relationships and collaboration with other people in the workplace. McClelland noted people have an internal level of accountability and need to be accountable to others (Royle & Hall, 2012).

Although theories on job satisfaction are vast, they were not suitable for this study. The focus of this study was to examine the how the predictor variables affect the level of job satisfaction. However, none of the theories of job satisfaction mentioned above included the impact of individual characteristics; instead, the focus was on the motivators in job satisfaction. Thus, theories of person–situation interactions were a better theoretical fit for this study.

The alternative to content theories is process theories. The basis of process theories is expectations or certain actions that will yield a particular outcome. For example, the expectancy theory, states that an individuals' goals help to motivate them and that certain elements will help individuals reach their goals. Additionally, job satisfaction levels can be increased in organizations by increasing rewards and/or lowering the workers expectations (Friend, Johnson, Rutherford, & Hamwi, 2013). Some other process theories are behavior modification, cognitive evaluation, goal setting, reinforcement, and equity theory. Saif et al. (2012) noted that expectancy, equity, and goal setting are the best known process theories.

Alternative Theories of Person–Situation

In 1973, Allport defined approximately 50 personality traits, which began the cataloging of personality traits (Phelps, 2015). Researchers often label traits either nomothetic or idiographic. The nomothetic view indicates that individual characters that had commonality in groups would exhibit the same outcome in each group, whereas the idiographic view attempts to identify those traits that make a person unique. Allport theorized that traits are predictive (Phelps, 2015). Thus, traits would define the behavior an individual would exhibit. Allport's theory, which Allport renamed dispositional theory, was the basis for many other theorists' work, including Maslow's theory of needs (Thompson, 2015).

The basis of situational strength theory is the finding of Mischel, who in 1968 was looking into why current research did not address the impact situation has on behavior. Mischel proposed that individual traits within a person defined the strength of the

situation. For example, a man and woman might have different behaviors within the same environment because their gender traits are different (Dalal et al., 2012). Thus, individual traits affect a person's decision-making response or behavior (Mayoral & Vallelado, 2015). The theory led Mischel to expand it to create cognitive affect processing systems, which focus on the impact of individuals' expected behavior within certain situations (Clarkin, Lenzenweger, & Meehan, 2015).

Tett and Gutterman proposed trait activation theory in 2000. According to the theory, a person's individual traits can predict behavior, but there must be some relevance between the trait and the situation for the effect to be consistently present (Zhang, Wang, & Pearce, 2014). This theory is different from situational strength theory, which compelled a behavior based on one specific trait. The basis of trait activation theory is a positive relevance between a trait and a situation (Tett & Guterman, 2000).

The focus of person–job fit theory is on how well an individual's particular skill set and job match (Khanin, 2013). According to person–job fit, which is one of the most commonly used theories, job satisfaction occurs when an individual's organizational environment is in line with individual traits or needs (Lu, Wang, Lu, Du, & Bakker, 2014). Researchers often reference person–job fit with person–organization fit, which indicates that job satisfaction occurs when the values within an organization coordinate with a person's values (Afsar, Badir, & Khan, 2015). Person–job fit and person–organization fit theories fit into person–environment theory (Quratulain & Khan, 2015). French, Rodgers, and Cobb first proposed person–environment theory in 1974 (Caplan, 1987), although some credit Parsons as the originator of the theory (Hansen, 2013).

Jansen and Kristof-Brown further expanded the theory in 2006 to be multidimensional and Yu expanded it again in 2009 (Hansen, 2013). The main framework of the person–environment fit theories is an understanding of the relationship between an organization and it members.

As noted, I could have used several theories to guide this study. I found the theory of purposeful work behavior to be the best fit. The expected outcome was that significant differences existed in job satisfaction among the different variables. Thus, the expectation of the results was the rejection of the null hypothesis, which would indicate that age, gender, and level of telecommuting can predict job satisfaction.

Telecommuting

The roots of telecommuting go back to the1970s, when links served to bridge networks between satellite offices and downtown mainframes through telephone lines (Waters, 2015). Niles, an employee for NASA who was looking for an alternative to employees being onsite, first used the word telecommuting in the 1970s (Mekonnen, 2013). The ongoing and exponential decreases in cost, along with the increases in performance and usability of personal computers, created the movement from the office to the home (Bayrak, 2012). One of the primary factors affecting the use of telecommuting was the ongoing oil crisis. With the cost of oil and gas increasing, people began looking for other ways to save energy and to reduce costs and traffic congestion (Calvasina et al., 2012).

By the early 1980s, branch offices and home workers were able to connect to organizational mainframes using personal computers and terminal emulation. However,

most telecommuters were individuals with disabilities (Bayrak, 2012). In the 1990s, the focus on telecommuting increased as a measure to save the environment. The focus of the Clean Air Act was on decreasing pollution through telecommuting and allocating funding to such efforts (Saadatabadi, 2013). The digital age began in the 1990s, when the human experience transitioned from the industrial revolution with humans being the primary workers in factories and assembly lines to computer-based factories and assembly lines with minimal human interactions (Haigh, 2014). This transition to the digital age and the use of electronics was what Toffler proposed as the electronic cottage.

In 2000, approximately 23.6 million people telecommuted at some point during the year (Federal Highway Administration, 2011). The number of individuals who telecommuted at least once during the year continued to increase to more than 30 million in 2004 (Federal Highway Administration, 2011). Researchers at World atWork (2011) estimated that 33.7 million people worked from home or some other location in 2008. This number decreased to 26.2 million in 2010, likely due to the increased unemployment at that time (WorldatWork, 2011). With the government looking for ways to decrease costs, telecommuting again started to increase.

The Telework Enhancement Act of 2010 was an integral part of the U.S. government's efforts to implement a sustainable telecommuting program to improve federal employees' work–life balance, decrease costs, and improve environmental efforts (U.S. Office of Personnel Management, 2013). Following the Telework Enhancement Act of 2010, the number of telecommuters continued to increase. In 2012, the number of telecommuters rose to more than 34 million (Clark, Karau, & Michalisin, 2012). The

numbers of telecommuters will continue to increase as long as perceived outcomes from telecommuting continue to rise (Martin & MacDonnell, 2012).

The increase in telecommuting is relevant all over the world. A survey of Canadians in Edmonton, Canada, revealed that a significant number of workers who drive, carpool, or take public transportation were willing to telecommute (Nurul Habib, Sasic, & Zaman, 2012). In the Netherlands, approximately 27% of workers indicated a lack of satisfaction regarding their ability to define the flexibility of their work locations (Vink, Blok, Formanoy, de Korte, & Groenesteijn, 2012). In Europe, nearly six out of every 10 workers preferred the ability to work from home instead of having to go into the office daily (Vitola & Baltina, 2013). Employees around the world are looking for different working arrangements to suit their individual needs, and recent college graduates are considering telecommuting arrangements a priority when researching employers (Koh, Allen, & Zafar, 2013).

The effect of telecommuting on organizations has been a focus of many researchers (Coenen & Kok, 2014). Telecommuting has a significant effect on an organization and its bottom line. Some organizational leaders have been able to reduce costs and save millions of dollars in real estate and other expenses due to telecommuting (Calvasina et al., 2012; Cameron, 2012). Allowing employees to telecommute benefits employers by decreasing overhead and reducing their carbon footprint (Ellison, 2012). Additionally, telecommuting can increase productivity as well as employee morale (Lari, 2012; Rocco, 2014). Another benefit of telecommuting is the value it can bring in recruiting and retention efforts (Leslie, Manchester, Park, & Mehng, 2012).

Telecommuting also provides benefits for individual employees. One such benefit is the ability to manage work–life balance, which is one of the primary benefits that telecommuting can provide to employees (Fonner & Stache, 2012). This is especially true in women with school-age children or younger who are more likely to want telecommuting arrangements, which indicates that telecommuting helps to manage a work–life balance (Dockery & Bawa, 2014). The level of telecommuting also affects the ability to maintain a work–life balance, as some employees may only need to telecommute 1-2 days, and others prefer to telecommute 5 days a week.

Furthermore, examining work–life balance, job effectiveness, and the well-being of telecommuting employees, Grant, Wallace, and Spurgeon (2013) found that telecommuting could have a negative effect on work–life balance and well-being due to a lack of downtime and the inability to turn off work. Other researchers have found that work–life conflict and flexible work arrangements such as telecommuting do a have a relationship but the relationship is not as significant as previously thought (Allen, Johnson, Kiburz, & Shockley, 2013). Additionally, researchers have found that some telecommuters can negatively affect personal time by extending their work hours and overworking because the work is readily accessible to them (Dockery & Bawa, 2014).

The effect of leadership styles on telecommuters can also have an effect on employee perceptions and job satisfaction levels. Several researchers have examined the relationship of perceived leadership style on telecommuters' intent to leave or level of job satisfaction (Brunelle, 2013; Overbey, 2013). Some leadership styles can be detrimental to an employee's attitude toward the workplace, whereas others increase an employee's

level of job satisfaction in the workplace. Studies on transformational leadership style are contradictory. Overbey (2013) determined that transformational leadership leads to an employee's intent to leave an organization, which indicates a level of job dissatisfaction, whereas a more laissez-faire leadership style depresses an employee's intent to leave an organization, thereby indicating that job satisfaction and a transactional (task-oriented) leadership style had no effect. Additional studies on transformational leadership indicate that telecommuters have greater satisfaction within a transformational leadership style (Brunelle, 2013). Additionally, researchers have determined that task-oriented leadership exhibited greater job satisfaction among telecommuters (Madlock, 2013), which is an exact contradiction to Overbey (2013). However, in subsequent studies, Madlock confirmed the initial findings and determined that leaders who give motivating task-oriented directions have a greater level of job satisfaction among telecommuters than those exhibiting another leadership style.

Another area researched in telecommuting was the effect of personality traits on the level of job satisfaction. Using the organization fit theory, Clark et al. (2012) examined the relationship between personality traits and telecommuting attitudes. The final determination was that extroverted personalities experience no difference in satisfaction levels between telecommuters and nontelecommuters. Future studies on the relationship between personality and telecommuting failed to validate Clark et al.'s findings that no significant differences existed in the level of job satisfaction based on personality traits. O'Neill, Hambley, and Bercovich (2014) found that personality traits were a predictor for counterproductivity and procrastination among telecommuters.

Comparing telecommuters and nontelecommuters offers many different perspectives on the differences between a flexible work arrangement and a traditional workplace (Mekonnen, 2013). The focus of studies in this area was often on the different attitudes and organizational views between the two workgroups: telecommuters and nontelecommuters. One view examined was the productivity of nontelecommuters versus telecommuters. For example, organizational leaders often believe that telecommuters are less productive than their nontelecommuting counterparts. However, Bloom, Liang, Roberts, & Ying (2013) found that an employees ability to telecommute actually increased their productivity. The belief that telecommuters are less productive can lead to frustration and competition between coworkers, which can affect productivity and morale. Several issues that supervisors should keep in mind when managing both telecommuters and nontelecommuters are how they monitor employees performance, social integration and workgroup culture (Lautsch & Kossek, 2011). This will help ensure telecommuters feel part of the team and not isolated and nontelecommuters see value in the their telecommuting counterparts.

Another area of comparison between nontelecommuters and telecommuters was job quality and work–life balance. The largest variation between telecommuters and nontelecommuters is the number of hours worked (Dockery & Bawa, 2014). Telecommuters often worked longer hours because their work was more readily available in their home environment (Dockery & Bawa, 2014). This finding most often referred to men, as they were more likely to continue working during off hours (Khan, Ramzan, & Butt, 2013).

In addition, researchers have also examined the relationship between telecommuters and their telecommuting counterparts. Fay and Kline (2011) examined not only the relationship between coworkers but also the impact of informal communications among coworkers. The results indicated that when telecommuters are socializing and sharing their family life with coworkers, they are not likely to feel more satisfied. However, when talking with coworkers on the issues facing the organization, there is likely to be an effect on the level of job satisfaction. Additionally, Fay and Kline found that the greater the satisfaction with coworker communications levels, the more job satisfaction and organizational commitment telecommuters had.

Researchers have focused on why people choose to telecommute, what factors affect their choice to telecommute, and how often they telecommute. In one such study, Walls, Safirova, and Jiang (2007) looked at the factors that influence a person's need to telecommute and the frequency with which that person telecommutes. The result of the study reflected that a worker's location and type of job are both significant factors in whether that person chooses to telecommute. Having a formal telecommuting policy had a significant impact on the choice to telecommute, as did age, education, and race (Walls et al., 2007). Age, education, and race had a significant impact on choosing to telecommute, but the results indicated that gender was not a significant factor.

The outcome of an examination of the impact of gender, education level, and age on the decision to telecommute indicated that women were more likely than men to want to telecommute (Saadatabadi, 2013). This was in part due to their need to take care of their families, especially their young children. Furthermore, Saadatabadi (2013) revealed

that neither education nor age had a significant impact on a person's need to telecommute. These findings contradicted Walls et al.'s (2007), who determined that education had a significant impact on a person's need to telecommute.

Telecommuting can viewed from many different angles. The research on telecommuting reflects differences in the telecommuting workforce by the level of telecommuting, industry, job satisfaction, leadership, work–life balance, and a multitude of other areas. Each area could affect how organizational leaders and management handle telecommuting programs in their organizations. This study expanded the literature through a focus on the demographics related to job satisfaction, including age, gender, and the level of telecommuting. As technologies advance, it is likely that the wants and needs for telecommuting would also advance. This knowledge ensures not only the relevance of telecommuting but also the importance of job satisfaction among telecommuters.

Elements of Age and Generation

The 21st-century workplace includes four generations working side by side: traditionalists, baby boomers, members of Generation X, and new boomers (Al-Asfour & Lettau, 2014). These four generations are distinctly different in their experiences; values; and views on work, family, and life in general (Hillman, 2013). Thus, a change in the demographics of the workforce can have a significant effect on the workplace culture (Alexander & Sysko, 2013). A majority of the workforce consists of baby boomers who have not yet retired, and the smallest working population in 2015 is the traditionalists (Al-Asfour & Lettau, 2014).

Traditionalists are those born between 1922 and approximately 1943 (Al-Asfour & Lettau, 2014). Often referred to as veterans, these workers were not part of World War II. However, they lived the experience of the veterans returning from World War II. Traditionalists also lived the experience of the Cold War. They are dedicated, committed, and hardworking, and they believe in the law, justice, high values, and respect. They are often not technologically savvy and may refuse technological advances. Most have retired, but those in the workplace are likely to be leaders who appreciate hierarchy and are looking for loyalty (A. Lim & Epperly, 2013).

The birthdates of baby boomers are from approximately 1944 to 1960 (Al-Asfour & Lettau, 2014). They experienced the Civil Rights Era, the Vietnam War, and mainstream television. Baby boomers are the "me" generation that consisted of stay-at-home mothers and working fathers (Lim & Epperly, 2013). They are high achievers driven by success, personal growth, and development and often tend to be workaholics (Hillman, 2013). Baby boomers are seeking to enjoy their legacies and are looking for more leisure and family time. Baby boomers use technologies to make their lives more efficient (Favero & Health, 2012).

The birthdates of members of Generation X, also known as the MTV generation, were between 1965 and 1980 (Lim & Epperly, 2013). Members of Generation X experienced the era of Michael Jackson, music videos, AIDS, and the fall of the Berlin Wall. Additionally, members of Generation X are family oriented; they believe in sharing life with family and friends, as many of them experienced divorce in their childhood homes (Lim & Epperly, 2013). They are well educated and believe in personal growth

and awareness. Known as questioners, they constantly challenge authority and prefer to get in, do the job, and get out (Seipert & Baghurst, 2014). Members of Generation X value diversity, teamwork, and a collaborative working environment. They are technologically advanced, and they enjoy living in a digital world.

The new boomers, also known as the millennials and sometimes members of Generation Y, are technologically savvy, computer-oriented multitaskers (Al-Asfour & Lettau, 2014). Born between 1981 and 1999, they experienced Hurricane Katrina, Columbine, the war on terror, and 9/11. They are more technologically advanced than previous generations. They are information driven, they highly value technology, they are environmentally conscious, and they want to get there fast and reap the rewards (Seipert & Baghurst, 2014). New boomers tend to be minimalist and do only the minimum amount of effort needed to succeed (Alexander & Sysko, 2013). They are team oriented but are not likely to spend a full 8 hours in the workplace. They like to keep in close contact with their circles using social media, e-mail, and other computerized technologies.

