

THE IMPACT OF SMARTPHONES ON WORK-LIFE BALANCE

By

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ABSTRACT

Smartphones have become increasingly popular for personal and work use. Due to the technological capabilities of smartphones, they can do much of what a computer can. With this increased ability people have the ability to do work on a smartphone, anywhere and at anytime. This study examined whether using smartphones for work impacted employees' work-life balance, job satisfaction, life satisfaction and stress. In addition, the consequences of an organization requiring employees to work on their smartphones on a regular basis were examined. Participants for the online survey were recruited through Amazon Mechanical Turk. Results showed a significant negative relationship between smartphone intrusion and work-life balance. In addition there were significant relationships between smartphone intrusion and stress levels. This means that the more people felt that using their smartphone was intrusive on their personal life the more stressed they were. Lastly work life balance was significantly related to stress, life satisfaction, and job satisfaction. Implications of this study's results for the employee and employer are discussed.

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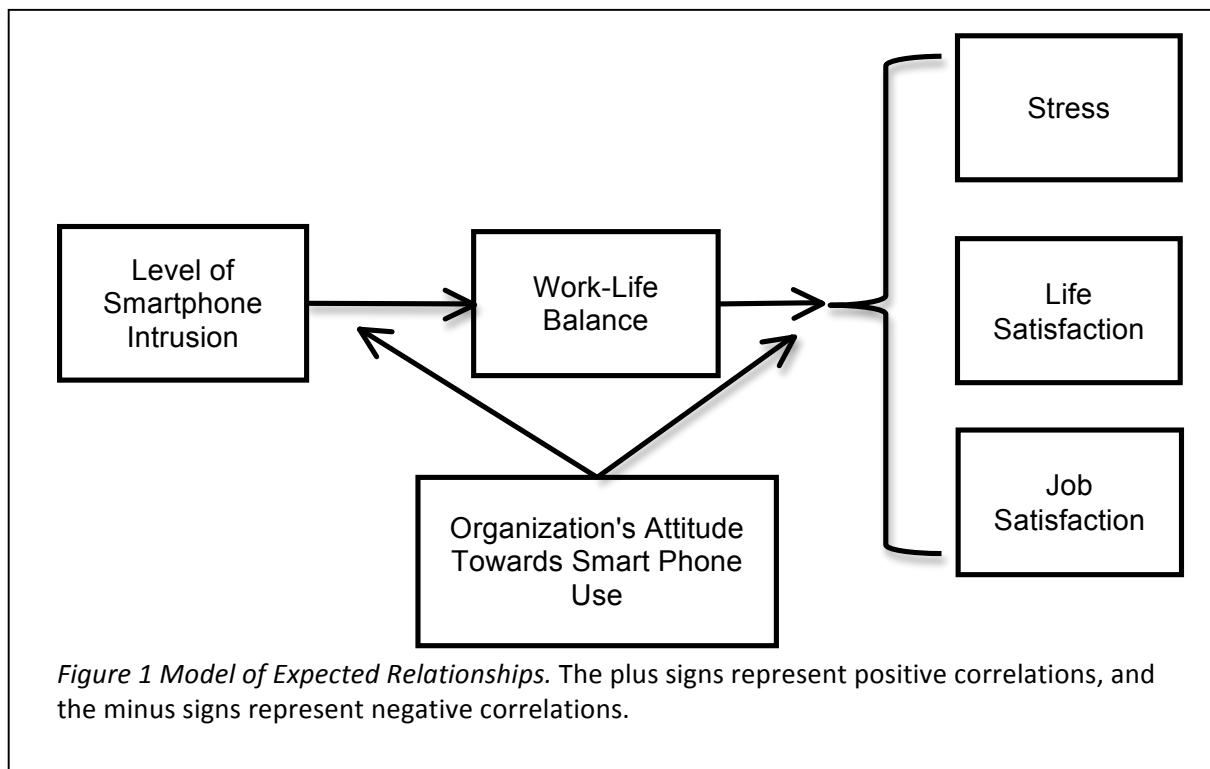
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CHAPTER I

Introduction

The use of technology at work becomes more and more popular everyday “In fact, some mobile phone users consider their handsets as extensions of their physical selves” (Campbell & Russo, 2003, p. 319). A reason for this is that workers often embrace technology because it gives them the flexibility to work from home if they choose. Technology is often used in organizations in order to help employees solve problems and have easier access to information. It has also been shown to help the performance of employees because they can easily communicate with coworkers from anywhere (Day, Paquet, Scott, & Hambley, 2012). However, some researchers (Bowswell & Olson-Buchanan, 2007; Chesley, 2005; Chesley & Johnson, 2010; Currie & Eveline, 2011; Golden & Giesler, 2007) have examined whether this technology is actually having a negative impact on employees’ ability to balance work and life. This study will further examine whether a perceived high level of smartphone intrusion and an organization with an attitude towards smartphones that encourages using them for work, affects employees’ work-life balance level, stress level, job satisfaction and life satisfaction. A smartphone can be defined as “a device that combines a cell phone with a hand-held computer, typically offering Internet access, data storage, e-mail capability, etc.” (<http://dictionary.reference.com/browse/smartphone>). These typically are touch screen and can include: iPhone, Android, Windows, or Blackberry. A graphical representation of the model and the expected relationships are in Figure 1.



Defining Work-Life Balance

Work-life balance can be defined as “the extent to which an individual is equally engaged in and equally satisfied with his or her work role and family role” (Greenhouse, Collins, & Shaw, 2003, p. 510). The opposite of this is work-life conflict, which is when the areas of work and life are incompatible, and doing something for work interferes with family life, and visa versa. (Harris, Marrett, & Harris, 2011). Other terms like work-family balance, and work-family conflict also exist. These terms more specifically refer to the relationship between someone’s work life and their family life. This study will investigate employee’s personal lives in general. However, some of the research cited uses the term “work-family balance” and is focused on the family aspect of someone’s personal life. In this study the construct of work-life balance will be examined in two ways: work life to personal life balance, and personal life to work life balance. If

someone has work life to personal life balance this means that their work life does not interfere with their personal life. If someone has personal life to work life balance this means that their personal life does not interfere with their work life.

Theories Behind Work-Life Balance

One of the theories that has been connected to work-life balance is spillover. This theory says that the family part of life and the work part of life can influence each other through a permeable boundary (Chesley, 2005). Role boundary permeability describes the ability for someone to be in one role physically while psychologically in another role (Chesley, 2005). In other words, what happens to you at work can continue to affect you during your personal life (i.e., impact spills over to your personal life). The impact can go in the opposite direction too, with the psychological affects of your personal life spilling over to affect you during your work life. Technological developments are one of the areas that have contributed to the blurring of boundaries between work and family (Brough, O'Driscoll, & Kallaith, 2005).

Spillover has been shown to have both a negative and positive form. Negative spillover is when something bad happens in one area and it has a negative impact on another area. Negative spillover can cause undesirable outcomes like family dissatisfaction and increased distress levels (Chelsey, 2005). Positive spillover occurs when something good happens in one area and it also has a positive impact on another area. An example of positive spillover can be when someone gets a promotion at work and has a feeling of satisfaction both at work and at home.

Chesley (2005) tested several hypotheses related to spillover and technology use. One of her findings was that computers and communication technology caused increased

spillover which ended up causing a decrease in family satisfaction. Interestingly she found cell phones caused more negative spillover than computer use did. Which is noteworthy because cell phone use has become extremely popular, and its role in people's lives continues to expand. Additionally, because cell phones are typically more portable than computers, people tend to interact with them more often. This can include using a smartphone during personal time to address work-related issues and communications. For this reason this study will focus on smartphone use.

Work-Life Balance Programs

Work-life balance programs have become quite popular. A Society of Human Resource Management survey found that 24% of organizations have a formal work-life balance policy, and 52% of organizations have an informal work-life balance policy (Boyd, Schmit, Esen, Lee, & Scanlan, 2012). Some of the common formal policies include working during vacation time, working overtime hours at home or at the office, and working during sick time. Some of the informal policies included supervisors encouraging their team to have a healthy work-life balance, and to ask for help when needed. Additionally, Brough, O'Driscoll, and Kalliath (2005) found that using organizational resources for work-family balance programs cause employees to have a higher family and job satisfaction. Work-life balance also has benefits for the employer. Benefits may include increased productivity, lower absenteeism, higher stock value, and increased retention (Reed & Cark, 2004). Additionally, the cost of absenteeism due to high levels of work-life conflict has been estimated to cost companies up to 10 billion dollars a year (Naithani, 2010).

History of work-life balance programs. Work-family balance programs have been around for a while. In fact Hill, Hakins, and Miller (1996) stated that telework began to become popular in 1973. Telework is defined as doing work outside of the office while using different forms of communication technology (or other necessary equipment). Telework began by a company moving all the necessary technology and other equipment to an employee's home and setting it up there, so they could work from home. Due to all the effort required to set it up, it was not terribly common. However, it did continue to grow as the technology became available. Hill, Hakins, and Miller predicted that the growth could be so big that office buildings would be turned into apartments because so many people would work from home. Even though this prediction has not occurred yet, another point made by Hill, Hakins, and Miller may be coming to fruition. They mentioned that telework could allow work to become a "cyberspace sweat shop." This is due to the boundaries between work and home being so blurred and mixed together that work never really ends.

Negative Impacts that Technology has on Work-Life Balance

Although technology has been integrated into organizations to make work more efficient and make peoples' working lives better, there are ways that technology can cause increased demands on employees and cause a negative impact. (Day, Paquet, Scott, & Hambley, 2012). As stated earlier, technology use can cause increased blurring of life and work boundaries and cause negative spillover and distress (Chelsey, 2005). The areas that will be examined for possible negative effects in this study will be stress, life satisfaction and job satisfaction.

Job Stress. With the work world drastically changing, employees are becoming increasingly concerned with how they can balance their work lives and non-work lives (Shivananda & Ashok, 2012). Unfortunately Bell, Rajendran, and Theiler (2012) mentioned that it is very common for people to struggle to balance their work life and personal life. A study done by Shivananda, and Ashock (2012) showed that there was a negative correlation between work-life balance and stress level. This would mean that those who have a low level of work-life balance would experience high levels of stress. It makes sense that people are worried because some of the things related to continuously working are emotional exhaustion, depressive symptoms, low and low job satisfaction (Park & Jex, 2011).

Brough, O'Driscoll, and Kalliath (2005) also conclude that technologies' increased presence has caused a more competitive business environment. This would mean that employees would need to devote more time and energy to their work. If these factors are combined with smartphone technology becoming increasingly prevalent, people will end up spending more of their personal time working because they have technology that allows them to do that. This increase in personal time spent working causes the boundaries between work and life to become more and more blurred.

A study done by Currie and Eveline (2011) examined the effect of technology among academic professionals. There was a quote talking about how stress had degraded the social life of people to the point where participants would respond to questions with comments like, "I sleep rather than socialize" (Currie & Eveline, 2011, p.545), or "no real family (or friends) here" (Currie & Eveline, 2011, p.545). Although these studies dealt with just email, they are still quite relevant. Smartphone technology has allowed for

email to be accessed with such ease that there is no reason to wait to get to a computer before answering or sending an email.