The study involved comparing each of these generations to determine which generation was more likely to gain job satisfaction in a telecommuting environment. Based on their values and experiences, it was likely that millennials and members of Generation X would experience higher levels of job satisfaction in a telecommuting environment than traditionalists or baby boomers. This determination is crucial in helping managers to determine which generations to offer telecommuting options.

Elements of Gender

Researchers have studied gender from many different vantage points (Dabic, Daim, Bayraktaroglu, Novak, & Basic, 2012; Eriksson & Sandberg, 2012; Groeneveld, Tijdens, & van Kleef, 2012). A search of articles on gender differences in ProQuest yielded 10,129 results. Researchers have reviewed gender differences in every area from human resources, to education, to business, to information technology, and to others areas. Men progress faster in their careers (Groeneveld et al., 2012), receive more pay (Mani, 2013), and are more direct and to the point (Dabic et al., 2012). Women tended to be more outgoing, accepting, and social (Eriksson & Sandberg, 2012); are less likely to start a business (Dabic et al., 2012); often have less education (Fisher, Hayhoe, & Lown, 2015); and preferred to spend more time away from the office (Fisher et al., 2015).

When it comes to general job satisfaction levels and the effect of children on job satisfaction, it seems that no gender differences exist (Pew Research, 2013). Thus, it seems that many variables have a part in determining gender differences. Often in the research on telecommuters, gender was a control variable and not a dependent variable of the relationship. As part of this study, I examined if gender was a predictor of job satisfaction in telecommuters.

Job Satisfaction

Internal and external factors such as age, gender, education, organization perception, management style, work environment, and many other factors significantly affect job satisfaction (Basak, 2014; Paul, 2012). Employees also looked for environments or organizations that fit their perception of where they want to work. Thus,

organizational culture and person–environment fit played an important role in determining job satisfaction (Ahmad & Veerapandian, 2012), which directly relates to telecommuting.

When employers meet the needs of their employees, then those employees are more likely to experience job satisfaction than employees whose needs remain unmet. As previously noted, many theories serve as the basis for motivators of job satisfaction; however, the focus of this study was on content theories. Researchers conducting a study on job satisfaction among faculty at the University of Balochistan examined Herzberg's two-factor theory (Malik, 2011b). The results indicated the theory might not hold true in all instances. In fact, many factors can have an effect on job satisfaction, and the true determining factors in job satisfaction may be individual demographics (Malik, 2011b). I narrowed the scope of the factors to focus on those variables used in this study. However, I found it relevant to address the area of perceived organizational support because the ability to telecommute requires a significant amount of organizational support to be successful.

Perceived organizational support is the perception employees have of how their organization or supervisor supports their effort to perform their duties as employees (Rhoades & Eisenberger, 2002). A review of the literature on perceived organization support by Rhoades and Eisenberger (2002) revealed that job satisfaction directly relates to perceived organization support, and those employees who feel their employers value them and care about their well-being show commitment to the organization in the form of productivity, intent to stay, referrals, and other support functions to ensure organizational

success. Researchers have often overlooked demographic factors such as age and gender as control variables.

Turnover intention is often one of the primary factors considered in determining job satisfaction. Employees not satisfied with their positions are likely to search for another job and do not intend to stay with their current employer. Perceived organization support appears to have an effect on turnover intentions (Ertürk, 2014), which indicates that when turnover intentions are at a low, perceived organization support or job satisfaction is high. This effect also holds true when there is discord between an employee and a direct supervisor. An employee's perception often comes from a direct supervisor, and thus, a negative perception of support from a supervisor leads to an employee responding negatively to the organization or having low job satisfaction (Shoss, Eisenberger, Restubog, & Zagenczyk, 2013).

The research clearly indicated perceived organization support affects job satisfaction (Shoss et al., 2013). Although the focus of this study was not about perceived organization support, the support was an implication because employees are telecommuting, which indicated that the organization provides some support to employees to allow them to telecommute. This support includes the ability to work from home and the resources necessary to work from home, such as a laptop, phone, and fax.

As previously noted, researchers have often viewed the demographic variables affecting job satisfaction as control variables. However, this study included demographic variables as predictor variables that affect an employee's job satisfaction levels. One such factor was age. Age is a variable that no one can control because it happens naturally, but

it is possible to understand how it affects organizations. The findings of several studies on job satisfaction and age indicated that there was no significant correlation between job satisfaction and age (Ghazzawi, 2011). Researchers often use the Minnesota Satisfaction Questionnaire (MSQ) to determine job satisfaction levels, just as I did in this study. Using the MSQ, Ghazzawi determined that when looking at intrinsic and extrinsic factors, no real pattern of correlation emerged. However, when looking at overall employee satisfaction, members of Generation X had higher levels of dissatisfaction in more areas than their counterparts did. Older workers gained job satisfaction through autonomy, which indicated that older workers who choose to telecommute would have higher job satisfaction (Truxillo, Cadiz, Rineer, Zaniboni, & Fraccaroli, 2012).

Gender is another variable that could affect job satisfaction. Research has shown a significant relationship exists between genders and level of job satisfaction (Khan et al., 2013). The results indicated that men have a higher level of job satisfaction because they have a higher level of dedication to their work. The results from another study indicated that no significant difference existed between men and women concerning job satisfaction (Rast & Tourani, 2012). Studies on job satisfaction and gender alone were not as vast; however, several researchers have examined both age and gender (Malik, 2011a, 2011b).

Several studies reviewed indicated the effect of both age and gender on job satisfaction. In one such study, Malik (2011a) revealed that no significant difference existed by age, although the satisfaction levels of men were lower than the satisfaction levels of women. This finding received further validation by Khan et al. (2013), who

determined that no significant relationship existed between ages but that there was a correlation between job satisfaction and age between officers and managers within the financial institute they studied due to the different paths experienced by individuals within the organization. Furthermore, men had higher general job satisfaction levels than women (Khan et al., 2013). In contrast, Eleswed and Mohammed (2013) also studied a financial institute but found that females generally had higher levels of satisfaction than their male counterparts had and found that older employees had more job satisfaction than younger employees had. This finding received further support from Singh and Sanjeev (2013), who determined that women generally have higher levels of satisfaction and that job satisfaction increases with age, although a slight decrease often occurs between ages 30 and 35.

No conclusion emerged from the literature regarding the significance of age or gender on job satisfaction. Therefore, the need for further research on the variables that affect job satisfaction was clear (Malik, 2011b). Additionally, Truxillo et al. (2012) indicated that additional research is necessary on age and job design to determine how a job's design, age, and other variables can affect job satisfaction. This study represented an attempt to fill the gap in research on the effect of telecommuting, age, and gender on job satisfaction.

Telecommuting and Job Satisfaction

As technologies advance, the ease of telecommuting and the need for telecommuting become more prevalent, which in turn increases the need to understand the effects of telecommuting. Studies about telecommuting involved determining if a

relationship existed between job satisfaction and telecommuting and the significance of that relationship. A good understanding of the variables related to job satisfaction is important for managers to understand their workforce and overall organizational effects (Aboelmaged & El Subbaugh, 2012).

The type of work or the intensity of the employee's work also had an effect on the level of satisfaction (Nyaanga et al., 2013). Employees whose jobs do not require face-to-face interaction can telecommute. However, some employees may miss the face-to-face interactions and thus feel less job satisfaction because they miss the social element of being in the office (Ruth, 2011). Employees who work from home can cut their commute times and have more time to complete their work or more time with their families, thus increasing their overall satisfaction level. Furthermore, Kooij, Jansen, Dikkers, and De Lange (2010) found a linear and curvilinear relationship between age and job satisfaction within high-commitment human resources practices such as flexible work schedules. Using several theoretical references such as selection, optimization, and compensation theory; social exchange theory; and signaling theory, Kooij et al. examined the relationship between high-commitment human resources practices such as telecommuting and work outcomes such as job satisfaction. However, Demas (2011) indicated that no correlation exists between job satisfaction and work location (i.e., virtual, in office, or home office).

A factor of telecommuting is the frequency that an employee telecommutes as a factor of job satisfaction. A person who only telecommutes 1 day each week may have a different perspective from someone who telecommutes 5 days each week. Additionally,

the intensity of telecommuting can affect job satisfaction level, as those telecommuting a significant amount of time had more job satisfaction than those telecommuting only a few hours each week (Nyaanga et al., 2013). In studies on telecommuting, researchers often overlooked this factor as they focused on location instead of frequency (Martinez & Gomez, 2013). However, researchers often viewed the frequency of telecommuting as an average number of hours worked and did not determine what type of employee is most likely to work from home with the most frequency (Dockery & Bawa, 2014).

Establishing and implementing flexible work practices, such as telecommuting, can have an effect on job satisfaction levels. Wheatley (2012) found that telecommuters have more job satisfaction than their counterparts do. Additionally, the work of telecommuters appeared to be more intense as an effort to give back to their employer. Furthermore, women tended to have greater level of job satisfaction than men, especially when the telecommuting arrangement was informal and flexible, which allowed for more time to manage work–life balance (Troup & Rose, 2012). When both parents had flexibility in their workplace and work schedules, they both tended to have higher satisfaction levels (Stout et al., 2013).

Other factors also affected job satisfaction levels. As telecommuters age, their level of organizational commitment begins to decrease. Thus, younger participants tended to feel more satisfied with telecommuting options (Martin & MacDonnell, 2012). In general, telecommuters who chose to telecommute tended to have a higher level of job satisfaction (Wheatley, 2012). Additionally, role stressors such as role ambiguity and conflict can have a negative effect on job satisfaction levels, with a correlation to

decreased job satisfaction levels (Sardeshmukh, Sharma, & Golden, 2012). Leadership style, supervisory style, and other organizational commitment factors also affected job satisfaction (Dahlstrom, 2013; Madlock, 2013). Additionally, heritage played a role on the level of job satisfaction among telecommuters (Masuda et al., 2012). Masuda et al. (2012) looked at the availability of telecommuting programs such as flexible work programs in relation to work to family conflict, turnovers, and job satisfaction levels. The outcome of the study indicated that Caucasians tended to be more satisfied, whereas Latinos and Asians were less satisfied.

The formalization of telecommuting policies also seems to have an effect on job satisfaction levels. An examination of the effect of formal and informal telecommuting policies by Troup and Rose (2012) indicated that telecommuting has a significant effect on job satisfaction. However, the lack of a formalized telecommuting policy had no effect on job satisfaction levels between men and women. Conversely, when a formalized policy exists, women tended to have higher job satisfaction under the formalized policy than men. There is likely some correlation between telecommuting and job satisfaction, be it positive or negative. However, this study involved an attempt to determine to what degree factors such as the level of telecommuting and demographics affect overall job satisfaction levels.

Telecommuting, Age, and Job Satisfaction

To determine which age groups of telecommuters had higher satisfaction levels, looking at any literature containing at least two of the variables is important. Researchers at the SHRM (2012) noted in their 2012 Employee Job Satisfaction Surveys that overall

job satisfaction appears affected by many demographics, including age. The SHRM researchers suggested that human resources professionals consider the relationship of demographics such as age and gender on job satisfaction levels. A difference could exist between age and job satisfaction levels (Paul, 2012). The difference was noticeable between the groups of mid-thirties to mid-forties and the groups of mid-forties to mid-fifties (Singh & Sanjeev, 2013). Others found a more significant correlation existed between age and job satisfaction (Elias, Smith, & Barney, 2012). Some researchers concluded no correlation existed between age and job satisfaction (Ghazzawi, 2011; Khan et al., 2013; Malik, 2011a).

A review of the literature indicated that the relationship between age and job satisfaction was inconclusive and required additional research to determine if a relationship exists. The current study adds to the existing literature by determining if a correlation exists between telecommuters' job satisfaction level and age.

Although multiple searches took place to find literature that contained data on age, gender, and telecommuting, very few references emerged. For example, Martin and MacDonnell (2012) determined a correlation between telework and organizational commitment, noting that as the sample age increased, the level of organizational commitment decreased, which symbolized that younger participants have a greater commitment to telecommuting options, and this level of commitment could lead to job satisfaction. Other extrinsic and intrinsic factors can also affect job satisfaction (Ismail & El Nakkache, 2014). Much like Maslow's hierarchy of needs and other content theories, telecommuting was an extrinsic factor and had a greater effect on job satisfaction levels.

A relationship existed between age and job satisfaction and between job satisfactions and telecommuting (McNall, Masuda, & Nicklin, 2010). However, no researchers have indicated a correlation exists between telecommuters, job satisfaction, and age. I addressed this gap in the literature in this study.

Telecommuting, Gender, and Job Satisfaction

To determine if gender was a predictor of job satisfaction, it was necessary to review the overall effect gender has on job satisfaction. No significant differences in job satisfaction emerged between men and women (Ghazzawi, 2011; Rast & Tourani, 2012). However, when gender was not the only factor and researchers include other needs such as pay, promotions, and work–family conflict, gender becomes relevant (Maruyama &Tietze, 2012). Women had a different perspective on workplace experiences such as job satisfaction, pay, and advancement when asked how they compare to men (Smith-Hunter, Paul, & DeCaperis, 2010). Additionally, men had a greater commitment and more confidence about their work and had a higher satisfaction level than women (Khan et al., 2013). Furthermore, some researchers had found that organizations might also have a role in gender satisfaction levels, as shown by Malik (2011a), who found that women in educational settings tend to have higher satisfaction levels than their male counterparts. Additionally, changes in the social structure changes from a male breadwinning society to a society where women are increasingly gaining more education and higher positions in the workplace have the potential to affect telecommuting (Waters, 2015). Furthermore, women may seek work positions that allow them to stay at home so that they can continue to maintain a work–life balance and be available for their children.

Studies within which researchers specifically looked at the effect of gender as more than a control variable were lacking in the literature. In a study of whether gender had a significant effect on perceived teleworking productivity, the results of a survey reflected that the effect of gender on perceived productivity was insignificant and barely noticeable (Aboelmaged & Subbaugh, 2012), which indicated that the effect of gender on job satisfaction would be minimal or insignificant. Additionally, Rocereto et al. (2011) found that no significant difference existed between male and female telecommuters and nontelecommuters but determined a greater appeal for telecommuting in nontelecommuting females than males.

Men often have a higher level of satisfaction regarding the ability to telecommute, and no difference exists between women telecommuters and nontelecommuters (Dockery & Bawa, 2014). Additionally, men had a higher level of satisfaction in a telecommuting arrangement than their nontelecommuting counterparts and their telecommuting female coworkers (Claybon, 2013), which was in direct contrast with Eleswed and Mohammed (2013), who found that women had a higher job satisfaction level in telecommuting arrangements over men. Claybon (2013) and Eleswed and Mohammed found results that contrasted with studies by Rocereto et al. (2011) and Aboelmaged and Subbaugh (2012), who found that no difference existed between men and women.

Many characteristics play a part in job satisfaction, which indicates that employers should understand the effect of gender and age as a measure of job satisfaction in organizational culture (Li & Zhang, 2013). Understanding whether females tend to have a higher level of job satisfaction than males would benefit all employers and allow

employers to target telecommuting effectively. In this study, I addressed this gap in the literature.

Telecommuting, Age, Gender, and Job Satisfaction

A review of the literature clearly indicated that researchers have focused specifically on gender and age as two separate variables (Ghazzawi, 2011; Khan et al., 2013; Malik, 2011a). However, in this study I looked at all variables simultaneously. The results of a search including all variables were limited, but the remaining discussion of the literature review includes all these variables. Looking at banking operations, Khan et al. (2013) found that staff age had no effect on job satisfaction, but that gender had a significant effect on job satisfaction and that men generally had a higher level of satisfaction than women. The differences could be a matter of circumstances and job characteristics. A more valuable view of the effect may be to focus on one characteristic and look at age and gender to determine if women of one age group have higher levels of satisfaction than men of the same age group, younger women, or older women, thereby providing a better comparison of those who gain job satisfaction in a telecommuting arrangement. This study was an attempt to provide such a comparison.

Several researchers who incorporated some of independent variables used this study, specifically age and gender, considered these variables as control variables only (Caillier, 2013; Golden & Fromen, 2011). Although these studies came up within the search for resources, the effect of these variables is void because the researchers considered them control variables and did not affect the outcome of the study. A reoccurring theme did appear when using the social exchange theory. Golden and Fromen

(2011) examined the effect of the work location of supervisors on the experiences of the employees and the results indicated that the work location of a telecommuter's supervisor had an effect on the telecommuter's satisfaction level. This result could be due to the belief that a telecommuting manager understands the struggles of a telecommuter, whereas a nontelecommuting manager may not. Other researchers such as Caillier (2013) also used social exchange theory to examine the effect of telecommuting and considered age and gender as control variables. The results of the survey indicated that a strong association existed between telecommuting and higher job satisfaction levels. Regardless of the outcomes, the researchers of both studies considered age and gender to be control variables. Thus, neither variable had any effect on the outcome of the study. However, the researchers of both studies used the same theory. I did not consider the social exchange theory for this study, as it is a psychology-based theory and not a business theory. In this study, I examined the effect of the same variables, but I did not consider them control variables. The researchers of the next studies examined did not consider age and gender to be control variables but considered them independent variables that could affect the results of the study.

In this study, I considered age and gender to be independent variables, similar to Vink et al. (2012), McNall et al. (2010), and Golden and Fromen (2011). For example, Vink et al. attempted to determine the percentage of employees satisfied with the ability to work from home at will. The results indicated that no significant difference existed between males and females, although job satisfaction did increase with age. There was no comparison of a combination of gender and age. This finding further validated McNall et

al.'s findings that significant correlations existed between age and job satisfaction. Additionally, Golden and Fromen revealed that gender also had a positive relationship with job satisfaction. Much like Vink et al., McNall et al. did not compare a combination of the variables.

In a study on trends in telecommuting, who telecommutes, and the impact of long hours of telecommuting using two national databases, Noonan and Glass (2012) found that age does not have a significant effect on job satisfaction. Their findings indicated that a telecommuter's age was not a defining variable of job satisfaction. A noticeable difference between this study and Noonan and Glass's study was that Noonan and Glass considered gender to be a controlled variable that had no effect on the outcome of the study.

During the literature review, I did not find any researchers who compared gender and age to telecommuters' job satisfaction levels. In this study, I defined whether a difference exists among different gender groups of telecommuters by age range in job satisfaction. The literature review indicated that this study significantly adds to the current literature because no other researcher had focused on this comparison variable.

The search of the literature included the elements of each subtopic. For example, telecommuting consisted of searches on telecommuting, whereas searches on age included age and job satisfaction. Each search yielded multiple responses, but I selected and reviewed only the most relevant literature studies based on their relevance to the topic. I presented the literature reviewed in segments and grouped the literature by researchers' conclusions.

Transition

Section 1 included the background and the basis of this study and involved highlighting the effect that telecommuting has on organizations and the history of telecommuting, as well as the importance and possible effect this study's hypothesis has on organizations. Additionally, Section 1 included a literature review of all elements of this study, including any demographics that could affect job satisfaction. The review showed that additional research on the predictors of job satisfaction among telecommuters was necessary.

Section 2 includes the details of how I conducted this study. Topics discussed in Section 2 include the role of the researcher, the participants, ethical issues, population and sampling methods, and reliability and validity related to this study. Section 3 includes a discussion of the findings, the application to professional practice, and the implication for social change. Section 3 also includes recommendations for further study and my reflections on the doctoral study journey.

Section 2: The Project

This section includes the details of the implementation of this study, including the role of the researcher, participants, method, population, data collection, and other elements of the study. Furthermore, this section includes a detailed review of the study and the information necessary to validate the outcome of the study. The findings of the study, a discussion of results, and the conclusion will appear in Section 3.

Purpose Statement

The purpose of this quantitative, correlation study was to inform business leaders about the relationship between the level of telecommuting, gender, age, and employee job satisfaction. The predictor variables were the level of telecommuting (measured in days per week), gender, and age. The dependent variable was employee job satisfaction. The targeted population consisted of telecommuters from the social media associations LinkedIn and Facebook. The implications for positive social change included the potential to have a better understanding of the correlates of employee job satisfaction, thus ensuring the ability to maintain corporate advantages. Additionally, the outcomes of this study might encourage more telecommuting. Increases in telecommuting reduce the number of commuters, thereby reducing emissions and decreasing pollutants in the environment.

Role of the Researcher

The role of scholarly researchers consists of many elements, including selecting the design; management, collection, and evaluation of data; adherence to strict ethical guidelines; and publication of the research (Kyvik, 2013). I built the survey instrument in

Survey Monkey, conducted the survey, collected and analyzed the data, and interpreted the results of the study. Prior to the data collection, I defined the purpose of the study, developed the hypothesis, and determined the method to use during the study. During the study, I worked to ensure that I did not affect the outcome of the study in any way.

As I posted the request to participate in the study to my personal LinkedIn and Facebook pages and communities, I had at minimum an acquaintance relationship with all participants of this study. Additionally, some of the participants also worked for the same company where I work. None of the participants had a direct reporting relationship to me. According to the *Belmont Report*, researchers should treat all participants of a study respectfully with beneficence and justice (Adams & Miles, 2013). I treated all participants equally and fairly, thus ensuring I met all principles of the *Belmont Report*. Researchers must protect human data sources by fully complying with the *Belmont Report*'s principles and by practices supporting informed consent, ensuring participant respect, and minimizing harm (U.S. Department of Health and Human Services, 1979).

Participants

The eligibility requirements of participants in this study were members of the social networking sites LinkedIn and Facebook who telecommuted at least 1 day per week. The participants were accessible through my LinkedIn and Facebook associations. LinkedIn is a professional social networking site with more than 175 million users (Claybaugh & Haseman, 2013). Facebook is the most popular social networking site, with more than two billion users (Mariani & Mohammed, 2014). Through my associations in these social media sites, I had access to approximately 40,000 people.

Thus, I expected a 30% to 60% response rate based on previous studies (Aboelmaged & El Subbaugh, 2012; Caillier, 2014; Teh, Ong, & Loh, 2012; Vink et al., 2012). Only 77 participants responded to the survey, which was significantly less than I expected based on the expected response rate of at least 30% and the number of people who could potentially access the survey. Participants in this study were not vulnerable, and all participants gave their implied consent based on the consent form (see Appendix A), as suggested by Jacob and Furgerson (2012).

Research Method and Design

A research problem and research questions are factors that researchers use to determine the research method and design (Zachariadis, Scott, & Barrett, 2013). The design of this study was a quantitative correlational study. To test the hypothesis, I collected data using a questionnaire and scored the responses on a Likert-type scale.

Research Method

The method for this project was quantitative. Researchers use quantitative research methods to test if a relationship exists between variables (Bryman, 2012). A quantitative research method was suitable for this study because the intent was to examine if a relationship exists between multiple variables. This study involved examining the relationship between age, gender, and job satisfaction among telecommuters.

Research Design

A correlational design was suitable for this study for several reasons. First, researchers use quantitative studies most often to compare and contrast individual

variables (Mekonnen, 2013). Second, correlational studies are suitable for determining the impact of one variable upon another (Mira et al., 2012). The majority of literature reviewed on the correlation between (a) age, (b) gender, (c) job satisfaction, and (d) telecommuting was from nonexperimental surveys. Researchers use surveys when the focus of a research question is who or what (Yin, 2013). A correlational design supports the use of self-report surveys to measure all variables (Quratulain & Khan, 2015).

Population and Sampling

The population for this study was telecommuters who were members of LinkedIn and Facebook. Participant selection included a nonprobability sampling technique. Nonprobability sampling occurs when the selection probability of the participants is unknown (Acharya et al., 2013). The most commonly used form of nonprobability sampling is the convenience or purposive sampling technique (Acharya et al., 2013). Known for ease of use, low cost, flexibility, and participant selection as needed, the sampling technique was the best option for this study. For the purpose of this study, self-selection was suitable to obtain the necessary respondents. This sampling method provided a random sample, as participants chose whether they participate, and each person who was a member of my LinkedIn or Facebook community had the same opportunity to participate. Additionally, I used the demographic section of the survey to define the individual characteristics of each participant in the survey.

I calculated the number of respondents required to respond using the G*Power 3.1 software. The required sample size was 77 respondents based on a core population of thousands, the predictor variables, and an effect size equal to $f^2 = .15$ and $\alpha = .05$ (Faul et

al., 2009). By placing a request for survey participants and a link to Survey Monkey for participants to gain access to the survey on my pages and on some groups I am associated with on LinkedIn and Facebook, I had access to approximately 40,000 individuals. Those who accessed the survey provided their implied consent to participate in the study.

Ethical Research

Several factors determine the ethics of a study, such as risk to participants, informed consent requirements, and competency of the researcher (Vayena & Tasioulas, 2013). I took the following steps to ensure I met all the ethical principles within this study. First, I posted an invitation to participate in the community by explaining the survey, describing the type of participants needed, and providing access to the Survey Monkey link to the survey. The community post consisted of the consent form and was titled: Survey Participants Wanted. The disclosure, file security, and material destruction protocols complied with Institutional Review Board (IRB) procedures at Walden University and the social networking sites.

All participants received information regarding their right to withdraw from the study at any time without penalty by exiting the survey prior to submission. Those who chose to participate received information regarding how I would keep their identity confidential and that all data presented were in an aggregate form. Additionally, I notified participants that by clicking the survey link, they were providing their implied consent to participate in the study. Upon completion of the survey, I posted a brief summary of the results to the community and placed all aggregated anonymized data on a thumb drive.

The password-protected thumb drive is in a secure safe, and I will destroy it after 5 years, in accordance with IRB-C and IRB-W standards, to protect the rights of participants. Only I will maintain access to the safe. Members of the Walden IRB granted permission to conduct this study. Thus, the final stage in ensuring the research study was ethical was a final review by the Walden IRB. The IRB review number associated with this study was 07-22-15-0138697. I took all possible measures to ensure I met all ethical principles.

Instrumentation

The instrument for data collection was an online survey administered using Survey Monkey as a web host. Survey Monkey is an online survey system that users can use to create surveys and gather the data results (Waclawski, 2012). The survey contained demographic questions and questions from the MSQ short form (Wanous, 1973; see Appendix B). The purpose of the MSQ is to measure an employee's level of job satisfaction. Authorized use of the MSQ for noncommercial research and educational purposes without written permission appears in Appendix C.

The MSQ was chosen due to its high level of validity when predicting general job satisfaction. The MSQ includes a Likert-type scale of 1 to 5, with 1 being *not satisfied* and 5 being *extremely satisfied*. Scoring on this scale involves adding the total from the 20 questions for a maximum total of 100 points, which equates to being highly satisfied. Researchers have used the MSQ in research on populations in India (Das, Kumari, & Pradhan, 2015), South Africa (Abugre, 2014), and Thailand (Sungkhawan, Mujtaba, Swaidan, & Kaweevisultrakul, 2012). Many researchers in the United States have

effectively used the MSQ as a measurement of job satisfaction (Ghazzawi, 2011; Sigrist, 2012).

Using a well-known instrument, the MSQ ensured the reliability and the validity of the instrument (Dhammika, Ahmad, & Sam, 2012). Gundogdu, Serdar, Yucel, Kucuk, and Karatas (2012) found the reliability of the survey to be .70. Additionally, Abugre (2014) determined the reliability of the MSQ to be acceptable whether using the short form or the long form. I used Cronbach's alpha as the means to test the reliability of the survey. The results are part of the findings in this study.

Researchers measure internal validity of a survey by whether the questions within the survey can explain the outcome of the research. In other words, internal validity is confirmation that the questions asked by the MSQ can predict level of job satisfaction. Performance, also known as construct validity, was the primary method of determining validity for the MSQ. Performance in previous studies had indicated that construct validity of the MSQ is acceptable (Abugre, 2014; Gundogdu et al., 2012).

External validity is a measure by which a researcher can generalize the results of any given instrument (Lancsar & Swait, 2014). In other words, external validity is the ability to generalize the findings of a study over others populations that were not an original part of the study. The external validity of the MSQ is evident in the test performance to measure job satisfaction consistently over time (Masvaure, Ruggunan, & Maharaj, 2014).

I combined the survey with a series of demographic questions to create a unique questionnaire, as shown in Appendix D. Survey Monkey was the collection point of the

questionnaire. I uploaded the questionnaire as shown in Appendix D into Survey Monkey as the instrument, gathered the raw data from the questionnaire, and maintained it within Survey Monkey for accessibility. I also analyzed the data using the Statistical Package for the Social Sciences (SPSS) and printed and stored the result of the data analysis.

Data Collection Technique

I hosted and administered the survey online using the Survey Monkey website. Participants received an invitation to participate via my post to my LinkedIn and Facebook pages and communities and clicked into the survey if they consented to the study and elected to answer the questions. After the participants had accessed the survey, the questions appeared one by one until the participant had answered them all. Upon completion, the participants received a note of thanks, and the survey window closed. Online surveys are becoming the norm of survey research (Reips, 2012). Additionally, online surveys in quantitative research are becoming the most effective and efficient way to collect data (Roberts & Allen, 2015). Online surveys have several benefits, including ease of use, rapid deployment, low cost, and quick response time (Patterson, 2015). However, some disadvantages include low response, sample bias, fear or distrust of technology, and the validity of pen and paper questionnaires converted to online questionnaires (Hunter, 2012). I addressed and mitigated these disadvantages by using the MSQ short form, which had only 20 questions and was a validated method for determining job satisfaction. I did not conduct a pilot study, as I used an established survey.

Data Analysis

The guiding research question was as follows: What is the relationship between the level of telecommuting, gender, age, and employee job satisfaction? The hypotheses tested were as follows:

H_0: No relationship exists between the linear combination of the level of telecommuting, gender, age, and employee job satisfaction.

H_a: A relationship exists between the linear combination of the level of telecommuting, gender, age, and employee job satisfaction.

To analyze the data, I extracted the data from Survey Monkey and imported them into the SPSS application to perform a multiple linear regression among the variables. The multiple linear regression analysis was suitable based on the criteria that the study involved examining the correlations between multiple predictor variables and a dependent variable (Chen, Li, Wu, & Liang, 2014). Additionally, I built a partial correlation table to look at the linear relationship between the independent variables within the same set (Green & Salkind, 2013). I did not choose other types of statistical analysis, as they would not meet the needs of this study. Specifically, bivariate linear regression was not suitable, as it predicts one variable's effect on another and not multiple variables as with this study (Green & Salkind, 2013). Data in Table 2 reflect the correlation between the study variables and the related hypothesis and survey questions. To perform the multiple linear regressions analysis, I input the data into SPSS, and the outcome of the analysis was the instrument used to test the validity of each hypothesis.

Table 2

Multiple Linear Regression Analysis Variables

Variable name	Variable type	Related hypothesis	Survey Questions
Job satisfaction	Dependent	All	1-20
Level of telecommuting	Predictor	All	C
Age	Predictor	All	A
Gender	Predictor	All	B

Part of the regression analysis was a significance test to evaluate the validity of all hypotheses. Multiple linear regression analysis requires validation of several assumptions: (a) linearity, (b) normality, (c) presence of outliers, (d) multicollinearity, and (e) homoscedasticity (Green & Salkind, 2013). A scatterplot showed the points of the dependent variable and the predictors to validate the assumptions. If this study violated any of these assumptions, then I would apply bootstrapping. However, in this study, no assumptions were violated; thus, I did not apply bootstrapping. Upon completion of this analysis, I expected to see a clear picture of whether the level of telecommuting, age, and gender predicts of job satisfaction among telecommuters.

Reliability and Validity

Reliability and validity are essential components of quality research (Darawsheh, 2014). A study instrument's estimated repeatability, or the ability to deliver the same results consistently, defines the reliability of a study. The MSQ's performance, also known as its construct validity, primarily determined its reliability. To confirm the reliability of the MSQ, I used Cronbach's alpha $\alpha = .05$ as a measure to test the reliability of the survey. Several researchers determined the MSQ is reliable (Abugre, 2014; Gundogdu et al., 2012). The correlational design included a focus on relationships in

place of causation and involved eliminating validity concerns regarding causal ties between independent and dependent variables (Nimon & Oswald, 2013).

External validity is a measure by which a researcher can generalize the results of any given instrument (Lancsar & Swait, 2014). Thus, external validity is the ability to generalize the findings of a study over entire populations, that were not an original part of the study. As generalization was one of the limitations of this study based on the population, this section included a discussion on the external validity of the MSQ and its ability to generalize. Thus, generalization was an expectation. Performances in previous studies indicated the construct validity of the MSQ is acceptable (Gundogdu et al., 2012).