Knowing this, it is certainly possible that the level of work-life balance will be negatively correlated with stress. As stated earlier, the construct of work-life balance will be examined in two ways: work life to personal life balance, and personal life to work life balance. Work to personal life balance means that someone's work life does not interfere with their personal life. Personal life to work balance means that someone's personal life does not interfere with their work life. The specific hypotheses regarding these variables are as follows:

Hypothesis 1a: The level of work life to personal life balance will be negativity related to job stress.

Hypothesis 1b: The level of personal life to work life balance will be negatively related to job stress.

Life Satisfaction. Research has also examined at how work-life balance can influence the quality of life. Greenhouse, Collins, and Shaw (2003) found that people that spend more time with family were the most satisfied, followed by balanced individuals, then those who spend more time at work. This introduces an interesting point that there are many situations that can allow someone to be equality satisfied with their work and personal life. One person may have a very satisfying personal life, but work is something they do to pay the bills. It is also possible to have another person that has a highly engaging career and satisfying personal life. In that case they would want to spend equal time in both areas. However, Reed and Clark (2004) found that generally employees are

often worried that they are not spending enough time with their families and that work is interfering with life.

Organizations have taken this into account and implemented a variety of work-life balance programs so that their employees can lead a healthy and satisfying life in both areas. It has also been found that when an organization is using the best practices with their work-life balance programs, their employees will experience a variety of benefits. These best practices include: having family friendly benefits, strong leadership, family friendly culture, family friendly vision, and family friendly training and communication. The benefits experienced by an employee include better health, more time with the family, less stress, more time for the self, more time for the community, greater control of life and improved quality of life (Reed & Clark, 2004). Knowing that someone's ability to balance the roles of work and life can affect their quality of life, it is important to make sure that people are able to experience the highest quality of life possible.

Hypothesis 2a: The level of work life to personal life balance will be positively related to life satisfaction.

Hypothesis 2b: The level of personal life to work life balance will be positively related to life satisfaction.

Job Satisfaction. “Job satisfaction measures the degree to which respondents report being satisfied and happy with their job” (Jang, Park, & Zippay, 2011, p. 138). Some organizational interventions that are related to work-life balance have been known to increase job satisfaction (Brough, O’Driscoll, & Kalliath, 2005). One of these interventions is scheduling control. Scheduling control refers to how much control an employee has over the hours that they work (Jang, Park, & Zippay, 2011). Jang, Park,

and Zippay (2011) found that scheduling control has a greater impact on job satisfaction if work-life balance programs are available. So this tells us that when scheduling control is used as a part of or along side work-life balance programs, there is a more extensive impact on job satisfaction. This makes sense because if someone has the ability to control when they work they are more likely to be able to balance their work and personal life. Sim and Bujan (2012) examined the impact that work–family conflict has on job satisfaction. They found when people experience work life conflict, they tend to be less satisfied with their life and their job. This research tells us that work-life or work-family conflict can have negative impacts on employees in terms of their job satisfaction.

Hypothesis 3a: The level of work life to personal life balance will be positively related to job satisfaction.

Hypothesis 3b: The level of personal life to work life balance will be positively related to job satisfaction.

Factors that can Influence Extent of Technology’s Negative Impact

Not having work-life balance can have many negative effects on people, and technology’s increased presence is only adding to it. This research seeks to find out if smartphone use for work is seen as intrusive. If it is, does this intrusiveness negatively influence how much work-life balance someone has, therefore causing them to experience things like lower job satisfaction and higher levels of stress? Thus, do people that use smartphones to work during personal time have more or less work-life balance as a result? Additionally, do certain organizations have a culture that pressures employees to use technology to work during personal time? If this is the case, are they likely to have

lower levels of work-life balance? If employees are experiencing less work-life balance, will they be more stressed and less satisfied with their job and/or personal life?

Smartphone intrusion. One of the main factors that could influence the extent that technology disrupts work-life balance, and causes things like stress and decreased life satisfaction, is how intrusive someone feels their smartphone is. A factor that could contribute to the level of intrusiveness is simply how much time someone spends using his or her smartphone for work. The average amount of time spent on email outside of work is 30 minutes a day (Waller & Ragsdell, 2012). Although, this might not seem long, over a week it adds up to an extra three and a half hours per week. Waller and Ragsdell (2012) also discovered that 100% of the people in their study that had been with an organization less than a year experienced urges to check their email. The question to consider now is, does this tell us that even though people are spending personal time checking email, they still feel the need to continue working on email?

This impact does not stop at email. Technology advances made it so that people no longer have to wait to be at a computer, or at the office, to accomplish their work. They can do it through technology that they have right beside them all the time. This should allow for maximum flexibility for employees to work wherever is convenient for them. Thurston (2012) talks about how technology has worked its way into the workplace. Specifically Thurston mentioned that cell phones, especially smartphones, have allowed people to do just about everything while not at their physical office. It has grown to the point that, “essentially there is not a place left to hide from work - not even the restroom” (Thurston, 2012, p. 3).

Technology is supposed to allow work to be more efficient so that we can accomplish things in a faster manner. However, this increased flexibility that technology has allowed to exist is starting to change into an “always available culture” (Currie & Eveline, 2011). Day, Paquet, Scott, and Hambley (2012) agree with that point saying that technology use in organizations has led to a culture where employees are always expected to be reachable outside of normal working hours.

This combination of a culture that expects employees to always be available and technology that allows them to be available has already started to cause problems. The main problem is that this allows work to intrude into people’s personal lives. It allows people to work day or night, which could easily cause negative consequences for anyone’s personal life. An employee who works longer hours and has a very demanding job will likely have less ability to devote time to family life (Brough, O’Driscoll, & Kalliath, 2005). Thurston (2012) argues that having more and more technology actually adds to the workweek. Technology causing more work or an increased workweek is common among executives and managers because they often need to respond quickly to workplace issues or problems, even when they are not at work. It has gotten to the point where many organizations actually buy communication technology for managers and executives (Soylu & Campbell, 2012).

Similar to work life balance, intrusiveness of smartphones will be examined on two levels: personal life to work life smartphone intrusion (PLWL smartphone intrusion) and work life to personal life smartphone intrusion (WLPL smartphone intrusion). PLWL smartphone intrusion is examining smartphone use for personal use during work time.

WLPL smartphone intrusion is examining smartphone use for work use during personal time.

Hypothesis 4a: The level of WLPL smartphone intrusion will be negatively related to work life to personal life balance.

Hypothesis 4b: The level of PLWL smartphone intrusion will be negatively related to personal life to work life balance.

Organization's attitude towards smartphone use. This could also be a factor that affects the extent that technology use impacts work-life balance. If an organization believes that employees should not work while they are at home, then employees likely will not experience as much of a deficit in work-life balance. However, if there is an expectation to respond quickly to text messages, emails, or phone calls, then employees are likely to see more deficits in work-life balance because they are constantly expected to work. The attitudes that an organization has are usually reflected in its culture. Knowing this, there has been a call by Boswell and Olson-Buchanan (2007) for research to see what effect organizational culture has on work-life balance.

One area of organizational culture that could impact work-life balance is the presence of either formal or informal family friendly policies. The formal policies are actual programs that employees can use. Informal policies are when a supervisor is flexible with employees and let them leave early or come in later for one reason or another (Jang, Park, & Zippay, 2010). This sort of policy would be very beneficial for employees because they know that they can get some flexibility when they need it. Hayman (2009) mentioned that it is important for employees to know that they can use the programs without any fear of backlash. For example, use of a flexible work schedule

program should not disadvantage an employee from getting a raise, promotion, or any other career advancement opportunity (Hayman, 2009). Even though there could be some benefit from this sort of policy, they do not seem to be very popular. As previously noted, a Society for Human Resource Management survey found that only 26% of organizations have supervisors that discouraged employees from using wireless communication devices to answer phone calls or email during non-work hours. Non-work hours included things like holidays, weekends, and evenings. They also found that only 1% of organizations had specific times when email could not be used (Boyd, Schmit, Esen, Lee, & Scanlan, 2012).

An organization's attitude towards smartphone use can also have an impact on work-life balance when managers push employees to get better results and higher performance. However, this can actually have a negative impact and cause performance to decrease (Roper, 2010). Not only can managers directly cause employees to work too hard and become stressed, managers can indirectly influence employees' working habits. Carmeli, Sternberg, and Elizur (2008) found that the ways managers use technology can influence how much their employees end up using technology. For instance if a manager sends emails late at night or on the weekend employees will likely do the same. Therefore, the behavior of an employee can be influenced by the perceived norms, values, and attitudes of the organization. (Carmeli, Sternberg, & Elizur, 2008).

Day, Paquet, Scott, and Hambely (2012) showed how organizational culture and other factors can affect the extent that employees experience stress or strain. The things that influence this relationship are: how reachable an employee is to coworkers, how employees can get information, how they communicate, if the technology is used to

monitor the employee, and if the employee has the ability to control their lives at work and at home. Day, et al. used this foundation as a framework to examine those factors. In addition they looked at how much information communication technology (technology that has the ability to gather, store or send information) helps employees to be accessible outside of normal working hours and how that impacts communications. More specifically, the study was examining the relationship between information communication technology (ICT) demands with employee well being. The ICT demands scale contained items that looked at hassle, workload, the workers' control of workload and other similar areas. Employee well-being included the areas of burnout, strain and stress. They also looked to see if organizational support of ICT usage reduced strain on employee well-being. They found that use of ICT significantly impacts stress and strain above and beyond traditional job demands alone. Additionally, when an organization supports the use of ICT, with things like updated technology and skilled IT professionals, this causes the stress and strain experienced by employees to decrease.