Transition and Summary

Section 2 of the study included a detailed explanation of the planned research method, data analysis, and indicators of quality. This section included a detailed discussion of the participants, data collection techniques, data analysis techniques, and other details regarding the implementation of the study. The section was the blueprint for conducting this study. Section 3 includes the results of the study, a detailed discussion of the findings, a discussion of the findings, the application to professional practice, and the implication for social change. Section 3 also includes recommendations for further study and my reflections on the doctoral study journey.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this quantitative correlation study was to inform business leaders of the relationship between the level of telecommuting, gender, age, and employee job satisfaction using the theory of purposeful work behavior, which states that an individual's characteristics can determine work behavior given that the individuals is striving to meet higher order goals. The research question answered in this study was as follows: What is the relationship between the level of telecommuting, gender, age, and employee job satisfaction? The hypotheses tested were the following:

H_0: No relationship exists between the linear combination of the level of telecommuting, gender, age, and employee job satisfaction.

H_a: A relationship exists between the linear combination of the level of telecommuting, gender, age, and employee job satisfaction.

To answer the research question, I conducted an online survey using my Facebook and LinkedIn pages to attract potential participants. The results of the survey confirmed that telecommuters, in general, have a high job satisfaction rate. To test the hypotheses, I first conducted an independent-sample *t* test to measure the differences between genders, followed by a one-way analysis of variance (ANOVA) to measure the differences between age groups and then level of job satisfaction. Finally, I conducted a multiple linear regression analysis to determine if age, gender, and level of telecommuting are predictors of job satisfaction. The result of these analyses reflected that no relationship existed between any of the variables and job satisfaction. Thus, I did

not reject the null hypothesis. Not rejecting the null hypothesis does not lead to the conclusion that no association or differences exist, but instead leads to the conclusion that the analysis did not detect any association or difference between the variables or groups (Simon & Goes, 2013). A detailed review of the findings appears below.

Presentation of the Findings

In this study, a Mann-Whitney U test, Kruskal-Wallis test, a correlation table, and multiple regression analysis were the measures used to test the null hypothesis. The purpose of the tests was to determine if any correlation existed between each group within the variables or between the variables themselves. Furthermore, I determined if any correlation or relationship existed between the dependent variable of job satisfaction and the predictor variables of gender, age, and level of telecommuting.

On July 23, 2015, I posted the consent form with a link to the survey on my LinkedIn and Facebook pages. Upon clicking the link, participants could see the consent form, and by clicking next, all participants provided their implied consent to participate with an understanding that they could exit the study any time. Seventy-seven participants chose to continue and completed the survey, which was sufficient according to the G*Power calculation (Faul et al., 2009). Sixty-five participants completed the survey.

Demographics

Respondents answered three demographic questions on their gender, age range, and the number of days per week they telecommuted. All 77 respondents answered the demographic questions. After completing the demographic questions, the 20 MSQ questions appeared to the respondents. Of the 77 respondents, 12 choose not to answer

the MSQ questions, which left 65 completed surveys for the data set, for an overall completion rate for the survey of 84%. Thus, to ensure the integrity of the study, I removed the 12 respondents who did not answer the MSQ questions from the analysis. The results reflect the analysis based on the 65 completed responses. Of the 65 respondents 62% (n = 40) were female and 38% (n = 25) were male. A majority of the respondents were aged 45–65 (n = 37, 57%). No respondents were in the 28 and under age range. Forty percent of the respondents telecommuted 5 days per week (n = 26), and 23% (n = 15) of the respondents replied they only telecommuted 1 day per week. Table 3 contains the demographic statistics.

Table 3

Demographic Statistics

Predictor variable	*n*	%
Gender		
Female	40	62
Male	25	38
Age range		
28 and under	0	0
29-44	18	28
45-65	41	63
66 and older	6	9
Level of telecommuting		
1 day	15	23
2 days	11	17
3 days	11	17
4 days	7	11
5 days	26	40

Job Satisfaction

The MSQ measures job satisfaction on three scales: intrinsic, extrinsic, and general satisfaction. The combination of specific questions within the MSQ defined each

scale. Intrinsic factors are internal and include such elements as feelings of autonomy and responsibility, whereas extrinsic factors are external and include such elements as pay and working conditions (Ismail & El Nakkache, 2014). Table 4 includes a graphic representation of which questions defined each scale. An excerpt on scoring from the MSQ manual appears in Appendix C.

Table 4

Intrinsic and Extrinsic MSQ Question Mapping

Scale	Survey questions points (5 points each)
Intrinsic	1, 2, 3, 4, 7, 8, 9, 10, 11, 15, 16, 20 60
Extrinsic	5, 6, 12, 13, 14, 19 30
General satisfaction	All Questions (1-20) 100

Note. General satisfaction includes Questions 17 and 18, which do not appear in the intrinsic or the extrinsic scales, and is further reflected in the difference in point values.

Determining general job satisfaction levels involves adding the scores from each of the questions for a total. As each question was worth a maximum of 5 points, the total possible points were 100 (20 questions × 5 points each). Thus, a response of all 4s on the 20 questions would yield a score of 80 out of 100 or 80%. The scores can then represent a percentage of job satisfaction or undergo a comparison to others in similar job descriptions via a normative score. The manual provides a list of normative scores for certain job descriptions for comparison; the closest job description for comparison to a telecommuter was an engineer (see Appendix C). The normative data for an engineer indicated that a score equal to or above 48.53 for intrinsic, 21.32 for extrinsic, and 77.88 for general satisfaction suggested that individual had a high level of satisfaction with his or her job. The MSQ manual suggested that the best way to interpret the results is using the percentile chart for a profession. Noting that a score of 75% or higher would suggest

a high level of satisfaction, a score of 74% to 26% would indicate average satisfaction and a score of 25% and below would indicate a low level of job satisfaction.

To determine the general satisfaction level of all telecommuters, I summed the weighted average of all responses for each question for each scale. The results of each calculation, the associated points, and the resulting level of satisfaction appear in Table 5.

Table 5

General Satisfaction Level of Telecommuters

Scale	Mean	Points	%
Intrinsic	50.51	60	84
Extrinsic	22.78	30	76
General satisfaction	81.77	100	82

Note. General satisfaction includes Questions 17 and 18, which do not appear in the intrinsic or the extrinsic scales, and is further reflected in the difference in point values.

The results indicate that telecommuters have a general satisfaction rating of 82%, which is a high level of job satisfaction. Additionally, the intrinsic scale included high job satisfaction at a mean of 48.53 and the results of this study determined a mean of 50.51; thus, telecommuters have high job satisfaction levels with intrinsic factors. Furthermore, the extrinsic scale included high job satisfaction at a mean of 21.32, and the results of this study determined a mean of 22.78; thus, telecommuters have high job satisfaction levels with extrinsic factors as well. Therefore, in general, telecommuters have a high level of job satisfaction in all measurable categories.

Gender Analysis

I conducted a Mann-Whitney U analysis to examine the differences in job satisfaction between men and women. The Mann-Whitney is a nonparametric test that tests whether medians differ significantly between groups on an ordinal dependent

(Green & Salkind, 2013). The Whitney U test is the alternative test to the independent sample *t* test. The results of the test are in Table 6 and in Figure 1. The results indicated there is no significant difference in job satisfaction between women ($M = 80.20$, $SD = 11.30$) and men ($M = 84.24$, $SD = 15.56$), $U = 364$, $p = .07$, and both men and women who telecommuted had a high level of satisfaction.

Table 6

Mann-Whitney U Test Statistics

	Job satisfaction score
Mann-Whitney U	364.000
Wilcoxon W	1184.000
Z	-1.835
Asymptotic significance (2-tailed)	.066

Note. Grouping variable: gender.

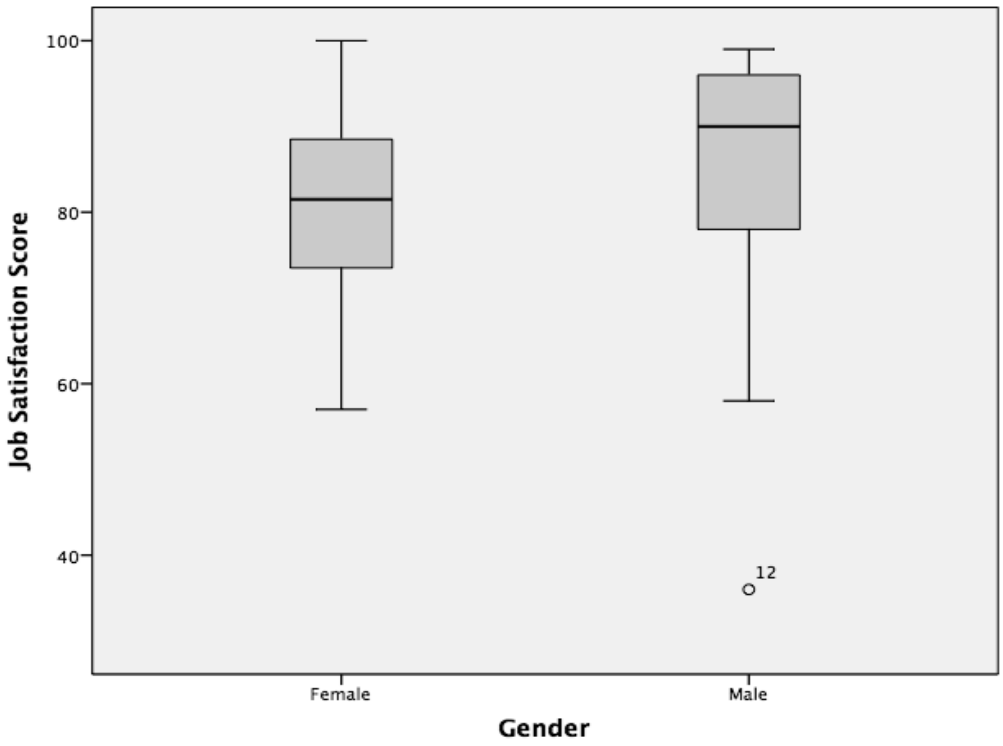

Figure 1. Results of the Mann-Whitney analysis.

Age Group Analysis

To test the difference between age groups, I conducted a Kruskal-Wallis test. The Kruskal-Wallis *H* test is a nonparametric test used in place of a one-way ANOVA. A Kruskal-Wallis test is for testing differences between groups of two or more within an independent variable on an ordinal dependent variable (Green & Salkind, 2013). The results of the test statistics are in Table 7 and in Figure 2.

Table 7

Kruskal-Wallis H Test Statistics for Age

	Job Satisfaction Score
Chi-square	3.072
df	2
Asymptotic significance (2-tailed)	.215

Note. Grouping variable: age group.

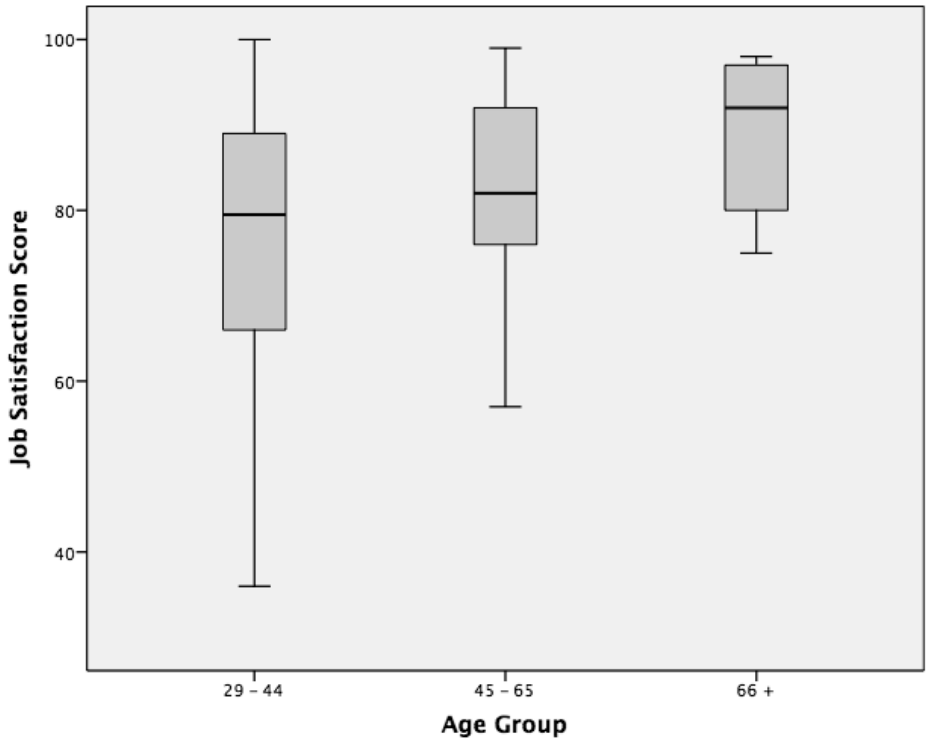

Figure 2. Results of the Kruskal-Wallis test on age groups.

The results showed that no statistically significant difference existed in job satisfaction levels between age groups, $\chi^2(2) = 3.072$, $p = .215$, with a mean rank job satisfaction score of 27.97 for age group 29-44, 33.72 for age group 45-65, and 43.17 for age group 66+. Therefore, no difference was found in job satisfaction levels by age group, which meant that no one age group had a higher or lower level of job satisfaction than any other group. As noted above, no respondents were in the 28 and under category. All age groups had a high level of job satisfaction.

Level of Telecommuting Analysis

To test the level of telecommuting (based on the number of days per week participants telecommuted) on job satisfaction, I performed an additional Kruskal-Wallis test. The outcome of this test appears in Table 8 and a graphical representation appears in Figure 3.

Table 8

Kruskal-Wallis H Test Statistics for Level of Telecommuting

	Job satisfaction score
Chi-square	6.091
df	4
Asymptotic significance (2-tailed)	.192

Note. Grouping variable: level of telecommuting.

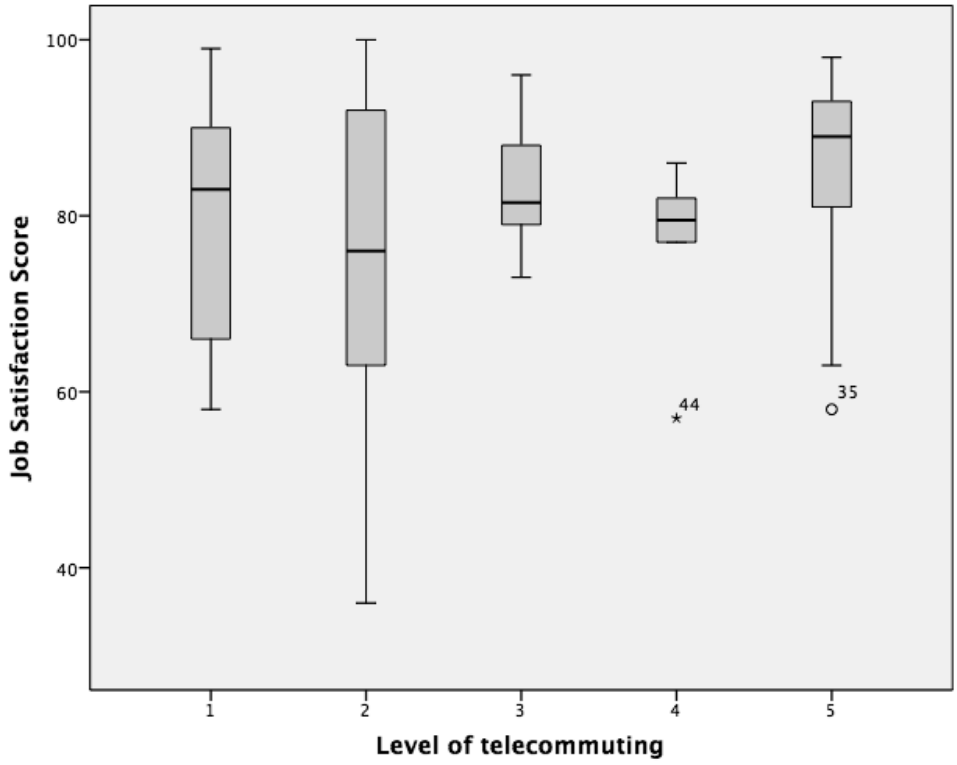

Figure 3. Results of the Kruskal-Wallis test on level of telecommuting.

The results again showed that no statistically significant difference was found in job satisfaction levels and the number of days a person telecommutes, $\chi^2(4) = 6.091$, $p = .192$, with a mean rank job satisfaction score of 31.32 for 1 day, 26.15 for 2 days, 31.75 for 3 days, 23.17 for 4 days, and 39.54 for 5 days. Thus, as reflected with both gender and age, the fact that no significant difference existed in job satisfaction levels by level of telecommuting indicated that regardless of how many days a person telecommutes, there is no change in that person's level of job satisfaction.

This result indicated that level of telecommuting did not have a statistically significant impact on job satisfaction levels. However, this result brought to question whether a pattern existed between the levels of telecommuting. For example were

telecommuters who telecommuted 5 days per week happier than those who telecommuted 1 day per week. A chi-square analysis was suitable to determine if a relationship existed between categorical variables. That is, if the levels of telecommuting were independent from each other. No relationship emerged between the intervals, as shown in Table 9.

Table 9

Level of Telecommuting Interval Relationship

	Value	df	Sig.
Pearson chi-square	140.410[a]	128	.214
Likelihood ratio	119.717	128	.687
Linear-by-linear association	3.133	1	.077
N of valid cases	65		

[a] 165 cells (100%) had expected count less than 5. The minimum expected count was .09.

The results of the chi-square test reflected that $\chi(1) = 140.410$, $p = .214$, which indicated that no significant difference was found between the intervals. Thus, I found no patterns between the levels of telecommuting intervals. The levels of telecommuting appeared to be independent from each other.

Correlation Table

I built a correlation table to look at the correlations between the predictor variables and the dependent variables. The Pearson correlation reflects any significant correlation among the variables. Table 10 reflects the SPSS output for the correlation analysis.

Table 10

Correlations

	Gender	Age group	Level of telecommuting	Job satisfaction score
Gender				
Pearson correlation	1	.088	-.077	.151
Sig. (2-tailed)		.485	.540	.230
Age group				
Pearson correlation	.088	1	.287*	.247*
Sig. (2-tailed)	.485		.020	.047
Level of telecommuting				
Pearson correlation	-.077	.287*	1	.221
Sig. (2-tailed)	.540	.020		.077
Job satisfaction score				
Pearson correlation	.151	.247*	.221	1
Sig. (2-tailed)	.230	.047	.077	

Note. $N = 65$.

* Correlation is significant at the .05 level (2-tailed).

The results of the correlation table indicated gender was not significantly correlated to any of the other predictor variables or job satisfaction. However, age emerged as significantly correlated to job satisfactions at a significance level of .047. Furthermore, a correlation existed between level of telecommuting and age at a .02 significance level.

Regression Analysis

For multiple linear regression analysis to be valid, data must meet certain assumptions. As noted in Section 2, the assumptions were (a) linearity, (b) normality, (c) presence of outliers, (d) multicollinearity, and (e) homoscedasticity. Researchers confirm linearity, normality, and presence of outliers using a normal P-P scatter plot. Linearity

confirms a linear relationship exists among the variables, normality confirms a normal distribution among the data points, and presence of outliers confirms no data points appear outside the norm. Lack of validation of these assumptions can lead to errors within the analysis. The scatter plots are in Figures 4, 5, 6 and 7.

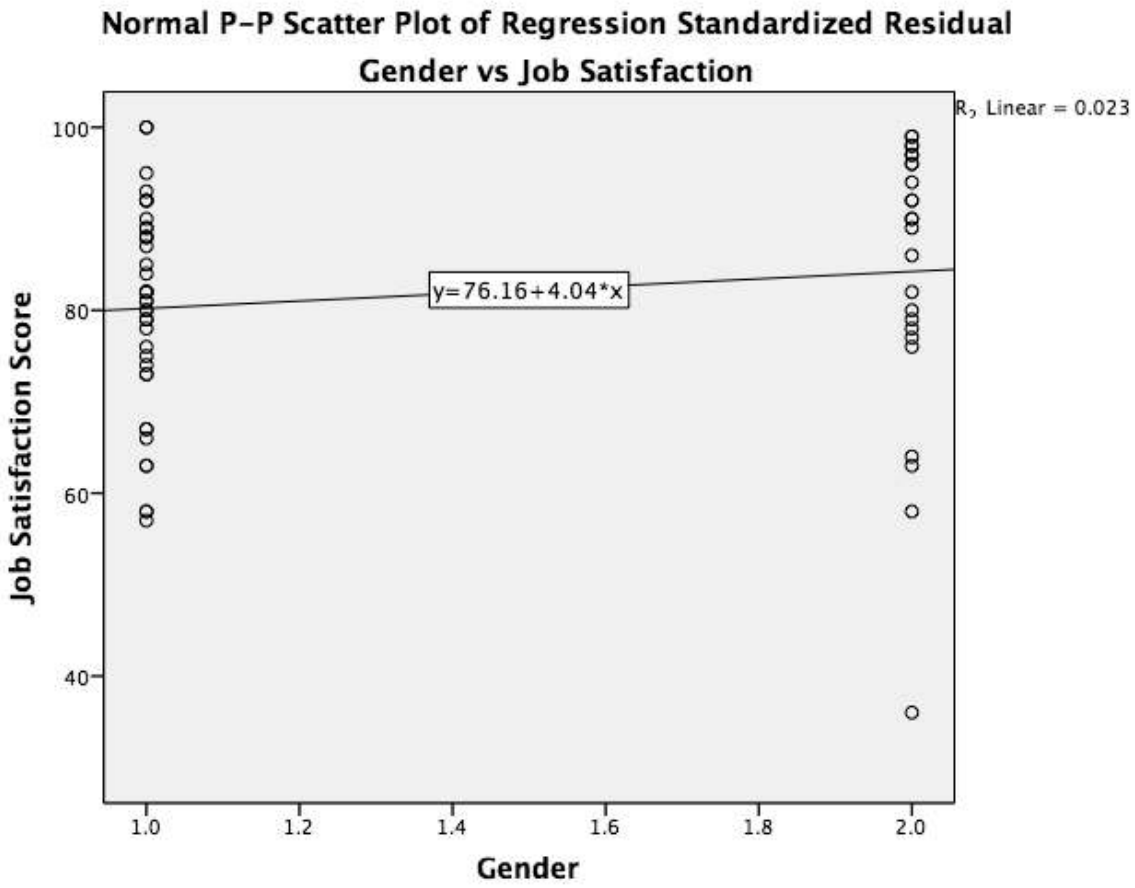

Figure 4. P-P scatter plot of gender versus job satisfaction.

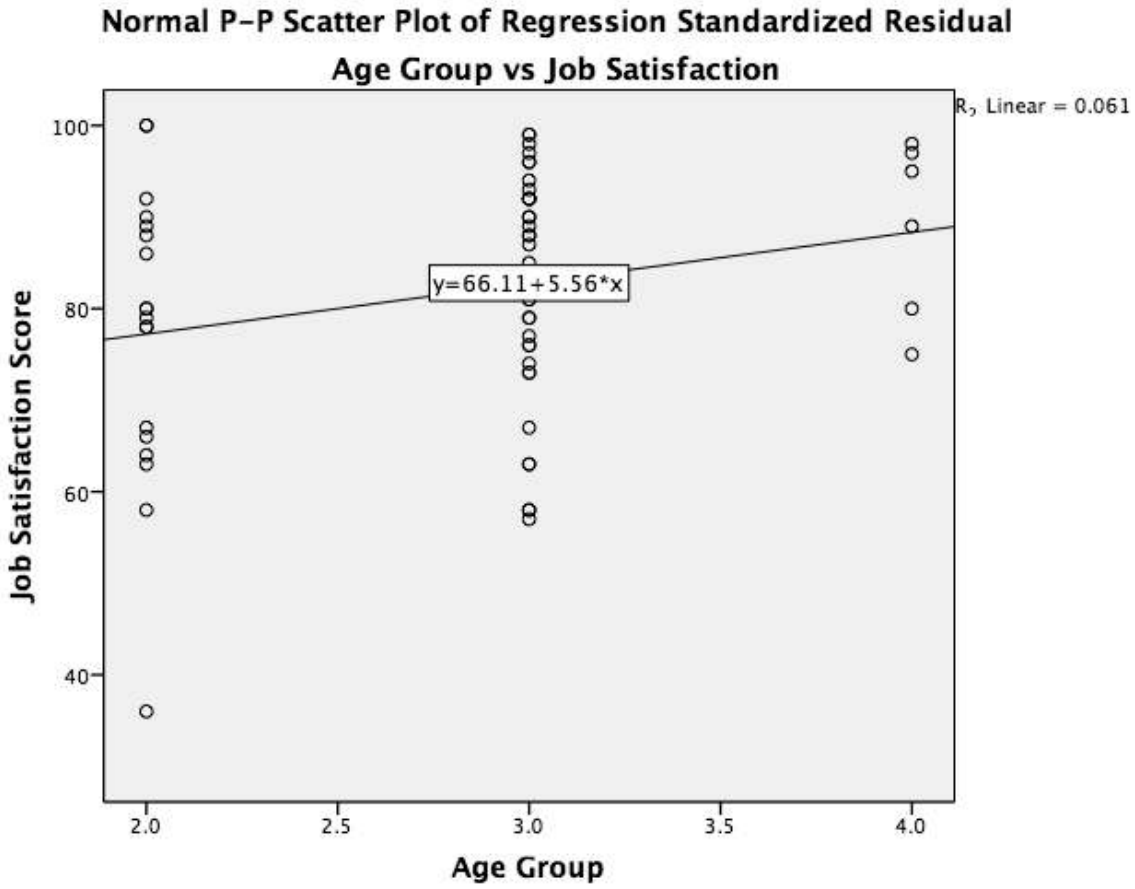

Figure 5. P-P scatter plot of age group versus job satisfaction

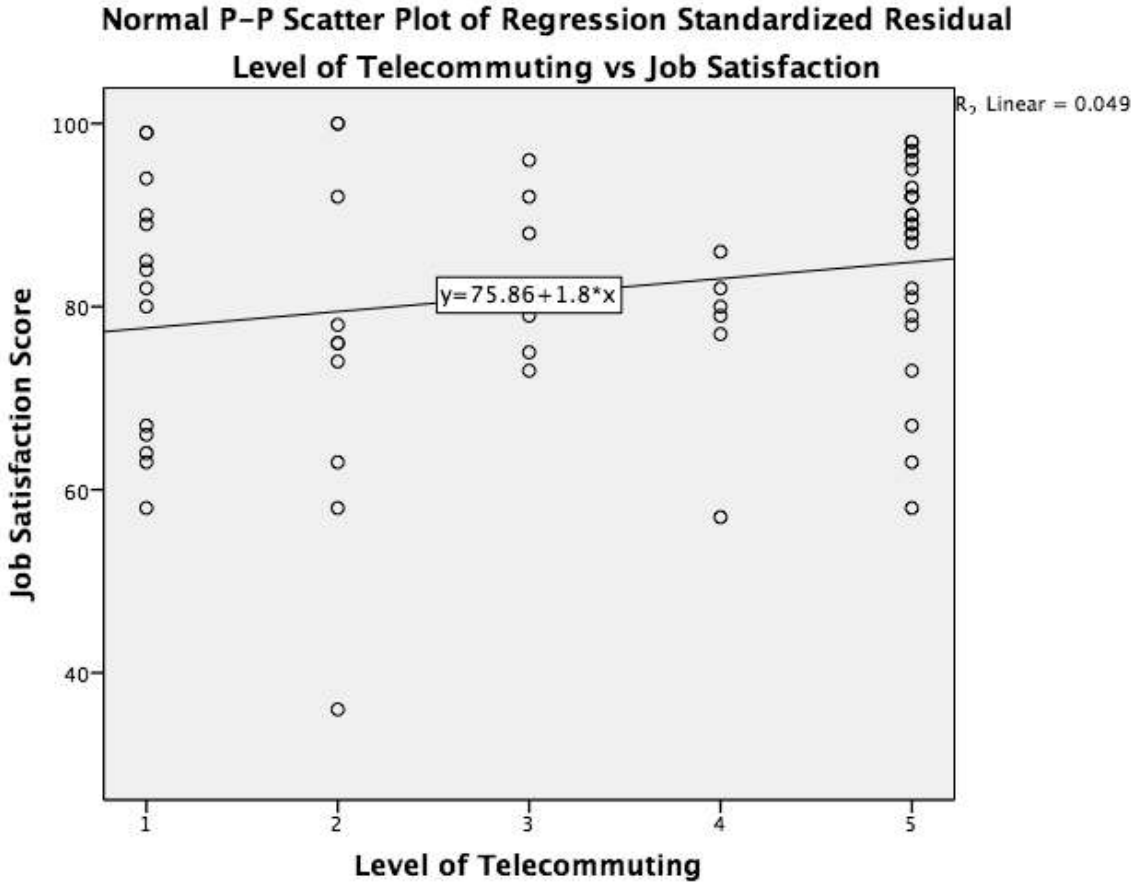

Figure 6. P-P scatter plot of level of telecommuting versus job satisfaction.

The results of the scatter plots indicated a weak linear relationship with $r^2 = .023$ for gender, $r^2 = .061$ for age, and $r^2 = .049$ for level of telecommuting. This information confirmed that no violation occurred to the assumptions of linearity, normality, or presences.

Multicollinearity occurs when a high degree of correlation exists between the independent variables (Elias, Smith, & Barney, 2012). I validated multicollinearity using variance inflation factor (VIF) in Table 11.

Table 11

Coefficients Table

	95% confidence interval for B	Collinearity statistics	
	Upper bound	Tolerance	VIF
(Constant)	77.573		
Gender	10.527	.981	1.020
Age range	9.817	.905	1.105
Level of telecommuting	3.533	.907	1.103

The results indicated a VIF = 1.020 for gender, 1.105 for age group, and 1.103 for the level of telecommuting. As all the results were below the threshold of 10, there was no evidence of multicollinearity.

Homoscedasticity is the assumption that across all observations in the data set, error variance is consistent (Aslam, Riaz, & Altaf, 2013). I validated the homoscedasticity assumption using a scatterplot of regression standardized residual versus regression standardized predicted value.

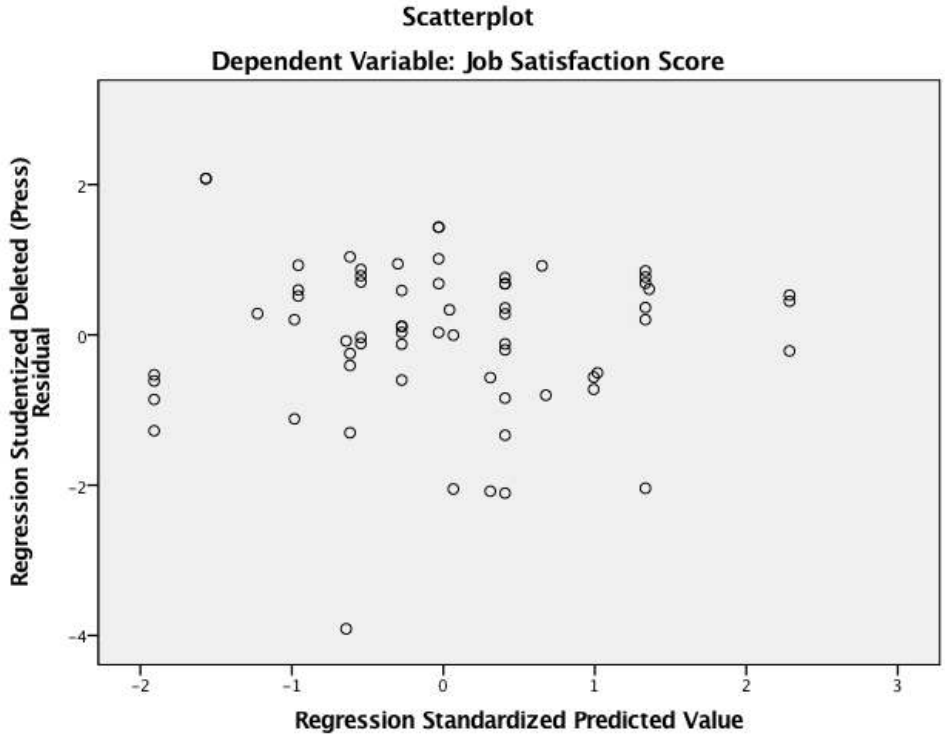

Figure 7 . Residual value versus predicted value.