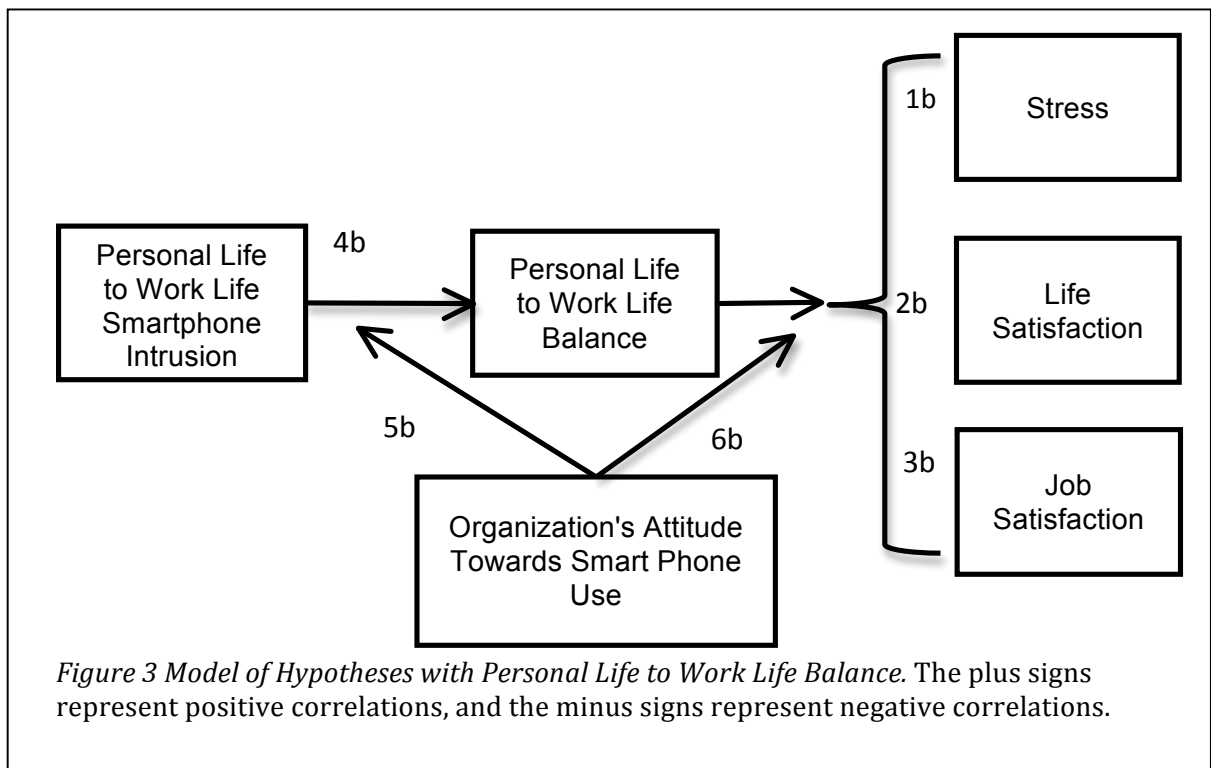
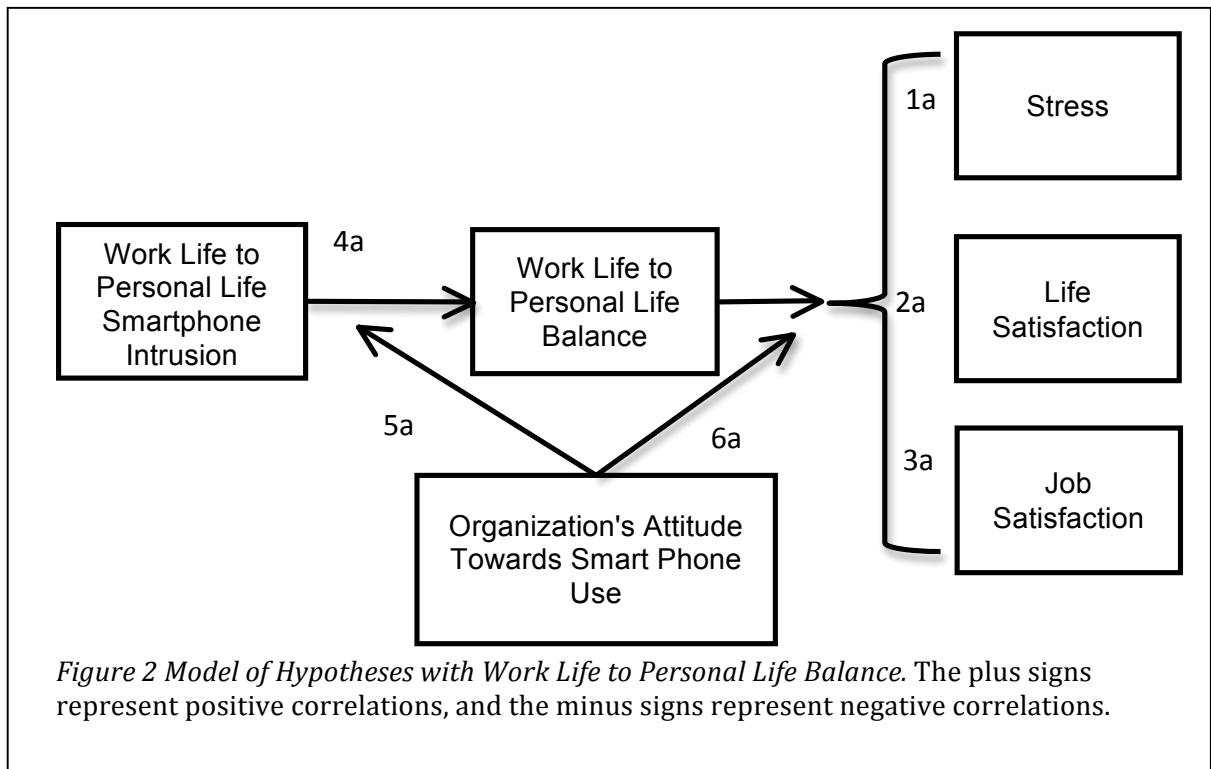
Looking more specifically at cell phones, Campbell and Russo (2003) examined whether social factors influence what people think about, and how they use cell phones. They found that the attitudes, statements and behaviors of other people can influence how people think and use communication data. This means that how ones friends and coworkers use technology will impact how you decide to use it. Knowing this, it is possible that the culture of an organization and its "unwritten rules" regarding technology use could then impact the extent of use.

Hypothesis 5a: The organization's attitude towards smartphone use will strengthen the relationship between the level of WLPL smartphone intrusion and work life to personal life balance.

Hypothesis 5b: The organization's attitude towards smartphone use will strengthen the relationship between the level of PLWL smartphone intrusion and personal life to work life balance.

Hypothesis 6a: The organization's attitude towards smartphone use will strengthen the relationship of work life to personal life balance with job stress, job satisfaction, and life satisfaction.

Hypothesis 6b: The organization's attitude towards smartphone use will strengthen the relationship of personal life to work life balance with job stress, job satisfaction, and life satisfaction.



CHAPTER II

Method

Participants

Amazon Mechanical Turk (AMT) was the main tool used as a way to gain access to a subject pool of people. The goal with using AMT was to easily obtain data from a large and diverse sample. Participants were also recruited through other electronic media by briefly describing the study and sending a link to the survey. In this case, electronic media included e-mail and Facebook. In order to participate, participants needed to be a salaried workers that have the ability to use their smartphones to work during personal time. Being a salaried worker is required because it is illegal for non-salaried workers to be working off the clock without compensation. Knowing this, they would be less likely to be working during personal time. Salaried workers also are typically higher-level employees that would have the ability to do work outside off of the work site. For example, retail associates, or factory workers would not be able to do their job anywhere but the work site.

The sample included 202 participants. Data for over 300 people were originally collected. However, participants were eliminated based on answers to the quality assurance questions, such as “please answer strongly agree for this item.” A complete list of these quality assurance items can be found in Appendix A. A total of 107 people were eliminated for answering one or more of the quality assurance questions incorrectly. The decision was made to only keep participants that got all of the quality assurance questions correct so that the most accurate data possible was analyzed. In addition, the sample size

was large enough that this was possible without significantly decreasing the statistical power of our analyses.

Demographics Collected

Several demographic questions were asked in the survey. These included things like gender, age, if their employer provided their smartphone, and if they received an email or text message while filling out the survey. A complete list of the demographic items can be found in Appendix B. There were 116 (57.1%) males in the sample. There were 85 (41.9%) females in the sample. One participant decided not to respond to this demographic item. There was a wide range of ages in the sample. The minimum age was 18 and the maximum was 50. Unfortunately, there were a significant number of people that choose not to respond to the age question. Only 54 of the participants responded with an age above 18. A possible reason for this is people may be uncomfortable answering this demographic item. Thirty-five percent of the sample reported that their employer provided their smartphone. So most of the sample, 67.5%, do not have an employer provided smartphone. Considering the focus of this study, a rather interesting question was asked: "Did you receive an email or text message while filling out this survey?" Turns out 20.7%, or 42 people, did in fact receive an email or text message while filling out the survey. In order to be sure that our sample qualified for participation, one survey item asked if they owned a smartphone. We found that 99.5% of the participants answered yes to this question. The other .5% or one person did not answer the question at all.

Procedure

A survey was developed using Qualtrics and connected through Amazon Mechanical Turk (AMT). When participants selected the survey they were given a brief description of the study and the minimum qualifications for participation. The survey included items that measure participants' work-life balance, job satisfaction, life satisfaction, job stress, smartphone intrusion and their organization's attitude towards smartphone. The items associated with each variable were asked together. For example, all of the job satisfaction questions were asked together. Once the participant completed the survey they were provided with a code that they could input back into the AMT system, so that they would receive the compensation for participation. Participants received 20 cents for participation. This amount was decided upon based on research by Ipeirotis (2010), which showed that 90 percent of the AMT tasks have compensation of 10 cents or below.

Measures

Independent Variable

Smartphone intrusion. This measure was created because the literature did not have a suitable measure. This measure was created by first clearly defining intrusion. Definitions from dictionary.com and other online sources were used. A couple of main words were identified as most accurately capturing the desired construct: invasion, meddling, and interfering. Brainstorming was then done to generate statements that looked at these areas. A complete list of the statements being used in the measure can be found in Appendix C. A brief measure of how much time someone spends using their

smartphone to work during personal time is also included. A complete version of this measure is in Appendix D.

Organization's attitude towards smartphone use. This was measured using an adapted questionnaire items developed by Waller and Ragsdell (2012). This study modified relevant items from Waller and Ragsdell's questionnaire to measure participants' perceptions of their organization's attitude towards smartphone use. The items in the original questionnaire were only asking about email use. The items used in this study were modified to target smartphones and not just email. Some example items include "Is it a part of company working culture to be accessible at anytime/anywhere" and "If I send an email outside of office hours, I still expect a quick reply." A complete list of the measure's items can be found in Appendix E.

Dependent Variables

Work-life balance. This was measured using a scale created by Fisher (2001). The measure was developed to examine work interference with personal life, personal life interference with work, and work-personal life enhancement. This study examined how two of those categories influences the model (work interference with personal life, personal life interference with work life). To validate the measure they screened participants for social desirability using a questionnaire. This process was done to be sure that the subject matter experts (SME) rating the items in the work-life balance scale were able to determine which items were relevant to work-life balance and those that were not. This study's questionnaire included the items from their finalized survey. A Likert scale was used for answer responses. The scale consisted of the following responses "not at all, rarely, sometimes, often, almost all the time, not applicable" (Fisher, 2001, p. 188). This

scale was originally coded so that higher scores indicated a lower level of work-life balance. This scale was modified so that higher scores on the scale indicate high levels of work-life balance. For example, originally an answer of “almost all of the time” was given a score of 5. With the new scoring an answer of “almost all of the time” will be given a score of 1. The same modification was used in Hayman (2009) with the same scale. In addition, the titles for each section of the scale were changed from “work interference with personal life” to “work to personal life balance.” The complete measure can be found in Appendix F.

Job stress. This was measured using questionnaire items from the Stress in General Scale (Fisher, 2001). This scale was previously validated through research and shown to be correlated with the Job Stress Index. To achieve a more detailed look at stress levels the scale was changed from a three-point (yes, no, cannot decide) scale to a Likert scale. This questionnaire measures stress by looking at two dimensions of overall stress. The first is pressure, which is examining if something is demanding or hectic. The second dimension is threat, which is examining if something is nerve wracking, hassled, or overwhelming. The pressure part of the scale has an alpha level of .82, and the threat part of the scale has an alpha of .82 (Fisher, 2001). The complete measure can be found in Appendix G.