The scatter plots indicated no visual patterns existed and thereby suggested that the variables did not violate the assumption of homoscedasticity. The final determination was that the overall study did not violate any assumptions. Thus, I proceeded with the multiple regression analysis.

The conducted the multiple linear regression analysis using the general satisfaction scale. The purpose of this test was to determine if a correlation existed between the dependent variable of job satisfaction and the predictor variables gender, age, and level of telecommuting. The mean and standard deviation for each variable are in Table 12.

Table 12

Descriptive Statistics

Variables	*M*	*SD*
Job satisfaction (independent)	81.75	13.133
Gender (predictor)	1.38	.490
Age range (predictor)	2.82	.583
Level of telecommuting (predictor)	3.28	1.615

The multiple linear regression analysis consisted of three parts. First was the model summary used to determine the adjust *R*-squared value, followed by the ANOVA test. Researchers conduct the ANOVA test to determine the relationship between factors and dependent variables (Green & Salkind, 2013). The final piece of the analysis was the coefficients table. The coefficients table is used to find any correlations between the variables (Green & Salkind, 2013). Table 13 reflects the results of the ANOVA test.

Table 13

Results of the ANOVA [a] *test*

	Sum of squares	*df*	Mean square	*F*	Sig.
Regression	1184.163	3	394.721	2.443	.073[b]
Residual	9853.898	61	161.539		
Total	11038.062	64			

[a] Dependent variable: job satisfaction score.
[b] Predictors: (Constant), level of telecommuting, gender, and age group.

The model summary reflected an adjusted $r^2 = .063$, which indicated that the model only predicted 6% of the variable variation in job satisfaction. The ANOVA test reflected no statistical significance, $F(3,61) = 2.4$, $p > .05$. This is further confirmed in Table 14.

Table 14

Coefficients Table [a]

	Unstandardized coefficients		Standardized coefficients		
	B	Std. error	Beta	*t*	Sig.
(Constant)	59.901	8.838		6.778	.000
Gender	3.984	3.272	.149	1.218	.228
Age range	4.094	2.862	.182	1.430	.158
Level of telecommuting	1.468	1.033	.181	1.421	.160

[a] Dependent Variable: Job Satisfaction Score

The coefficients table reflected a *p* value of .228 for gender, .158 for age range, and .160 for the level of telecommuting. A *p* value less than .05 reflects statistical significance, but all the variables had a $p > .05$. Thus, none of the variables indicated any statistically significant impact to job satisfaction levels. Researchers would typically suggest not rejecting the null hypothesis because gender, age, and level of telecommuting significantly affect the level of job satisfaction among telecommuters. However, this is contradictory to the findings in the correlation analysis.

The correlation analysis indicated that a correlation existed between age and job satisfaction. However, this correlation was not apparent in the multiple linear regression analysis. One reason for this could be the impact of the correlation between age and level of telecommuting. There was no evidence of multicollinearity using VIF. This minor correlation could affect the results of the regression analysis. To determine if multicollinearity is truly a factor and if a relationship does exist between age and job satisfaction, I conducted an additional multiple regression analysis excluding level of telecommuting and gender because they had no correlation with job satisfaction. The

results of the multiple linear regression analysis between age and job satisfaction are in Table 15.

Table 15

Results of the Second ANOVA [a] *Test*

	Sum of squares	*df*	Mean square	*F*	Sig.
Regression	672.593	1	672.593	4.088	.047[b]
Residual	10365.469	63	164.531		
Total	11038.062	64			

[a] Dependent variable: job satisfaction score. [b] Predictors: (Constant), age group.

This ANOVA test confirmed the finding of the correlation table, which validated that age group is a significant predictor of job satisfaction. Furthermore, the adjusted r^2 value = .049 indicated that age group accounted for about 5% of the variability of job satisfaction. Thus, I rejected the null hypothesis, as a relationship exists between age and job satisfaction.

The findings indicated that telecommuters generally have a high level of job satisfaction and age is a significant predictor of job satisfaction. However, level of telecommuting and gender are not predictors of job satisfaction. Additionally, the findings indicated that a significant relationship does exist between age and level of telecommuting.

Applications to Professional Practice

The findings from this study added to the existing knowledge base by expanding the understanding of job satisfaction among telecommuters and the variables that affect job satisfaction. Researchers had considered the predictor variables independently (Ghazzawi, 2011; Khan et al., 2013; Malik, 2011a), but I looked at the impact of all the

variables individually and simultaneously, which other researches had not examined. Many researchers had considered the predictor variables in this study as control variables only (Caillier, 2013; Golden & Fromen, 2011). Thus, the predictor variables were constant and therefore had no impact on the results of the study. The results of this study indicated that researchers should consider gender as a control variable only, as it does not affect the results and had no relationship with job satisfaction. Additionally, level of telecommuting could be a control factor if age is not a variable in the analysis. No significant relationship emerged between level of telecommuting and job satisfaction or among the interval levels of telecommuting. This study contributes to existing literature, as I confirmed that telecommuters generally have a high level of satisfaction and age is a strong predictor of job satisfaction and the level of telecommuting.

Each of the previously noted points indicated that this study contributes to the existing literature and business leaders and human resources professionals could use these findings to make decisions about their organizational policies on telecommuting. Madsen (2011) noted that business leaders need to understand the factors and influences that affect an employee's performance. Thus, as business leaders and human resources professionals are making decisions about their organizational policies relating to telecommuting, it is important that they understand that telecommuters have high levels of job satisfaction, as this could be a determining factor in how organizational leaders are implementing telecommuting policies. Additionally, knowing that telecommuters have high levels of job satisfaction may lead business leaders to increase job satisfaction through telecommuting programs.

Understanding that age is a predictor of job satisfaction dispels a common misconception that older generations are not technology savvy and thus would not benefit from telecommuting opportunities. Furthermore, an understanding that gender does not affect job satisfaction levels might help business leaders and human resources professionals when implementing telecommuting programs. Knowing the level a person telecommutes does not affect the level of job satisfaction but may help leaders define policies on how many days employees can telecommute, and knowing that a correlation exists between age and level of telecommuting might suggest to business leaders that age could be a predictor of the number of days that employees might want to telecommute.

Finally, this study involved an attempt to validate the theory of purposeful work behavior by incorporating individual demographics such as age and gender into individual characters traits. The results of this study indicate that age was a predictor of work behavior or job satisfaction, but gender was not. Thus, this study could not confirm the validity of this theory. Knowing that telecommuters have a high level of job satisfaction indicates that telecommuting arrangements are meeting the four higher order goals; otherwise, the level of job satisfaction would be lower. The results of this study provided additional insights on telecommuters' job satisfaction.

Implications for Social Change

The implications for social change include environmental impacts, work–life balance, and corporate cost savings. The general finding that telecommuters had a high level of job satisfaction provides justification for organizational leaders implementing new telecommuting programs or increasing their existing programs. This potential

increase in the number of telecommuters may yield significant benefits for corporations, employees, and society (Madsen, 2011).

The first implication for social change is the environment. Telecommuting has a strong impact on the environment by decreasing emissions and commuting costs (Ruth, 2011). An increase in the number of telecommuters means that there are fewer cars on the road. Fewer cars on the road decreases the amount of wear and tear on the roads, the amount of fuel and oil used, congestion on the roadways, and lessens air pollution, which results in improved air quality, decreased commute times for those who must commute, and less need for construction to expand and repair roads; all of which benefit society.

Second, work–life balance is an implication for social change, as employees who telecommute may be able to better balance their work and family. For example, a mother who drops her children off at 7 am, then drive an hour in traffic, work eight hours with an hour lunch, then drive another hour home in traffic and then has to pick up her children. All before starting dinner may look for alternatives, such as fast food, which leads to obesity in kids. However, employees who do not commute might have time to make dinner for their families. Telecommuting may also lead to more flexibility in employees' ability to care for their family or themselves and not have to take time off from work. Thus, employers do not experience a loss in productivity due to absenteeism (Noonan & Glass, 2012), and employees do not lose pay and can take care of family needs. Organizational leaders who implement work–life benefits such as telecommuting often find employees have higher job satisfaction, lower turnover rates, and increased productivity (Stout et al., 2013).

A third implication for social change is corporate cost savings. Organizations that have higher rates of telecommuting may have lower costs associated with real estate, decreased commuter benefits, and increased productivity (Goodman, 2013). Real estate costs include not only the purchase or lease of property but also the maintenance, utilities, and services for the building. Telecommuting decreases expenses associated with maintaining office space, such as maintenance, electricity, water, janitorial services, and others, because less space is necessary. Additionally, telecommuting can decrease the cost of commuter benefits offered in organizations. Some organizational leaders offer commuter benefits as a way to decrease the cost of commuting for employees and provide incentives for coming into the office. However, the cost of commuter benefits can be expensive for an organization. Finally, telecommuting increases employee productivity and performance (Basak, 2014). As a strong relationship exists between job satisfaction and productivity, increased telecommuting indicates that more people will feel satisfied and thus productivity may increase.

Recommendations for Action

Business leaders need to recognize that telecommuting has the potential to increase their bottom line through employee job satisfaction and productivity. Additionally, business leaders need to understand that telecommuters have a high level of job satisfaction. However, that job satisfaction was not dependent on gender, age, or level of telecommuting. Human resources professionals should use the outcomes of this study to discuss the benefits of telecommuting with their business leaders and to help in creating and implementing telecommuting programs. Managing supervisors who are

aware of the outcomes of this study may understand they should not distinguish between differences among telecommuters based on these variables. Including the results of this study in academic journals and professional journals will help distribute the results of the study to supervising managers, business leaders, and human resources professionals.

Recommendations for Further Research

Recommendations for further research include using different theories, using participants from only one company, examining the correlation between age and level of telecommuting, and using a different sampling method. The theory of purposeful work behavior was the theoretical framework for this study. Future researchers should consider using person–environment theory or social exchange theory. According to person–environment theory, certain people are more suitable for particular environments and in such environments, satisfaction is a guarantee, whereas social exchange theory is suitable for examining individuals who need to be within a social circle that meets their needs.

Using participants from one company as well as using a method other than self-reporting or a convenience method might lead to better results. Participants selected within one company will give insight into the dynamics within that organization and might provide a different result. Obtaining equal numbers of participants of the same gender and age group might also ensure a more balanced demographic.

The results of the correlation analysis reflected a correlation between age and level of telecommuting. Researchers should examine this relationship to determine the exact nature of the correlation between the two variables, as a determination of the nature of the relationship could indicate that as employees age, they have a higher tolerance for

telecommuting more days a week than a younger person may have, or vice versa. A determination of this relationship could be an essential finding in future studies. This also true of the relationship between age and job satisfaction. Future research to determine the direction of the correlation will go a long way in helping researchers determine just how significant this relationship is and if younger workers gain more satisfaction in telecommuting than older workers.

Future researchers could also consider other variables, such as supervisor–employee relationships, job type, education levels, and home life. Looking at these variables might determine a pattern of significance that could further add to the literature on telecommuting. Additional research would give organizational leaders more insight into how to determine which employees are more suitable for telecommuting positions.

Reflections

I went into this study sure of two things: telecommuters would have a high level of job satisfaction and clear differences would exist between among the predictor variables. However, I was only somewhat right. The results clearly reflected that telecommuters had a high level of job satisfaction, but I did not expect that only one of the variables, age, would be a significant predictor of job satisfaction. I also did not expect that no relationship would exist between gender, level of telecommuting, and job satisfaction. Furthermore, I expected that combining the three independent variables would significantly predict job satisfaction. This result piques my interest in seeing what other factors might affect job satisfaction among telecommuters. Although my beliefs on the outcome of this study were strong, I do not feel they affected the study. As data

collection was anonymous and no discussion of personal beliefs occurred with any possible participants, there was no chance of bias.

One of the things that surprised me most about this process was how long it took to find participants. Although I realized the average survey response rate was approximately 30%, I expected people would jump at the opportunity to participate because I thought that most people are likely to answer a survey that is close to them. Thus, by targeting telecommuters and highlighting the level of telecommuting as one of the factors, I expected that people who telecommute would be more likely to respond and faster. However, I had to repost several times before reaching the number of suggested participants. This outcome was an unexpected and an eye-opening factor for me.

After completing this study, I am content with the fact that data analysis validated some of my predictions were validated. I do wonder if including variables such as family life or leadership style would have an effect on job satisfaction. Additionally, a variable such as marital status or education might also have some impact, where previously I could not see such an impact. If I were to choose to retest this hypothesis in the future, I would add these additional variables to see if there was any difference in outcome.

Summary and Study Conclusions

The significance of this study was the validation that telecommuters had a high level of job satisfaction and that age is a predictor of job satisfaction. This result may help business leaders define or redefine their telecommuting policies, as they can be confident that gender or level of telecommuting has no impact on job satisfaction. Knowing that telecommuters have a high level of job satisfaction and that age is a

predictor of job satisfaction may help to ensure organizational leaders focus their policies around telecommuting on variables that truly affect job satisfaction.

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Appendix A: Community Post Invitation

Survey Participants Wanted

You are invited to participate in a survey regarding research on job satisfaction among telecommuters. All study participants must telecommute at least one day a week. Participants who choose to proceed must answer all questions however; they can choose to exit the survey at any time by simply closing their browser. Participation is strictly voluntary thus refusing or discontinuing this survey has no penalty.

This is an independent survey and is not associated to LinkedIn, Facebook or any other organizations however, the researcher is currently an employee of AT&T. Please note that I am conducting that study as a Walden University doctoral student and the study has no bearing on my role or employment status at AT&T. The purpose of this survey is to determine if any correlation exist between the level of telecommuting, age, gender and job satisfaction. This subject was chosen in an effort to add to the existing telecommuting knowledge base and provide additional insights for organizations to implement successful telecommuting programs.

This research will be conducted utilizing a confidential survey in Survey Monkey. This survey will remain open until all necessary responses are received. Your privacy will be maintain in that no personal or identifying employment information will be required as part of this survey. The risks associated with this study are minimal in that you will be asked to answer some questions related to your current job satisfaction. Participation in this study might involve some minor inconveniences such as time away from work or family. However, being in this study would not pose risk to your safety or well-being. The knowledge gathered in this study might help business leaders understand telecommuting employees better.

The results of this survey will be use in a study for Doctoral candidacy in a Business Administration program. No individual results will be presented only aggregated statistical results will be presented. However, a 1-2 page summary of the research results to the participants in this study via community post.

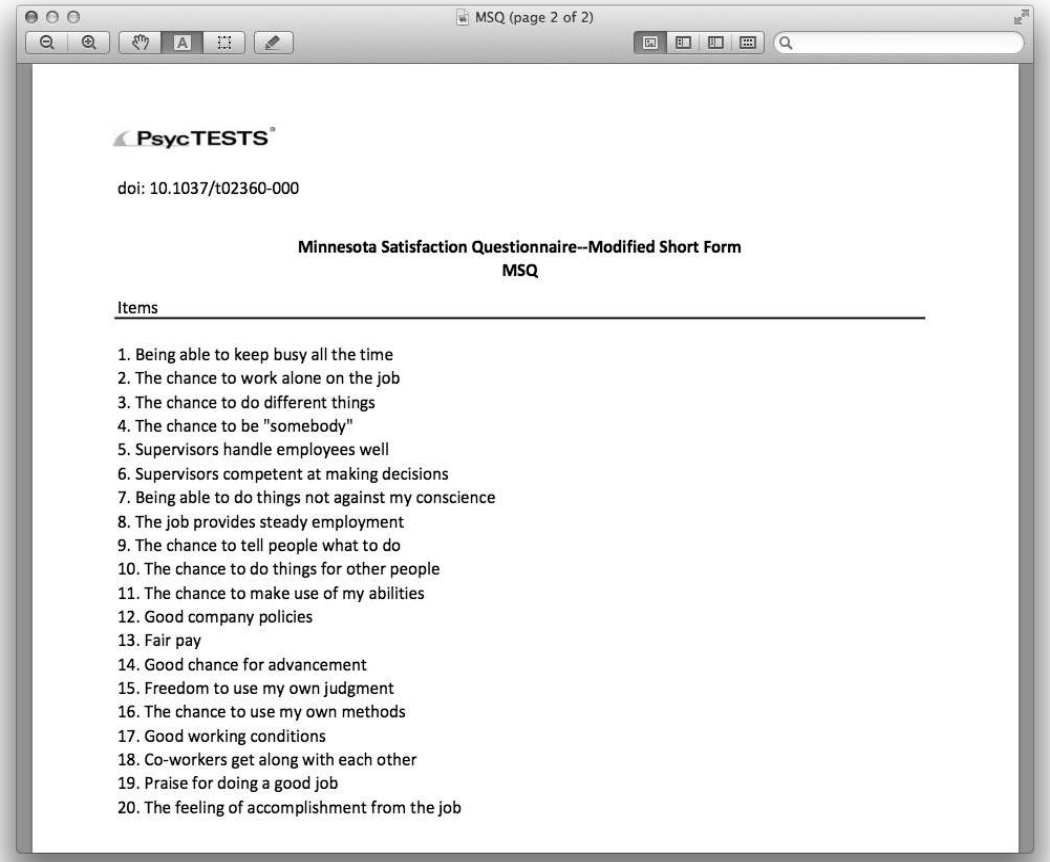
Please take a moment to complete the study using the link below. Entrance into the survey provides your implied consent to participate in the survey. The estimated completion time for the survey is approximately 10 minutes and can be accessed at the following link:

https://www.surveymonkey.com/r/predictorsofjobsatis

For your convenience, please keep or print a copy of this consent form for your records. If you have questions or concerns about this request please feel free to contact me at lashawn.johnson@waldenu.edu. Additionally, if you have questions about your rights as

a participant feel free to contact irb@waldenu.edu. Walden University's approval number for this study is 07-22-15-0138697 and it expires July 21, 2016. Although there is no compensation for this study your participation is greatly appreciated.

Appendix B: MSQ Job Satisfaction Scale



Appendix C: MSQ Manual excerpts

Scoring of the MSQ can also include a General Satisfaction scale. This scale uses 20 items (one from each of the twenty scales), yielding a score ranging from 20 to 100.

Items scored on the General Satisfaction scale are as follows: 24, 25, 28, 30, 35, 43, 51, 61, 66, 67, 69, 72, 74, 77, 82, 93, 96, 98, 99, 100.

The three scales of the short-form MSQ consist of the following items:

Scale	*Items*
Intrinsic	1 2 3 4 7 8 9 10 11 15 16 20
Extrinsic	5 6 12 13 14 19
General satisfaction	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Interpretation of MSQ scores—Raw scores for each MSQ scale can be converted to percentile scores, using the appropriate tables of normative data given in Sections III-B and IV-B. An individual's percentile score on any scale gives his relative position in a norm group. It indicates the percentage of people in the norm group with scores equal to or lower than the individual's raw score. The same raw score on a scale may convert to different percentile scores for different norm groups.

The most meaningful scores to use in interpreting the MSQ are the percentile scores for each scale obtained from the most appropriate norm group for the individual.

The appropriate norm group for an individual is the one that corresponds exactly to his job. Since, at the present time, the number of norm groups is limited, it may be necessary to select a norm group that is very similar to the individual's job. In selecting a similar norm group, care must be exercised to determine similarity on the basis of a large number of characteristics such as: tools used, materials used, tasks performed, type of supervision, rate of pay and physical working conditions. Determining similarity on a very superficial basis may lead to misinterpretation of the MSQ scores.

In the event that an individual is in an occupation for which no appropriate norm group has yet been developed, the MSQ raw scores can be converted to percentile scores using the Employed Disabled or Employed Non-disabled norms (see pages 88-91), depending on the individual's status with regard to disability. It is also possible to interpret MSQ raw scores for all scales by ranking

Section IV-B

Normative Data for the Short-Form MSQ

Details of data collection and questionnaire administration for the following groups:

Assemblers
Clerks
Engineers
Janitors and Maintenancemen
Machinists
Salesmen

These groups were developed by choosing individuals from the Minneapolis and St. Paul city directories who were listed as being employed in one of the six occupational groups. Each individual was telephoned by a member of the Work Adjustment Project staff to verify his job title (in the case of engineers, to determine also whether he was a graduate professional engineer) and to obtain telephone number and address. When lists of names with verified occupation and address information were developed, letters were sent to the listed individuals soliciting their cooperation and describing the Work Adjustment Project and its goals.

Within one week, each listed individual was contacted by telephone to arrange for an interview by a member of the Work Adjustment Project staff. A total of 4,191 individuals were contacted, of which 3,074 (or approximately 75%) agreed to be interviewed, while the remaining 25% refused to participate. A total of 2,858 interviews were completed.

At the completion of an interview, each respondent was asked to participate further in the study by taking a test battery at the University. Those who participated in the testing program were given written interpretations of their test results. Of the 2,858 persons interviewed, 757 (or about 37%) refused to participate in the testing program. Of the remaining 2,101 individuals, complete sets of test data were obtained on 1,460, or approximately two-thirds of the group volunteering to take the tests. The full test battery included measures of abilities, needs, and satisfaction.

As a result of this method of data collection, only job titles are available as descriptions of the groups. An individual was classified in a given group if the job title he gave included the titles listed above.

ENGINEERS (N=387)

Sample Characteristics **Data source. See page 112.**

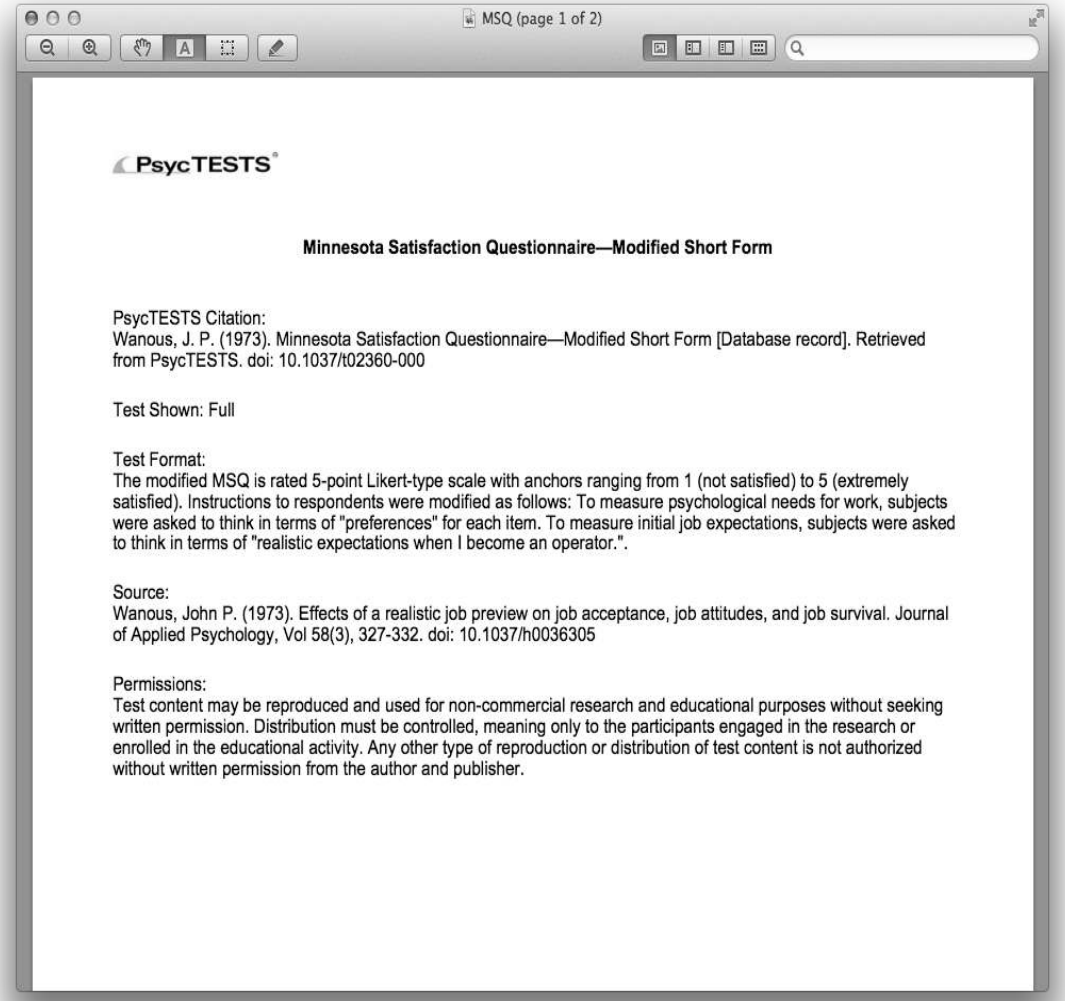
	N	%		N	%
Age			Tenure in present occupation		
18 to 25	12	3	1 year or less	4	1
26 to 35	124	32	2 to 5 years	80	21
36 to 45	40	10	6 to 10	81	21
46 to 55	77	20	11 to 20	32	8
56 to 65	37	10	21 to 30	69	18
65 and over	0	0	31 years and over	21	5
			Training for present occupation		
Disabling condition			on the job training	62	16
none	354	91	company training program	84	22
single disabling condition	30	8	apprenticeship	15	4
multiple disabling condition	4	1	trade, technical, or business school	49	13
			college degree	376	97
			Years of full-time experience		
Number of previous jobs			1 year or less	3	1
0	266	69	2 to 5 years	68	18
1 or 2	87	22	6 to 10 years	65	17
3 to 5	25	6	11 to 20 years	129	33
6 to 10	9	2	21 to 30 years	84	22
11 and over	0	0	31 years and over	38	10

Normative Data

	Scale		
	Intrinsic	Extrinsic	General
Mean	48.53	21.32	77.88
Standard Deviation	7.54	4.38	11.92
Hoyt reliability coefficient	.91	.82	.92
Standard error of measurement	2.31	1.86	3.29
Percentiles			
1	16	8	29
5	36	13	59
10	40	14	64
15	42	16	68
20	44	17	70
25	45	18	72
30	46	19	73
35	47	20	75
40	48	.....	77
45	.....	21	78
50	49	.....	79
55	50	22	80
60	51	.....	81
65	.....	23	82
70	52	.....	83
75	53	24	85
80	54	.....	86
85	.....	25	88
90	55	26	90
95	58	27	93
99	60	29	98

Complete manual link: http://vpr.psych.umn.edu/assets/pdf/Monograph%20XXII%20-%20Manual%20for%20the%20MN%20Satisfaction%20Questionnaire.pdf

Appendix D: Job Satisfaction Scale Use Permission Statement



Appendix E: Survey Questionnaire

Demographics

A. What is your gender? Male Female

B. What is your age range? Under 28 29-46 45-65 66-82

C. How many days do you telecommute per week? 1 2 3 4 5

Minnesota Satisfaction Questionnaire (Short Form)

Please rate your answers on the following scale 1 = Very Dissatisfied and 5 = Extremely Satisfied

1. Being able to keep busy all the time 1 2 3 4 5

2. The chance to work alone on the job 1 2 3 4 5

3. The chance to do different things 1 2 3 4 5

4. The chance to be "somebody" 1 2 3 4 5

5. Supervisors handle employees well 1 2 3 4 5

6. Supervisors competent at making decisions 1 2 3 4 5

7. Being able to do things not against my conscience 1 2 3 4 5

8. The job provides steady employment 1 2 3 4 5

9. The chance to tell people what to do 1 2 3 4 5

10. The chance to do things for other people 1 2 3 4 5

11. The chance to make use of my abilities 1 2 3 4 5

12. Good company policies 1 2 3 4 5

13. Fair pay 1 2 3 4 5

14. Good chance for advancement 1 2 3 4 5

15. Freedom to use my own judgment 1 2 3 4 5

16. The chance to use my own methods	1	2	3	4	5
17. Good working conditions	1	2	3	4	5
18. Co-workers get along with each other	1	2	3	4	5
19. Praise for doing a good job	1	2	3	4	5
20. The feeling of accomplishment from the job	1	2	3	4	5

Appendix F: Mann-Whitney Test for Gender

Mann-Whitney Test

Ranks

	Gender	N	Mean Rank	Sum of Ranks
Job Satisfaction Score	Female	40	29.60	1184.00
	Male	25	38.44	961.00
	Total	65		

Test Statistics[a]

	Job Satisfaction Score
Mann-Whitney U	364.000
Wilcoxon W	1184.000
Z	-1.835
Asymp. Sig. (2-tailed)	.066

a. Grouping Variable: Gender

Appendix G: Kruskal-Wallis test output Age Groups

Kruskal-Wallis Test - Age

Ranks

	Age Group	N	Mean Rank
Job Satisfaction Score	29 - 44	18	27.97
	45 - 65	41	33.72
	66 +	6	43.17
	Total	65	

Test Statistics[a,b]

	Job Satisfaction Score
Chi-Square	3.072
df	2
Asymp. Sig.	.215

a. Kruskal Wallis Test

b. Grouping Variable: Age Group

Appendix H: Kruskal-Wallis test output for Level of telecommuting

Kruskal-Wallis Test – Level of telecommuting

Ranks

	Level of telecommuting	N	Mean Rank
Job Satisfaction Score	1	14	31.32
	2	10	26.15
	3	10	31.75
	4	6	23.17
	5	25	39.54
	Total	65	

Test Statistics[a,b]

	Job Satisfaction Score
Chi-Square	6.091
df	4
Asymp. Sig.	.192

a. Kruskal Wallis Test

b. Grouping Variable: Level of telecommuting

Appendix I: SPSS Multiple Linear Regression Analysis Output

Descriptive Statistics

	Mean	Std. Deviation	N
Job Satisfaction Score	81.75	13.133	65
Gender	1.38	.490	65
Age Range	2.82	.583	65
Level of telecommuting	3.28	1.615	65

Correlations

		Job Satisfaction Score	Gender	Age Group	Level of telecommuting
Pearson Correlation	Job Satisfaction Score	1.000	.151	.247	.221
	Gender	.151	1.000	.088	-.077
	Age Range	.247	.088	1.000	.287
	Level of telecommuting	.221	-.077	.287	1.000
Sig. (1-tailed)	Job Satisfaction Score	.	.115	.024	.038
	Gender	.115	.	.242	.270
	Age Range	.024	.242	.	.010
	Level of telecommuting	.038	.270	.010	.
N	Job Satisfaction Score	65	65	65	65
	Gender	65	65	65	65
	Age Range	65	65	65	65
	Level of telecommuting	65	65	65	65

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Level of telecommuting, Gender, Age Range[b]	.	Enter

a. Dependent Variable: Job Satisfaction Score

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.328[a]	.107	.063	12.710

a. Predictors: (Constant), Level of telecommuting, Gender, Age Range

b. Dependent Variable: Job Satisfaction Score

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1184.163	3	394.721	2.443	.073[b]
	Residual	9853.898	61	161.539		
	Total	11038.062	64			

a. Dependent Variable: Job Satisfaction Score

b. Predictors: (Constant), Level of telecommuting, Gender, Age Range

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B
		B	Std. Error	Beta	t	Sig.	Lower Bound
1	(Constant)	59.901	8.838		6.778	.000	42.230
	Gender	3.984	3.272	.149	1.218	.228	-2.559
	Age Range	4.094	2.862	.182	1.430	.158	-1.629
	Level of telecommuting	1.468	1.033	.181	1.421	.160	-.597

Coefficients[a]