Life satisfaction. This was measured using a seven bipolar item scale that can be found in Greenhaus et al. (2003). The scale is designed so that there is one negative item and a positive item on two ends of the scale. The measure uses a Likert scale so the negative items are scored with a zero and the positive items are scored with a five. An example of this is “boring” (0) “interesting” (5). Research has found that the scale has an

alpha level of .83. (Greenhouse et al., 2003) A complete list of the measure can be found in Appendix H.

Job satisfaction. This was measured using the short form of the Minnesota Satisfaction Questionnaire. This is a popular and well-established questionnaire used to measure feelings about ones job. This short form contains 20 items that can be rated on a 5-point Likert scale that ranges from “very dissatisfied” to “very satisfied” (Weiss, et al., 1967). A complete list of the measure can be found in Appendix I.

CHAPTER III

Results

A reliability analysis was conducted to be sure that each of the new scales created were reliable. The reliabilities for each measure are located in Table 1.

Table 1
Reliabilities

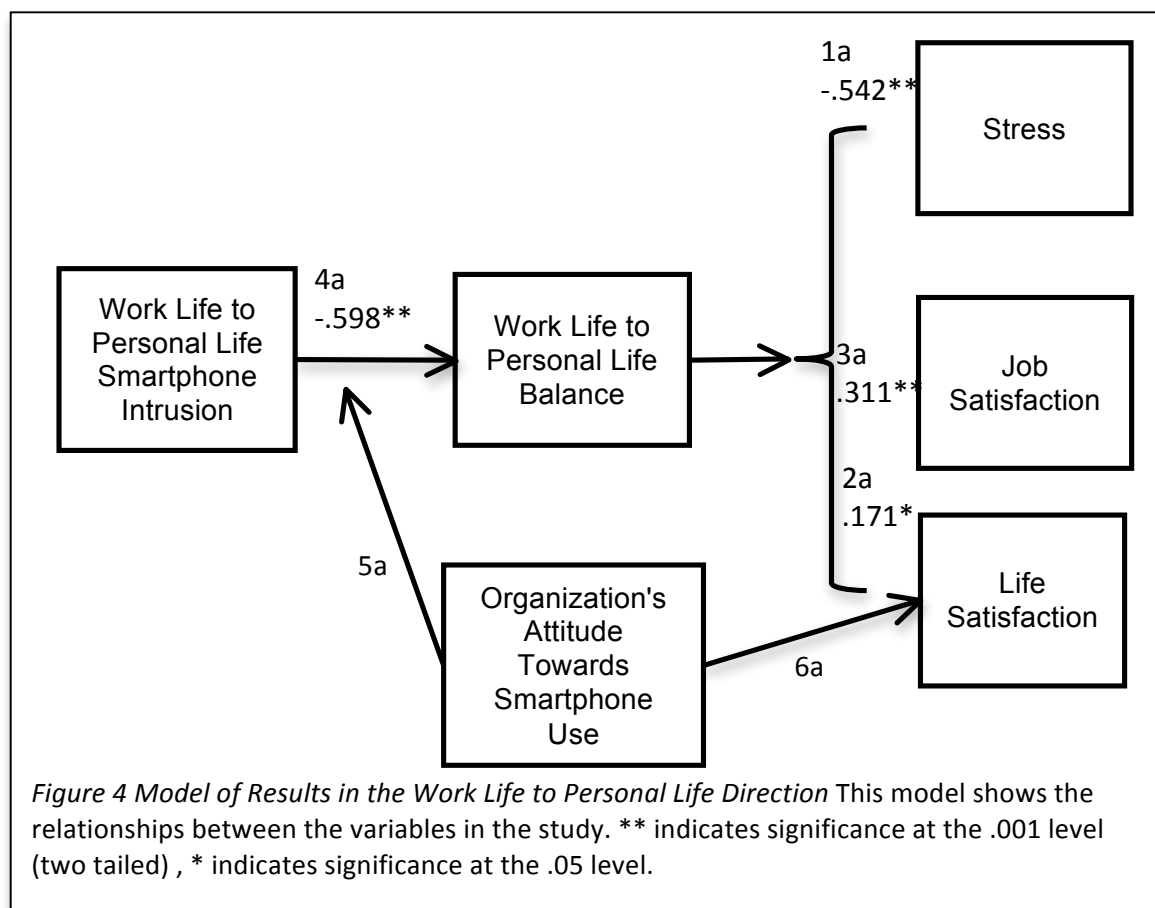
Measure	Cronbach's Alpha
PLWL Smartphone Intrusion	.812
WLPL Smartphone Intrusion	.781
PLWL Balance	.929
WLPL Balance	.902
Stress	.883
Job Satisfaction	.917
Life Satisfaction	.899
Organization's Attitude Towards Smartphone Use.	.873

Results for Hypotheses in the Work Life to Personal Life Direction

A complete table of the correlations for hypotheses examining the work life to personal life direction can be found in Appendix J. A complete list of the descriptive statistics are in Table 2. Hypothesis 1a, which examined the relationship between *work life to personal life balance* and *job stress* was significant ($r = -.60, p < .001$). This means that hypothesis 1a is supported. Hypothesis 2a examined the relationship between *work life to personal life balance* and *life satisfaction*. This relationship was significant so hypothesis 2a was supported ($r = .171, p = .015$). Hypothesis 3a examined the relationship between *work life to personal life balance* and *job satisfaction*. This relationship was significant so hypothesis 3a was also supported ($r = .31, p < .001$). Hypothesis 4a examined the relationship between *WLPL smartphone intrusion* and *work life to personal life balance*. This correlation was significant ($r = -.598, p < .001$) which supports hypothesis 4a. Figure 4 shows the resulting correlations and significance.

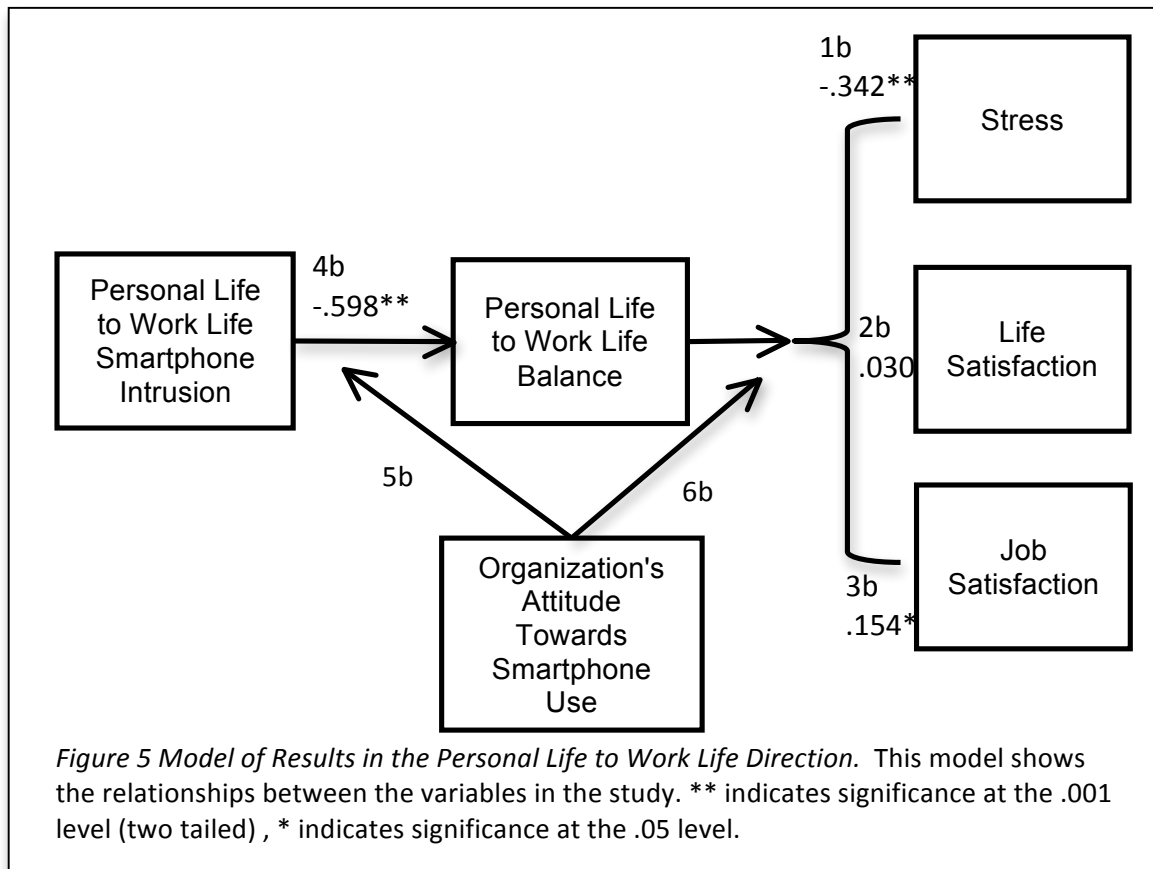
Table 2
Descriptive Statistics

	N	Minimum	Maximum	Mean	Standard Deviations
PLWL Smartphone Intrusion	202	1.14	4.21	2.63	.58
WLPL Smartphone Intrusion	202	1.14	4.07	2.68	.52
PLWL Balance	202	1.00	5.00	3.24	1.18
WLPL Balance	201	1.47	4.93	3.06	.79
Job Stress	202	1.47	4.73	2.81	.63
Job Satisfaction	202	1.20	5.00	3.72	.55
Life Satisfaction	202	1.00	5.00	4.01	.76
Organization's Attitude Towards Smartphone Use	202	1.00	5.00	3.24	1.18



Results for Hypotheses in the Personal Life to Work Life Direction

A complete table of correlations for the hypotheses examining the personal life to work life direction can be found in Appendix K. Hypothesis 1b was supported showing that there is a significant negative relationship between *personal life to work life balance* and *job stress* ($r = -.342, p < .001$). The relationship in hypothesis 2b was not supported. *Personal life to work life balance* has no relationship with *life satisfaction* ($r = .030, p = .674$). The relationship examined in hypothesis 3b was supported. *Personal life to work life balance* has a significant positive relationship with *job satisfaction* ($r = .154, p = .028$). The relationship between *PLWL smartphone intrusion* and *personal life to work life balance* examined in hypothesis 4b, was found to be significant ($r = .598, p < .001$). This means hypothesis 4b is supported. The full model of correlations and significance can be found in Figure 5.



Analysis of Moderating Relationships

Figure's 4 and 5 above show the moderating relationships that the following analyses found were significant. The analysis of hypothesis 5a (shown in figure 4) found that an *organization's attitude towards smartphone use* did strengthen the negative relationship between *WLPL smartphone intrusion* and *work life to personal life balance*. Overall all the IV's together account for a significant amount of the variance in *personal life to work life balance*, $R^2 = .49$, $F(3) = 64.41$, $p < .001$. When examining the individual variables *organization's attitude towards smartphone use* ($\beta = .23$, $t = -2.37$, $p = .370$), *WLPL smartphone intrusion* ($\beta = .04$, $t = .13$, $p = .898$) as well the interaction variable of *WLPL smartphone intrusion X organization's attitude towards smartphone use* all had a

significant impact on personal life to work life balance, ($\beta = -231, t = -2.47, p = .014$).

Since the interaction variable is significant, hypothesis 5a is supported.

The analysis of hypothesis 5b (shown in Figure 5) found that the *organization's attitude towards smartphone use* did strengthen the relationship between *PLWL smartphone intrusion* and *personal life to work life balance*. The full model which included both the independent variables as well as an interaction variable was significant, $R^2 = .45, F(3) = 64.41, p < .001$. When examining the individual variables, *organization's attitude towards smartphone use* ($\beta = .08, t = .60, p = .553$) did not have a significant impact on *personal life to work life balance*. However, *PLWL smartphone intrusion* did have a significant negative relationship with *personal life to work life balance* ($\beta = -.71, t = -5.52, p < .001$). The interaction variable also had significant impact on personal life to work life balance ($\beta = -.19, t = -4.89, p < .001$). This provides support for hypothesis 5b.

Three regressions were run to examine hypothesis 6a (illustrated in Figure 4). The first regression used *job stress* as the dependent variable. This analysis looked at if *organization's attitude towards smartphone use* strengthened the relationship between *work life to personal life balance* and *job stress*. The omnibus test which included both independent variables and an interaction variable was significant, $R^2 = .294, F(3) = 27.33, p < .001$). The *organization's attitude towards smartphone use* variable on its own did not significantly impact *job stress* ($\beta = -.027, t = -.13, p = .890$). However, the *work life to personal life balance* variable on its own did have a significant impact on *job stress*. ($\beta = -.46, t = -2.05, p = .041$). The interaction variable of *organization's attitude towards smartphone use X work life to personal life balance* did not have a significant

impact on *job stress*. ($\beta = .01, t = .14, p = .891$). Since the interaction variable is not significant, this means that an *organization's attitude towards smartphone use* does not strengthen the relationship between *work life to personal life balance* and *job stress*.

The second regression done used *life satisfaction* as the dependent variable. This analysis examined if an *organization's attitude towards smartphone use* strengthened the relationship between *work life to personal life balance* and *life satisfaction*. The omnibus test which used both independent variables, and the interaction variable from the last regression was significant, $R^2 = .133, F(3) = 10.01, p < .001$. When examining the individual variables impact on the model *organization's attitude* ($\beta = 1.26, t = 4.38, p < .001$) and *work life to personal life balance* ($\beta = 1.35, t = 4.45, p < .001$) both had significant impact on *life satisfaction*. When examining the impact of just the interaction variable on *life satisfaction* it was also significant ($\beta = -.30, t = -3.64, p < .001$). Since the interaction variable is significant this means that this part of hypothesis 6a is supported.

The last dependent variable examined was *job satisfaction*. This analysis examined if an *organization's attitude towards smartphone use* strengthens the relationship between *work life to personal life balance* and *job satisfaction*. The omnibus test which included the same independent and interaction variables as the first two regressions, was significant, $R^2 = .135, F(3) = 10.27, p < .001$. *Organization's attitude towards smartphone use* on its own had a significant impact on *job satisfaction* ($\beta = .36, t = 1.72, p = .086$). *Work life to personal life balance* on its own did not have a significant impact on *job satisfaction* ($\beta = .50, t = 2.3, p = .023$). However, when the interaction variable was examined it did not have a significant impact on *job satisfaction*

($\beta = -.06$, $t = -1.00$, $p = .318$). Since the interaction variable is not significant, this portion of hypothesis 6a is not supported.

After these three analyses, hypothesis 6a is partially supported. An *organization's attitude towards smartphone use* moderates the relationship between *work to personal life balance* and *life satisfaction*, however it does not moderate the relationship between *work life to personal life balance* and *job satisfaction* and *stress*.

Three regressions were run to examine hypothesis 6b (found in figure 5). The first regression used *job stress* as the dependent variable. This analysis examined if *organization's attitude towards smartphone use* strengthened the relationship between *personal life to work life balance* and *job stress*. The omnibus test, which included both IV's and an interaction variable was significant $R^2 = .15$, $F(3) = 11.84$, $p < .001$. When examining the individual variables *personal life to work life balance* ($\beta = -.52$, $t = -2.84$, $p = .005$) had a significant impact on *job stress*. The *organizational attitude towards smartphone use* variable on its own did not have a significant impact on *job stress* ($\beta = -.25$, $t = -1.30$, $p = 1.96$). Finally, the interaction variable of *organization's attitude towards smartphone use X personal life to work life balance* also had a significant impact on *job stress* ($\beta = .10$, $t = 2.06$, $p = .040$). Since the interaction variable was significant, this part of hypothesis 6b is supported. In other words, an *organization's attitude towards smartphone use* does moderate the relationship between *personal life to work life balance* and *job stress*.

The second regression that was done was with *job satisfaction* as the dependent variable. The omnibus test which included both independent variables used in the last regression plus an interaction variable had a significant impact on *job satisfaction*,

$R^2 = .08$, $F(3) = 5.46$, $p = .001$. When examining the individual variables *organizational attitude towards smartphone use* was found to be a significant contributor to *job satisfaction* on its own, ($\beta = .58$, $t = 3.36$, $p = .001$). In addition, the *personal life to work life balance* variable also had a significant impact on *job satisfaction*, ($\beta = .60$, $t = 3.61$, $p < .001$). Finally, the interaction variable also had a significant impact on *job satisfaction*, ($\beta = -.14$, $t = -3.15$, $p = .002$). Since the interaction variable was significant, *organization's attitude towards smartphone use* does moderate the relationship between *personal life to work life balance* and *job satisfaction*, so this part of hypothesis 6b is supported.

The last regression done was using *life satisfaction* as a dependent variable. The omnibus test which included the same two independent variables and interaction variable as before had a significant impact on *life satisfaction*, $R^2 = .14$, $F(3) = 10.79$, $p < .001$. When the individual variables are examined, *personal life to work life balance* ($\beta = 1.22$, $t = 5.47$, $p < .001$) and *organization's attitude towards smartphone use*, ($\beta = 1.31$, $t = 5.67$, $p < .001$) both had a significant impact on *life satisfaction*. Finally, the interaction variable also had a significant impact on *life satisfaction* ($\beta = -.32$, $t = -5.34$, $p < .001$).

Since all three of the interaction variables from the three regressions were significant, all of hypothesis 6b is supported. In conclusion, *organization's attitude towards smartphone use* moderates the relationship between *personal life to work life balance* and *job satisfaction*, *life satisfaction* and *job stress*.

Analysis of Mediating Relationships

Analyses were conducted to determine if the relationships between both smartphone intrusion variables, stress, life satisfaction and job satisfaction were fully or

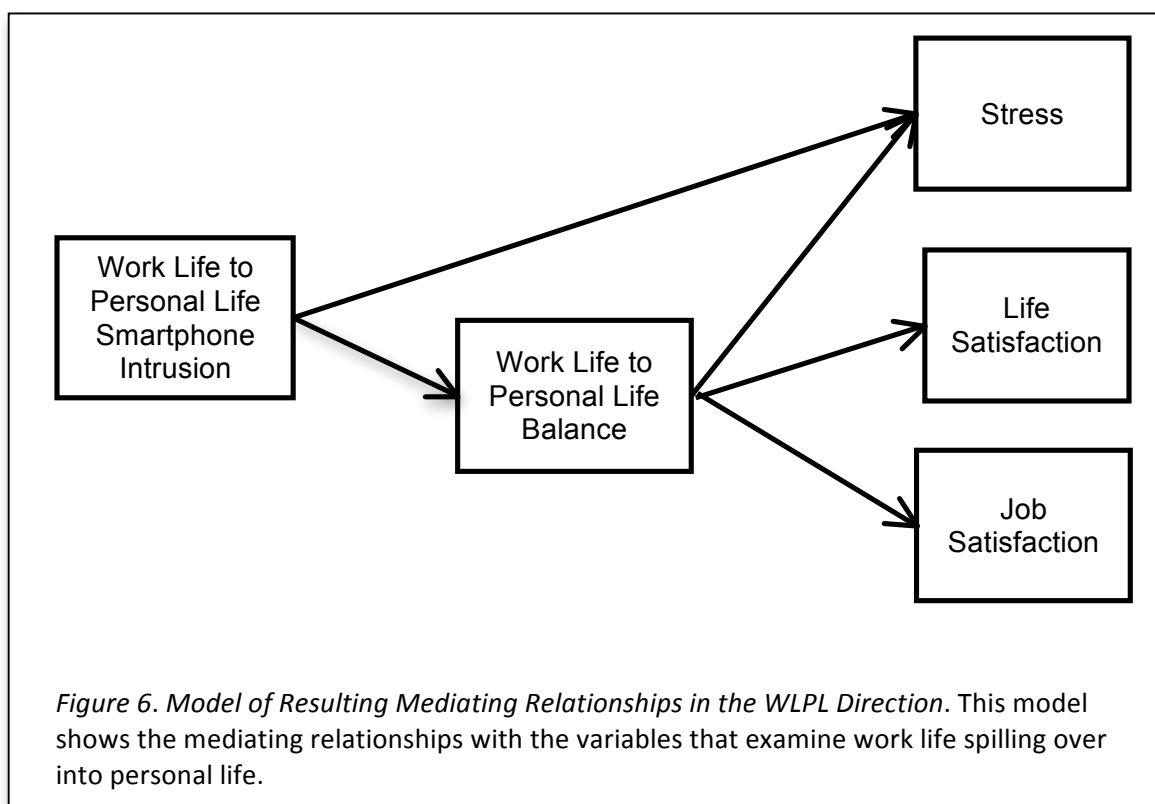
partially mediated by work-life balance. To begin the analyses, the hypotheses with variables dealing with work spilling over into personal life (work life to personal life balance and WLPL smartphone intrusion) were first examined. Starting with the relationship between *WLPL smartphone intrusion* → *work life to personal life balance* → *job stress*. In this scenario there is a partial mediation $R^2 = .31$, $F(2) = 45.31$, $p < .001$.

When the individual coefficients were examined the *WLPL smartphone intrusion* measure ($\beta = -.21$, $t = -2.41$, $p = .017$) and the *work life to personal life balance* measure ($\beta = -.52$, $t = -8.82$, $p < .001$) both significantly correlated to *job stress*. Since both of the coefficients were significant there is a partial mediation, so both *WLPL smartphone intrusion* and *work life to personal life balance* have an impact on *job stress*. A full mediation would exist if only *work life to personal life balance* had an impact on *job stress*.

The next analysis conducted was with the relationship between *WLPL smartphone intrusion* → *work life to personal life balance* → *job satisfaction*. Results indicated that there is a full mediating relationship occurring, $R^2 = .10$, $F(2) = 11.06$, $p < .001$. When the individual coefficients were examined it was found that *work life to personal life balance* ($\beta = .19$, $t = 3.18$, $p = .002$) was significantly impacting job satisfaction, but *WLPL smartphone intrusion* ($\beta = -.08$, $t = -.88$, $p = .382$) was not. Since *work life to personal life balance* did impact *job satisfaction* and *WLPL smartphone intrusion* did not there is a full mediation.