Model		95.0% Confidence Interval for B Upper Bound	Collinearity Statistics Tolerance	VIF
1	(Constant)	77.573		
	Gender	10.527	.981	1.020
	Age Range	9.817	.905	1.105
	Level of telecommuting	3.533	.907	1.103

a. Dependent Variable: Job Satisfaction Score

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Gender	Age Range	Level of telecommuting
1	1	3.748	1.000	.00	.01	.00	.01
	2	.170	4.696	.00	.20	.00	.67
	3	.063	7.734	.08	.73	.18	.32
	4	.019	13.898	.91	.06	.82	.00

a. Dependent Variable: Job Satisfaction Score

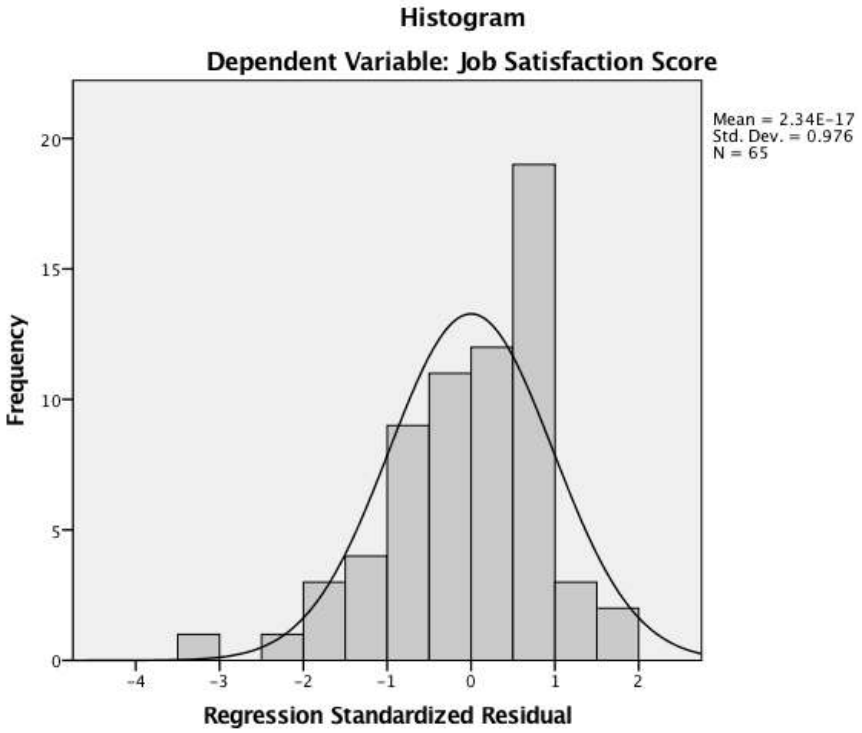
Residuals Statistics[a]

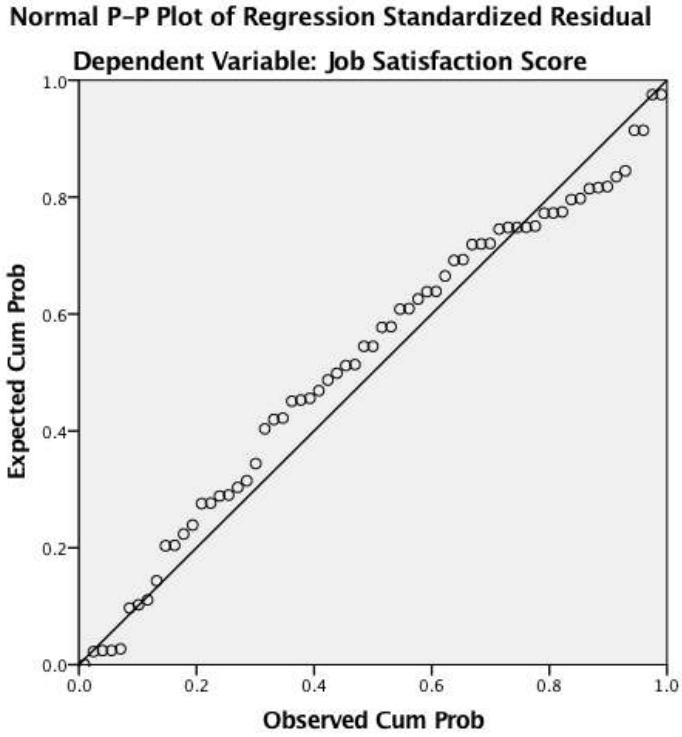
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	73.54	91.58	81.75	4.301	65
Std. Predicted Value	-1.909	2.285	.000	1.000	65
Standard Error of Predicted Value	2.150	4.157	3.098	.589	65
Adjusted Predicted Value	73.52	91.88	81.72	4.340	65
Residual	-42.993	24.991	.000	12.408	65
Std. Residual	-3.383	1.966	.000	.976	65
Stud. Residual	-3.521	2.024	.001	1.008	65
Deleted Residual	-46.574	26.485	.034	13.218	65

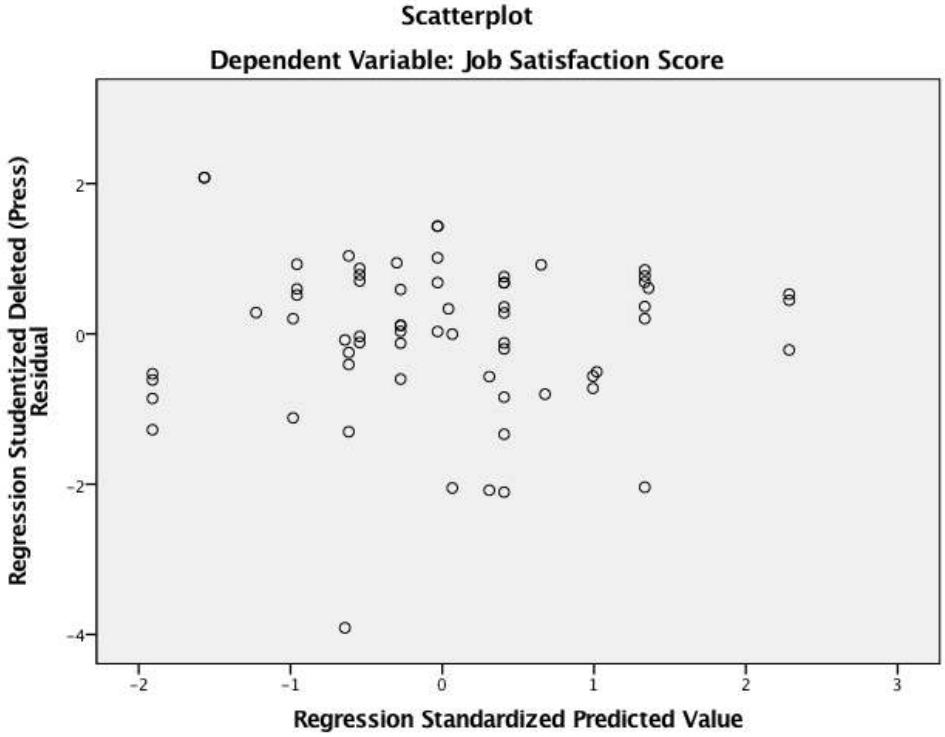
Stud. Deleted Residual	-3.912	2.079	-.007	1.040	65
Mahal. Distance	.847	5.863	2.954	1.451	65
Cook's Distance	.000	.258	.016	.034	65
Centered Leverage Value	.013	.092	.046	.023	65

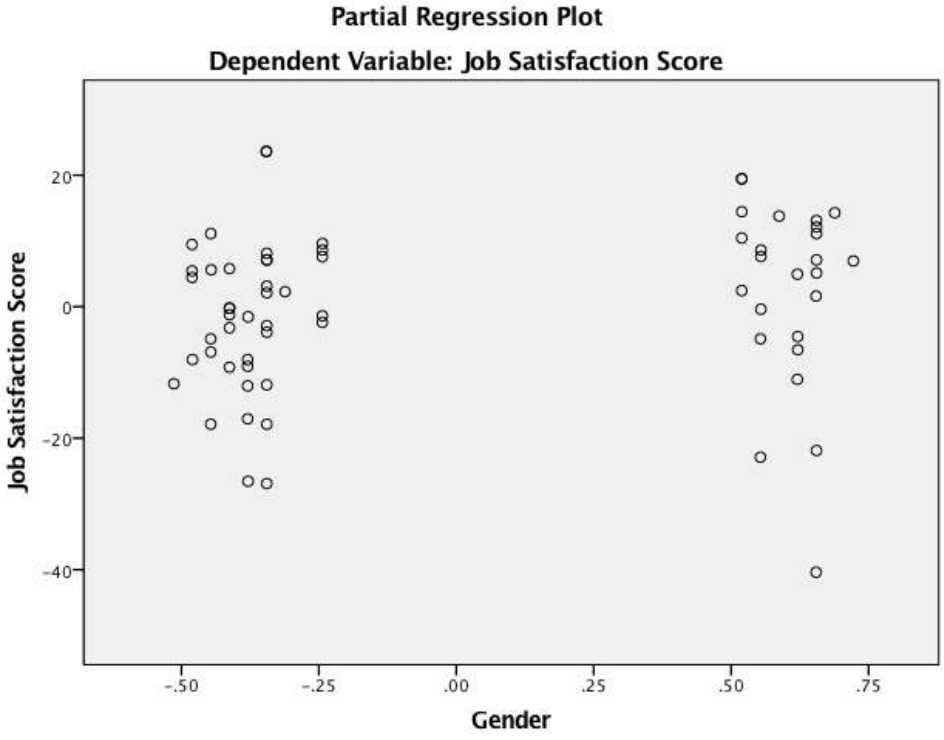
a. Dependent Variable: Job Satisfaction Score

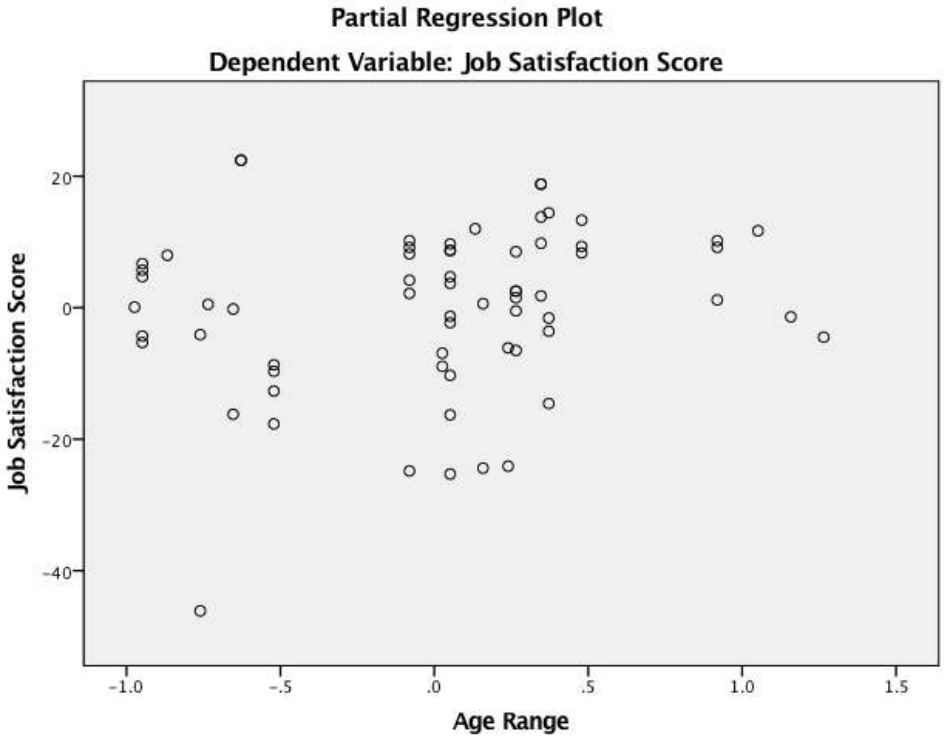
Charts

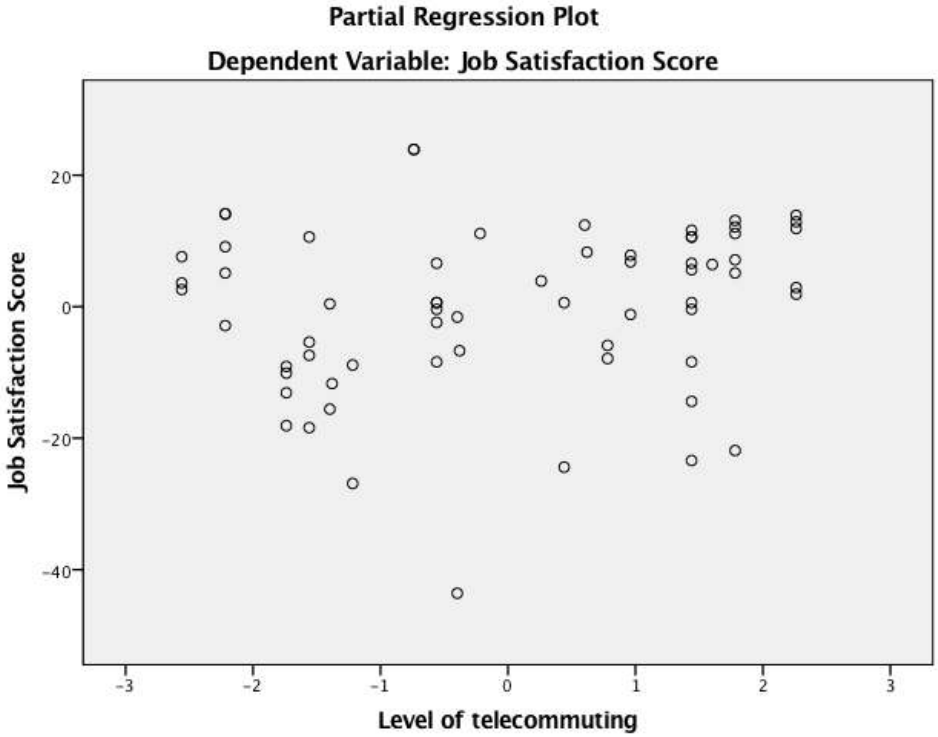



Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Job Satisfaction Score
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: Job Satisfaction Score
Regression Studentized Deleted (Press) Residual
Regression Standardized Predicted Value
2
0
-2
-4
-2
-1
0
1
2
3


Partial Regression Plot
Dependent Variable: Job Satisfaction Score
Job Satisfaction Score
20
0
-20
-40
-.50
-.25
.00
.25
.50
.75
Gender


Partial Regression Plot
Dependent Variable: Job Satisfaction Score
Job Satisfaction Score
20
0
-20
-40
-1.0
-.5
.0
.5
1.0
1.5
Age Range


Partial Regression Plot
Dependent Variable: Job Satisfaction Score
Job Satisfaction Score
20
0
-20
-40
-3
-2
-1
0
1
2
3
Level of telecommuting

Appendix J: SPSS Correlations Output

Correlations

Notes

Output Created		18-SEP-2015 12:52:08
Comments		
Input	Data	C:\Users\Randy\Desktop\Lashawn\Final Data Set 082215.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	65
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each pair of variables are based on all the cases with valid data for that pair.
Syntax		CORRELATIONS /VARIABLES=Gender Age Days Satisfaction /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.02

Correlations

		Gender	Age Group	Level of telecommuting	Job Satisfaction Score
Gender	Pearson Correlation	1	.088	-.077	.151
	Sig. (2-tailed)		.485	.540	.230
	N	65	65	65	65
Age Group	Pearson Correlation	.088	1	.287*	.247*
	Sig. (2-tailed)	.485		.020	.047
	N	65	65	65	65
Level of telecommuting	Pearson Correlation	-.077	.287*	1	.221
	Sig. (2-tailed)	.540	.020		.077
	N	65	65	65	65
Job Satisfaction Score	Pearson Correlation	.151	.247*	.221	1
	Sig. (2-tailed)	.230	.047	.077	
	N	65	65	65	65

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix K: SPSS Age/Job Satisfaction Regression Analysis Output

Regression

Notes

Output Created		18-SEP-2015 12:52:52
Comments		
Input	Data	C:\Users\Randy\Desktop\Lashawn\Final Data Set 082215.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	65
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT Satisfaction /METHOD=ENTER Age.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.01
	Memory Required	3120 bytes
	Additional Memory Required for Residual Plots	0 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Job Satisfaction Score	81.75	13.133	65
Age Group	2.82	.583	65

Correlations

		Job Satisfaction Score	Age Group
Pearson Correlation	Job Satisfaction Score	1.000	.247
	Age Group	.247	1.000
Sig. (1-tailed)	Job Satisfaction Score	.	.024
	Age Group	.024	.
N	Job Satisfaction Score	65	65
	Age Group	65	65

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Age Group[b]	.	Enter

a. Dependent Variable: Job Satisfaction Score

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.247[a]	.061	.046	12.827

a. Predictors: (Constant), Age Group

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	672.593	1	672.593	4.088	.047[b]
	Residual	10365.469	63	164.531		
	Total	11038.062	64			

a. Dependent Variable: Job Satisfaction Score

b. Predictors: (Constant), Age Group

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	66.110	7.899		8.369	.000		
	Age Group	5.556	2.748	.247	2.022	.047	1.000	1.000

a. Dependent Variable: Job Satisfaction Score

Collinearity Diagnostics[a]

				Variance Proportions	
Model	Dimension	Eigenvalue	Condition Index	(Constant)	Age Group
1	1	1.980	1.000	.01	.01
	2	.020	9.828	.99	.99

a. Dependent Variable: Job Satisfaction Score