The last analysis for this direction of work spilling over into personal life was looking at *WLPL smartphone intrusion* → *work life to personal life balance* → *life satisfaction*. The analysis showed that there is a full mediation occurring,

$R^2 = .04$, $F(2) = 3.80$, $p = .024$. When the individual coefficients were examined it was found that *work life to personal life balance* ($\beta = .23$, $t = 2.71$, $p = .001$) has a significant impact on *life satisfaction* but *WLPL smartphone intrusion* ($\beta = .16$, $t = 1.24$, $p = .216$) does not have a significant impact on *life satisfaction* when *work life to personal life balance* is in the model. Figure 6 shows a graphic of the resulting mediating relationships.

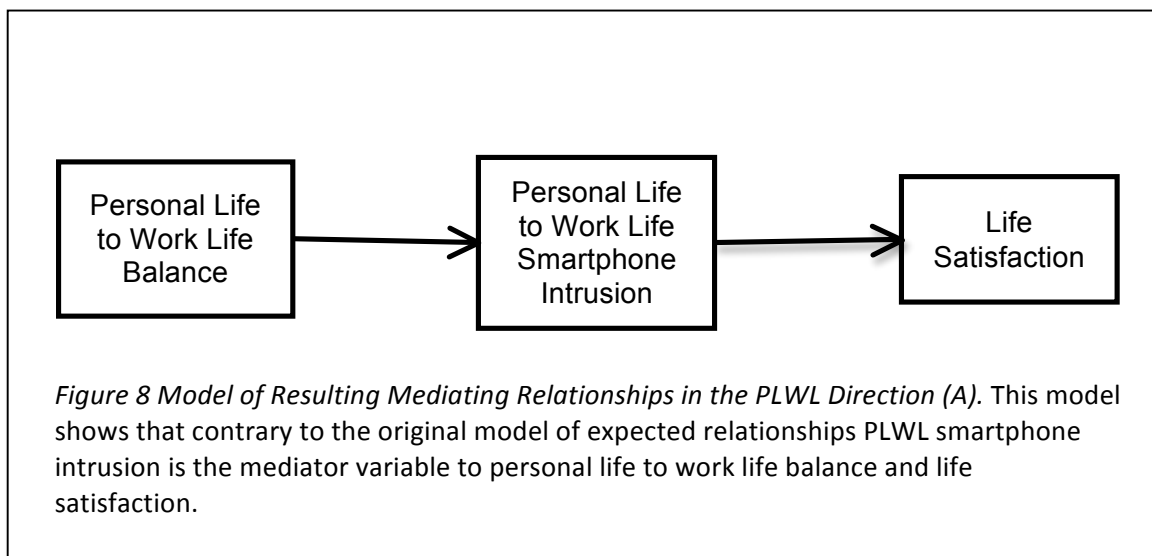
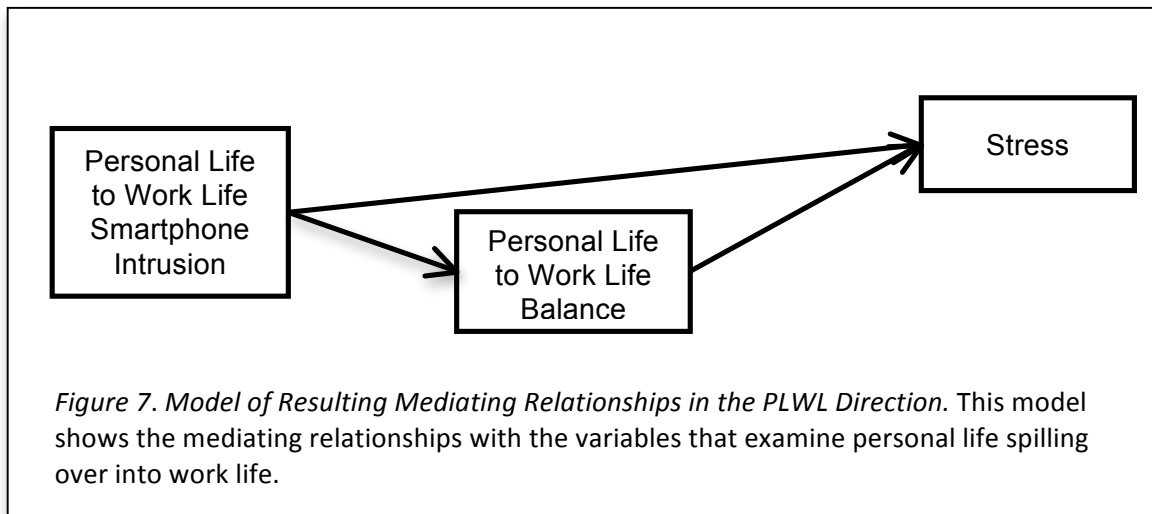


Analyses were then conducted on the hypotheses that involved variables about personal life spilling over into work life (personal life to work life balance, PLWL smartphone intrusion). The first of these relationships was *PLWL smartphone intrusion* → *personal life to work life balance* → *job stress*. It was found that there was a partial mediation, $R^2 = .15$, $F(2) = 17.78$, $p < .001$. When examining the individual coefficients

were it was found that both *PLWL smartphone intrusion* ($\beta = -.25, t = -2.84, p = .005$) and *personal life to work life balance* ($\beta = -.56, t = -5.90, p < .001$) have a significant impact on *job stress*.

The next analysis done was for *PLWL smartphone intrusion* \rightarrow *personal life to work life balance* \rightarrow *job satisfaction*. The analysis showed that *PLWL smartphone intrusion*, and *personal life to work life balance*, $R^2 = .03, F(2) = 2.71, p = .069$ are not significantly related to *job satisfaction*. Since the omnibus test was not significant the individual coefficients later in the analysis cannot be examined.

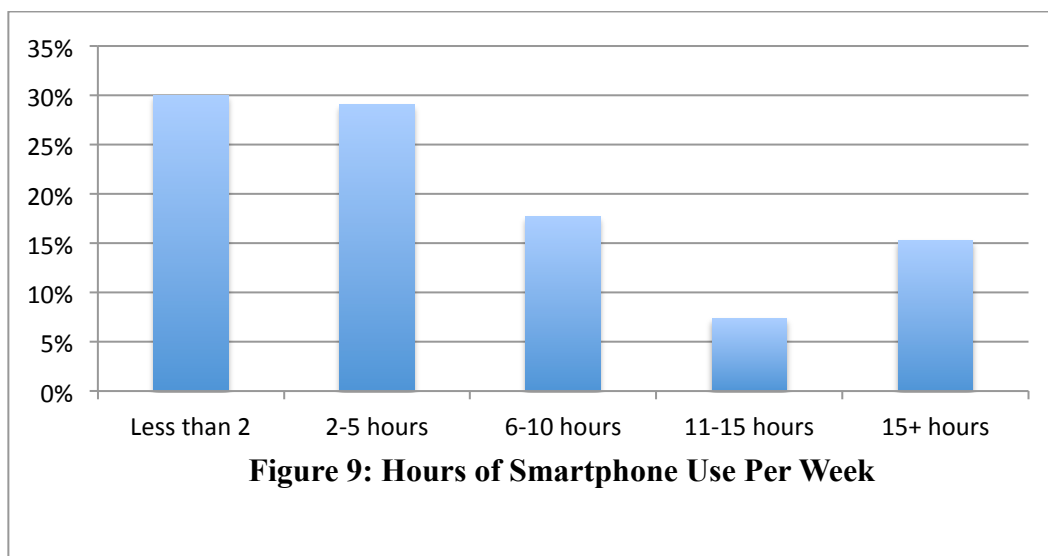
The last regression was to examine the following relationships: *PLWL smartphone intrusion* \rightarrow *personal life to work life balance* \rightarrow *life satisfaction*. The analysis showed that there was a full mediation, $R^2 = .03, F(2) = 3.27, p = .40$. Specifically the impact of *PLWL smartphone intrusion* on *life satisfaction* was significant ($\beta = .29, t = 2.52, p = .012$). However, the impact of *personal life to work life balance* on *life satisfaction* was not significant ($\beta = .10, t = 1.85, p = .066$). These analyses show that contrary to the other models in this study, *PLWL smartphone intrusion* is the mediator variable between *personal life to work life balance* and *life satisfaction*. A summary of the resulting mediating relationships can be found in Figures 7 and 8.

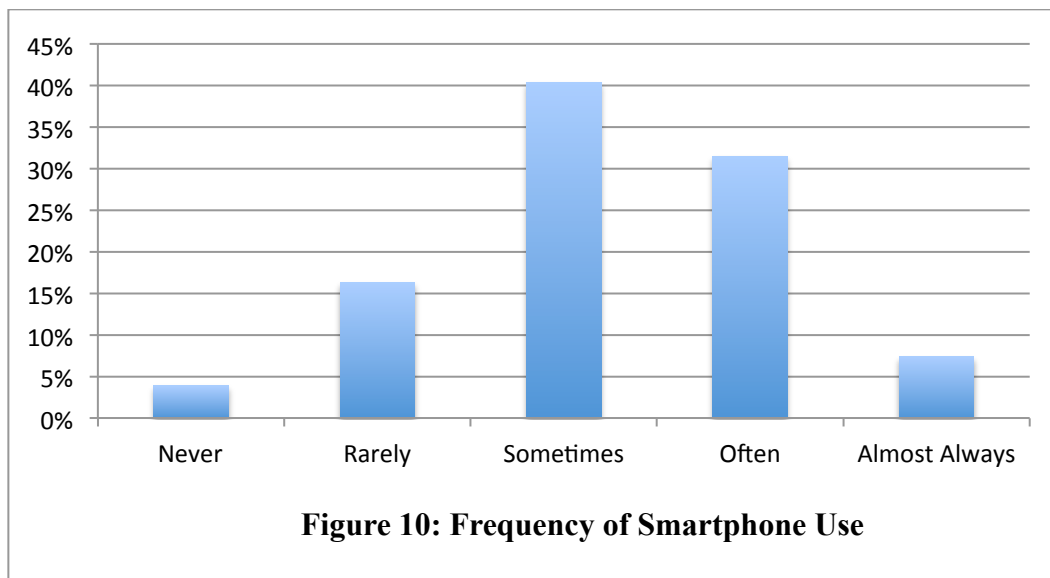


Analyses with Time Spent Using Smartphone

Some analyses were run to examine if the amount of time that someone spent using their smartphone for work activities during personal time was related to any of other variables in this study. Appendix L has the frequencies and percent data, and Appendix M has the complete list of correlations. Figures 9 and 10 contain a graphical representation of the hours and frequency that participants used their smartphone. When examining the amount of hours someone spent using their smartphone for work during

personal time, there were several interesting correlations. The number of hours was positively correlated with *WLPL smartphone intrusion* ($r = .269, p < .001$). In addition, the number of hours was positively related to *job stress* ($r = .205, p = .003$). So the more personal time that someone spends working on their smartphone, the more they feel that it is intrusive on their personal time, causing them to become more stressed. The number of hours was also negatively correlated with *work life to personal life balance* ($r = -.339, p < .001$). This means that people that spend more personal hours working on their smartphone tend to have less work life balance. In addition, the number of hours was negatively correlated with *personal life to work life balance* ($r = -.416, p < .001$) and positively correlated with *PLWL smartphone intrusion* ($r = .295, p < .001$). Therefore, smartphone use appears to have a role with people's personal life interfering with their work life. Number of hours was also positively correlated with *organization's attitude towards smartphone use* ($r = .367, p < .001$). This means that if an organization has a more demanding sense of urgency for getting work done that people will spend more hours working on their smartphone.





A second question about personal time spent using a smartphone for work was also asked. It examined the frequency that people used their smartphone to work. Answers ranged from never to almost always. This question also had significant correlations with other variables in this study. A complete list of the correlations is in Appendix N. The main findings consisted of the frequency of smartphone use being positively correlated with *WLPL smartphone intrusion* ($r = .218, p = .002$), *life satisfaction* ($r = .139, p = .049$), *job satisfaction* ($r = .161, p = .022$), *PLWL smartphone intrusion* ($r = .295, p < .001$) *organization's attitude towards smartphone use* ($r = .516, p < .001$), and *work life to personal life balance* ($r = -.261, p < .001$). This indicates that those who report using their smartphone for work during personal time tend to feel it is intrusive on their personal life. Additionally they tend to have higher *life satisfaction* and *job satisfaction* but lower *work life to personal life balance*. In addition the people that tend to work in organizations that have a more demanding sense of urgency for getting work done, report using their smartphone for work at a greater frequency.

CHAPTER IV

Discussion

Smartphones can have a detrimental impact on work-life balance. It seems that people who feel that their smartphone is intrusive on their personal life tend to have less work-life balance, more *job stress* and less *job satisfaction* as a result. Similar to other studies, (Shivananda & Ashock, 2012; Brough, O'Driscoll, & Kalliath, 2005) this one also found that *work life to personal life balance* was negatively related to *stress* and positively related to *job satisfaction* and *life satisfaction*. The relationship between *WLPL smartphone intrusion* and *work life to personal life balance* and continuing to *job stress* was very strong. This could cause employees to feel continuously burnt out because it seems like they are never really leaving work. This in turn could cause a decrease in performance and possibly increase turnover.

Continuing to the hypotheses in the personal life to work life direction, there seems to be similar results. First, there is a significant negative correlation with *personal life to work life balance* and *PLWL smartphone intrusion*. Which means that people that believe their smartphone is allowing their personal life to interrupt their work life tend to have less work-life balance. The correlations between *personal life to work life balance*, *stress*, and *job satisfaction* were similar to those in the work life to personal life direction. However, there was no correlation with *life satisfaction*. This result is contrary to the literature, which did show significant relationships between work-life balance and quality of life (Greenhouse, Collins, & Shaw, 2003; Reed & Clark, 2004). It is possible that life satisfaction is affected by a variety of other factors, which may have obscured its potential relationship with work-life balance. For example, how happy someone's

marriage is may impact their life satisfaction more than how much work-life balance they have.

However, there were significant negative relationships with *job stress* and a significant positive relationship with *job satisfaction*. This tells us that people that have more *personal life to work life balance* have less *job stress*, and more *job satisfaction*. A reason for results that are so similar may be due to the *PLWL smartphone intrusion* measure. It is very similar to the *WLPL smartphone intrusion measure*, only with the words work and personal life switched so that it is examining the other direction. This does show us that the intrusion can go both ways. It is not just work interrupting someone's personal life, it can go the other way around.

Contrary to the results by Waller and Ragsdell (2012), those who work for an organization that requires a great sense of urgency in responding to emails and voicemails etc., tend to be even less satisfied with their life and have even worse work-life balance. This could be because this kind of organizational culture will encourage employees to continue to use their smartphone for work outside of office hours. Although some jobs may require this, it is important that organizations consider the impact of unwritten rules and other norms.

Organization's attitude towards smartphone use also had a significant moderating relationship on the model for this direction of work-life balance. This relationship was true for the relationships between *PLWL smartphone intrusion* and *personal life to work life balance*. The negative relationship was strengthened when an organization required a prompt response to work matters outside of office hours. This could be because if the organization someone works for requires prompt responses outside of work, they may

expect even more prompt responses at work. So if someone gets messages or Facebook notifications from someone at home, it could interrupt their work and cause them to feel stressed. In addition, the negative relationship between *personal life to work life balance* and *job stress* was also strengthened by an *organization's attitude towards smartphone use*. Meaning that people that work for these kinds of organizations will be more stressed than someone who works somewhere that this prompt response is not required.

The results found in this study will have an impact on anyone who has the ability to do work from their smartphone. The findings from previous studies with email, or computers or PDA's are generally replicated here with smartphones (Brough, O'Driscoll, & Kalliath, 2005; Currie & Eveline, 2011; Waller & Ragsdell, 2012; Thurston, 2012). However, it is safe to say that the popularity of smartphones will likely expand the relevance of these findings. Today you do not have to be an executive, or consultant to have a phone with internet and email capabilities. Now it is quite common for an average person to have a phone with these capabilities. Knowing this, it is important that organizations are especially aware of how hourly employees are using their smartphones for work purposes. There are some jobs that employees cannot 100% ignore during their personal time. In this case it is important to communicate to them that they must not work without compensation. Due to the Fair Labor Standards Act any hours spent working on a smartphone while at work or at home must be compensated. (Milkovich, Newman, & Gerhart, 2011). However, if hourly employees have the ability to work from anywhere at anytime on a smartphone, this could end up being difficult if this rule is not communicated properly.

It is also important to recognize that this constant working culture that the smartphone has allowed to develop, could cause burnout in salaried employees. If someone is very motivated and driven to doing a great job they may spend a lot of time responding to emails on their smartphone, this could make them more prone to burnout. If someone is a good performer, this is not what an organization will want. They will want that person to be able to continue as long as possible. Failure to recognize that employees are “never really leaving work” could cause more stress, turnover, decreased job satisfaction etc. Park and Jex (2011) specifically mention that people that end up continuously working can experience things like emotional exhaustion, depressive symptoms, low life satisfaction and low job satisfaction.

Knowing this, organizations whenever possible, should encourage employees to take time to be away from work. For example, they could encourage them to do things like not check email on a Sunday, or to not respond late at night. A way this can be encouraged is through supervisor behavior (Carmeli, Sternberg, Elizur, 2008). If a supervisor refrains from emailing an employee late at night on the weekends then the employee will not feel obligated to respond to it, and may even not send them during those times either. Another possible suggestion is to not even connect work email to their personal smartphone, especially if it is not a necessity of the job. However, it is impossible for everyone to not connect work email to a smartphone. For many jobs it may be a critical component to job performance. In these cases individual employees should be aware of some of the consequences that exist. A possible way to cope could be to plan some time away from work relax. To further accommodate these employees the

employer can provide a separate smartphone. This will allow the employee to literally keep work life and personal life separate.

There are several related areas that future research should examine. First, with tablets becoming very popular, do they have the same impact as smartphones? This is possible because it would expand what employees are able to accomplish while on the go. With tablets it is much easier to do a wider variety of work, like write up word documents or type out long emails. In addition, there is a wide variety of productivity apps for tablets. These can be things like Microsoft Word, PowerPoint and Excel. The expanded capability makes it easier for someone to spend more time using their tablet for work. However, tablets are not as portable as smartphones, so people do not typically take their tablet everywhere with them. While there are a few people that do, it is not the norm. This lack of portability could hinder how intrusive people feel working on a tablet is to their personal life. If they are able to go to dinner with family and leave it behind it should not cause as many problems.

Are there particular industries or jobs that are worse than others? For example, people that work in consulting will constantly be using technology to communicate with clients and coworkers because they are in different locations. Whereas, someone who works in a training department of a company may not use a smartphone as much because they are already in the same location as their coworkers.

Does the extra time spent working on a smartphone actually improve productivity and performance? This could be possible because getting a glimpse into what is coming Monday morning may help people deal with chaos better. In addition it could help their work team. It could be very helpful if a manager can be contacted outside of work hours

to answer a quick question for their team. This could increase the productivity of the team because they do not have to spend an hour trying to figure out the answer to something that their boss can clear up for them in five minutes.

Is there any sort of relationship with the healthcare costs that the company has? Do employees that do not have smartphones or do not use them for work have better health? In theory, this could be possible because they should be less stressed out. If someone were more stressed out due to work they may be more likely to not exercise and not have a healthy diet as a result.

How does the work-life balance, stress, job satisfaction and of someone with a smartphone compare to someone who does not have one? It is possible that people that are still living the simple life with cell phones that only make phone calls could be better off. Their work will be less interrupted by personal notifications like Facebook and text messaging. In addition, their personal life is not constantly being interrupted by work email. However, they are without the modern conveniences that smartphones offer. For example, it is very easy to find a place to eat in a new city. Not only is it easy to make the decision but also to find the restaurant.

These modern conveniences are the reason why smartphones are certainly here to stay. Even with all the negative consequences they have become an integral part of modern life. Many people even wonder how they ever lived without one. The lesson to learn here is to always remain in control of it. It is a piece of technology that can be turned off! If it gets too bothersome or does more bad than good hit the power button and it all will end.

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APPENDICES

Appendix A: Manipulation Check Questions

The following questions will be scattered throughout the survey to be sure participants are accurately filling out the survey.

1. Please answer strongly agree for this item.
 - a. Strongly Disagree
 - b. Disagree
 - c. Neutral
 - d. Agree
 - e. Strongly Agree
2. Please answer dissatisfied for this item.
 - a. Very dissatisfied
 - b. Dissatisfied
 - c. Neutral
 - d. Satisfied
 - e. Very Satisfied
3. Please answer “not at all” for this item
 - a. Not at all
 - b. Rarely
 - c. Sometimes
 - d. Often
 - e. Almost all the time
 - f. Not applicable
4. Please answer “sometimes” for this item
 - a. Not at all
 - b. Rarely
 - c. Sometimes
 - d. Often
 - e. Almost all the time
 - f. Not applicable

Appendix B: Demographic Questions

1. Do you own a smartphone (ex: iPhone, Android, Windows phone, Blackberry ect.)
2. What is your age?
3. What is your gender?
4. Have your received a text message, call, or email while completing this survey?
5. Does your employer provide your smartphone?

Appendix C: Level of Smartphone Intrusion

Definition of smartphone: “ a device that combines a cell phone with a hand-held computer, typically offering Internet access, data storage, e-mail capability, etc.” (<http://dictionary.reference.com/browse/smartphone>).

Instructions: Rate the following statements based on your **personal time**. This is time that is not typically, or supposed to be dedicated towards work activities.

Scale: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

* The items in italics are reverse scored.

Work Life to Personal Life Smartphone Intrusion

I can control how often I use my smartphone, during my personal time for work.

I am happy with how much I use my smartphone for work during my personal time.

I am not bothered by using my smartphone for work during my personal time.

I feel that using my smartphone for work activities during my personal time adds to my productivity.

I feel that using my smartphone for work activities during my personal time is ultimately beneficial to all areas of my life.

My smartphone makes my work life easier.

I feel using my smartphone for work invades my personal life.

I feel my smartphone being used for work during personal time is overwhelming.

My personal time is regularly interrupted by work activities because of my smartphone.

Using my smartphone for work causes me to feel overwhelmed.

I often use my smartphone for work during my personal time.

I wish my smartphone did not have to be used for work during my personal time.

I feel using my smartphone for work during personal time interferes with my personal life.

Alerts from work on my smartphone interrupt important activities in my personal life.

Work Life to Personal Life Smartphone Intrusion

I can control how often I use my smartphone for personal reasons during work time.

I am happy with how much I use my smartphone for personal reasons during my work time.

I feel that using my smartphone for personal life activities during my work time is ultimately beneficial to all areas of my life.

My smartphone makes my personal life easier.

I am not bothered by using my smartphone for personal activities during work time.

I feel using my smartphone for personal time invades my work life.

I feel my smartphone being used for personal reasons during work time is overwhelming.

My work time is regularly interrupted by personal activities because of my smartphone.

Using my smartphone for personal life causes me to feel overwhelmed.

I often use my smartphone for personal activities during work time.

I wish my smartphone did not have to be used for personal reasons during work time.

I feel using my smartphone for personal reasons during work time interferes with my work life.

Alerts from my personal life on my smartphone interrupt important activities in my work life.

I feel that using my smartphone for personal activities during my work time decreases to my productivity.

Appendix D: Time Spent Using Smartphone

The following questions are asking about smartphone use for work related activities (email, text messages, calls, etc.) during **personal time only**. Personal time includes any time that is not meant to be dedicated to work related activities.

1. On average how many hours a week do you spend using your smartphone for work during personal time?
 - a. Less than 2 hours
 - b. 2-5 hours
 - c. 6-10 hours
 - d. 11-15 hours
 - e. Over 15 hours
2. During an average week how often do you use your smartphone for work related activities during personal time?
 - a. Never
 - b. Rarely
 - c. Sometimes
 - d. Often
 - e. Almost always

Appendix E: Organization's Attitude Towards Smartphones Measure
Adapted from Waller and Ragsdell (2012) pg. 173-175

Each statement will be rated with the following scale: "not at all", "rarely", "sometimes", "Often", "almost all the time", "not applicable"

1. Does your organization expect you to work outside of office hours?
2. Do you feel an urge to use your smartphone for work outside of working hours?
3. Does using your smartphone for work related interactions received outside of office hours, result in you having to do work outside of office hours?

Each question will be rated on the following scale "strongly disagree, disagree, neutral, agree, strongly agree"

4. It a part of the company working culture to be accessible at anytime/ anywhere.
5. If I contact a coworker about a work related matter during an out of office hour on Friday I expect a reply before Monday.
6. My work is dependent on using my smartphone to do work outside of office hours.
7. My work is dependent on me completing work related tasks outside of office hours.

Work Team Norms Questions

Each question will be rated with the following scale: "strongly disagree, disagree, neutral, agree, strongly agree"

8. My work team expects me to work outside of office hours.
9. It is a part of my work team's culture to be accessible at anytime/ anywhere.
10. If I send a reply to an email, text, or voicemail, I expect a quick reply.

Appendix F: Work-Life Balance Scale
Adapted from Fisher (2001) p. 188-189

Each statement will be rated with the following scale: “not at all” (5), “rarely” (4), “sometimes” (3), “Often” (2), “almost all the time” (1), “not applicable” (0)

Work Life to Personal Life Balance

1. I struggle with trying to juggle both my work and non-work responsibilities.
2. I feel overwhelmed when I try to balance my work and personal life.
3. I have difficulty scheduling vacation time because of my workload.
4. I am unable to relax at home because I am preoccupied with work.
5. I am happy with the amount of time I spend doing activities not related to work.
6. I often have to make difficult choices between my work and my personal life.
7. I have to put aspects of my personal life “on hold” because of my work.
8. I am able to accomplish what I would like in both my personal and work lives.
9. I often neglect my personal life needs because of the demands of my work.
10. My personal suffers because of my work.
11. I have to miss out on important personal activities due to the amount of time I spend doing work.
12. I feel that I allocate appropriate amounts of time to both work and non-work activities.
13. I make personal sacrifices to get work done.
14. I come home from work to tired to do things I would like to do.
15. My job makes it difficult to maintain the kinds of personal life I would like.

Personal Life to Work Life Balance

1. My personal life drains me of the energy I need to do my job.
2. My work suffers because of everything going on in my personal life.
3. I am too tired to be effective at work because of things I have going on in my personal life.
4. When I am at work I worry about things I need to do outside of work.
5. I have difficulty getting my work done because I am preoccupied with personal matters at work.

Appendix G: Job Stress
Adapted from Fisher (2001) p. 191

Instructions: think about your present job. How well does each of the following words or phrases describe it?

1 not at all

2 rarely

3 sometimes

4 often

5 almost all the time

Demanding

Pressured

Hectic

Calm

Relaxed

Many things stressful

Pushed

Irritating

Under Control

Nerve-racking

Hassled

Comfortable

More stressful than I'd like

Smooth Running

Overwhelming

Appendix H: Life Satisfaction

Adapted from Fisher (2001)

Rate the seven items that relate to “how you feel about your present life”

Boring	1	2	3	4	5 Interesting
Miserable	1	2	3	4	5 Worthwhile
Empty	1	2	3	4	5 Full
Discouraging	1	2	3	4	5 Hopeful
Disappointing	1	2	3	4	5 Rewarding
Hard	1	2	3	4	5 Easy
Tied Down	1	2	3	4	5 Free

Appendix I: Job Satisfaction Measure
Adapted from Weiss, et al., (1967) p.111

All statements are rated on the following scale: “very dissatisfied, dissatisfied, neutral, satisfied, very satisfied.”

On my present job, this is how I feel about...

1. Being able to keep busy all the time
2. The chance to work alone on the job
3. The chance to do different things from time to time
4. The chance to be “somebody” in the community
5. The way my boss handles his/her workers
6. The competence of my supervisor in making decisions
7. Being able to do things that don't go against my conscience
8. The way my job provides steady employment
9. The chance to do things for other people
10. The chance to tell people what to do
11. The chance to do something that makes the most of my abilities
12. The way company policies are put into practice
13. My pay and the amount of work I do
14. The chances for advancement on this job
15. The freedom to use my own judgment
16. The chance to try my own methods of doing the job
17. The working conditions
18. The way my co-workers get along with each other
19. The praise I get for doing a good job
20. The feeling of accomplishment I get from the job

Appendix J: Correlations for Variables in the Work Life to Personal Life Direction

Measure	1	2	3	4	5
1. WLPL Smartphone Intrusion	---	-.598**	.204**	-.029	-.223**
2. WLPL Balance	-.598**	---	-.542**	.171*	.311**
3. Job Stress	.204**	-.542**	---	-.419**	-.386**
4. Life Satisfaction	-.029	.171*	-.419**	---	.429**
5. Job Satisfaction	-.223**	.311**	-.386**	.429**	---

Note.

** *Correlation is significant at the .01 level (2-tailed).*

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

Appendix K: Correlations for Variables in the Personal Life to Work Life Direction

Measure	1	2	3	4	5
1. Job Stress	---	-.419	-.386**	-.342**	.056
2. Life Satisfaction	-.419**	---	.429**	.030	.123
3. Job Satisfaction	-.386**	.429**	---	.154*	-.051
4. PLWL Balance	-.342**	.030	.154*	---	-.598**
5. PLWL Smartphone Intrusion	.056	.123	-.051	-.598**	---

Note.

***.* Correlation is significant at the .01 level (2-tailed).

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

Appendix L: Hours and Frequency of Smartphone Use Descriptive Statistics

Hours	Frequency	Percent
Less than 2	61	30%
2-5	59	29%
6-10	36	18%
11-15	15	7%
15+	31	15%

Frequency of Smartphone Use	Frequency	Percent
Never	8	4%
Rarely	33	16%
Sometimes	82	40%
Often	64	31%
Almost Always	15	7%

Appendix M: Correlations for Time Spent Using a Smartphone

Measure	1	2	3	4	5	6	7	8
1. Time (hours)	---	.269**	.295**	.205**	.029	-.033	-.339**	-.416**
2. WLPL Smartphone Intrusion	.269**	---	.588**	-.180*	-.103	.061	-.598**	-.551**
3. PLWL Smartphone Intrusion	.295**	.588**	---	.056	.123	-.051	-.497**	-.598**
4. Job Stress	.205**	-.180*	.056	---	-.419**	-.386**	-.542**	-.342**
5. Life Satisfaction	.029	-.103	.123	-.419**	---	-.419**	.171*	.030
6. Job Satisfaction	-.033	.061	-.051	-.386**	-.419**	---	.311**	.154*
7. Work Life to Personal Life balance	-.339**	-.598**	-.497**	-.542**	.171*	.311**	---	.753**
8. Personal Life to Work Life Balance	-.416**	-.551**	-.598**	-.342**	.030	.154*	.753**	---

Note.

***.* Correlation is significant at the .01 level (2-tailed).

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

Appendix N: Correlations for Frequency of Smartphone Use

Measure	1	2	3	4	5	6	7	8
1. Time (frequency)	---	.218**	.213**	.061	.139*	.161*	-.261**	-.315**
2. WLPL Smartphone Intrusion	.218**	---	.588**	-.180*	-.103	.061	-.598**	-.551**
3. PLWL Smartphone Intrusion	.213**	.588**	---	.056	.123	-.051	-.497**	-.598**
4. Job Stress	.061	-.180*	.056	---	-.419**	-.386**	-.542**	-.342**
5. Life Satisfaction	.139*	-.103	.123	-.419**	---	-.419**	.171*	.030
6. Job Satisfaction	.161*	.061	-.051	-.386**	-.419**	---	.311**	.154*
7. Work Life to Personal Life balance	-.261**	-.598**	-.497**	-.542**	.171*	.311**	---	.753**
8. Personal Life to Work Life Balance	-.315**	-.551**	-.598**	-.342**	.030	.154*	.753**	---

Note.

***.* Correlation is significant at the .01 level (2-tailed).

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

Appendix O: IRB Approval

3/19/2014

Investigator(s): Tricia Harris & Dr. Patrick McCarthy,
Department: Industrial/Organizational Psychology
Investigator(s) Email Address: trh4j@mtmail.mtsu.edu, Patrick.Mccarthy@mtsu.edu
Protocol Title: Impact of Smart Phones on Work-Life Balance

Protocol Number: #14-295

Dear Investigator(s),

Your study has been designated to be exempt. The exemption is pursuant to 45 CFR 46.101(b)(2) Educational Tests, Surveys, Interviews, or Observations.

We will contact you annually on the status of your project. If it is completed, we will close it out of our system. You do not need to complete a progress report and you will not need to complete a final report. It is important to note that your study is approved for the life of the project and does not have an expiration date.

The following changes must be reported to the Office of Compliance before they are initiated:

- Adding new subject population
- Adding a new investigator
- Adding new procedures (e.g., new survey; new questions to your survey)
- A change in funding source
- Any change that makes the study no longer eligible for exemption.

The following changes do not need to be reported to the Office of Compliance:

- Editorial or administrative revisions to the consent or other study documents
- Increasing or decreasing the number of subjects from your proposed population

If you encounter any serious unanticipated problems to participants, or if you have any questions as you conduct your research, please do not hesitate to contact us.

Sincerely,

Lauren K. Qualls, Graduate Assistant

Office of Compliance

615-494-8918