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EPM Effects on Workplace Well-Being: The Role of Personality

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CHRISTOPHER CHARLES ROBINSON



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Abstract

Within the workplace, electronic performance monitoring (EPM) is an electronically integrated system used to assess employee behaviours and ultimately performance. Previous research indicates EPM is associated with various negative psychosocial effects due to job roles being inherently changed with the use of these systems. However, research has yet to explore whether an individual's characteristics can also be attributable for influencing these outcomes. Therefore, the aim of this research was to investigate whether personality factors could moderate or mediate the negative effects of electronic performance monitoring.

Using a quantitative survey methodology this project acquired 112 participants to assess the relationship between the amount of EPM they were exposed to and the levels of trust in senior management, affective commitment and self-perceived stress. The participants also completed the Conscientiousness and Emotional Stability scales from the Five Factor of Personality and a shortened version of Rotter's Locus of Control. Regression, Moderation, mediation and MANCOVA analysis were conducted to assess whether the personality factors held moderating or mediating attributes.

The findings indicated that greater amounts of EPM did not predict lower levels of trust, commitment or an increase in stress. Furthermore, the Conscientiousness personality factor held no bearing on the negative effects of EPM, whereas Emotional Stability moderated the effects of trust and modestly mediated commitment and stress. The Locus of Control was also found to have influenced employees' levels of trust.

The current findings suggest the use of electronic performance monitoring does not radically change the job design to a degree where employees experience a decline in well being at work. However, whether the organisation's intention to use EPM is for supportive or punitive purposes is likely to have been a pivotal factor in how the systems are perceived. This highlights the need for policies and clear communication detailing why the information will be collected and how it will be used. In addition, some personality factors were found to be modest factors contributing to negative effects of EPM. In practice, this finding suggests occupations requiring intensive monitoring may be more appropriate for those with greater levels of emotional stability and who possess an internal Locus of Control.

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Chapter One: Introduction

Background

Organisations are assembled to meet objectives and this requires personnel to be overseen by managerial custodians. One aspect of this role is the monitoring of performance which has been done conventionally through a physical presence of a manager but can now be done in greater detail through the use of computerized technology. Previous work on this topic indicates the use of such technology is associated with decreased well being as electronic monitoring the performance of staff negatively affects their level of trust with management, decreases their feelings of commitment towards the organisation and increases stress. However, research has yet to investigate whether an individual's characteristics can play a role within this relationship. Therefore, this research seeks to test whether personality can also be a factor which contributes to the outcomes of electronic monitoring.

Electronic Performance Monitoring

Monitoring the workplace is not a new phenomenon and the exercise is immanent within the context of business. The modern application is made up of monitoring instruments that are embedded within systems and processes that are used to acquire information pertaining to the workplace, including that of human behaviour (Covert & Thompson, 2014). More recently workplace monitoring has been substantially enhanced through advancements in audio, video, tracking and motion sensor technologies. The instruments now entail features that can oversee productivity and the general performance of staff in minute detail. Within psychology literature and the associated fields encompassing organisational behaviour, the use of technology for monitoring purposes has come to be known as electronic performance monitoring (EPM) (Alge, 2001).

EPM is considered to be commonplace in the modern environment though its development may not have been designed for the sole purpose of monitoring employees (Jeske & Santuzzi, 2015). The inception is more likely to be byproduct stemming from the proliferation of computerization which has seen technology become assimilated into every aspect of the work

environment. Reviewers Cascio & Montealegre (2016) have referred to this theme as the ‘Internet of Things’ and in their words the phenomenon is occurring because:

Organizations are equipping machinery, shipments, infrastructure, devices, and even employees with networked sensors and actuators that enable them to monitor their environment, report their status, receive instructions, and take actions based on the information they receive. (p.357).

As a result of monitoring systems being woven into the environment, managers have inherited the ability to collect and collate data which can be used to assess both behaviours they should and should not be doing. The information can then be analyzed in order to set productivity objectives, evaluate employee performance and in turn provide basis for inferring future performance.

Recent reports conducted in the US and Australia convey that presently, electronic monitoring features within most industries in one form or another and affects some 80 percent of the workforce (Tomczak et al., 2018; Holland et al., 2015). The prevalence of monitoring technology appears to coincide with the maturation of the internet which has been fundamental in changing the environmental and social dynamics of the workplace. As such, social acceptance of these changes along with the accessibility of these systems have enabled organisations of all sizes to acquire and implement EPM without experiencing social disturbances nor requiring significant financial investment (Holland et al., 2015; Watkins Allen et al., 2007).

Authors Smith & Tischler (2015) use smartphones to exemplify that the role of technology has fundamentally changed workplace dynamics and brought with it concomitant issues. The authors argue that smartphones have become central components to an organisations operations due to the computing power, software versatility, internet and network connectivity. However, they have also become multifaceted threats as they are insecure platforms and entertainment centers infused with video, gaming and social connectivity abilities which has led to organisational concerns over “employee efficiency, focus, and information, as well as product security” (Smith & Tischler, 2015, p.73). As such, the personal devices are often found to be at the center of surveillance investigations which have led to employment dismissal and litigation which serves as an example as to how the advances in electronic equipment have reshaped the modern

environment. On the contrary, this illustration also represents how technology has become a threat to an organisations survival thus providing rationale for applying EPM from an employers perspective.

The reasons for implementing EPM varies, an argument put forth by Ball (2010) suggests management mostly seek to maintain productivity, monitor resource usage and protect corporate interests whilst managing the risk of defamation, litigation, theft and sabotage. Whereas, a more refined account of antecedents leading to the implementation of EPM is provided by Jeng-Chung & William (2005) who conceptualize with well-founded support why organisations are inclined to use the systems. The authors identify various factors which either support or deter the preference to employ EPM, namely the organisation's culture, their human resource strategy and the estimated impact on their organisation in terms of social facilitation, stress reactions and anticipated employee attitudes (Jeng-Chung et al., 2005).

However, the practice of EPM is not wholly regarded as negative because research can be found in support of positive outcomes. This is due to EPM being capable of collecting, synthesizing and reporting data accurately thereby enabling identification of good performers, training needs or detrimental behaviour which collectively assists in managerial decision making (Tomczak, Lanzo & Aguinis, 2018). Furthermore, there are empirical findings to support the relationship between EPM and improved productivity (Bhave, 2014; Kolb & Aiello, 1997). Albeit researchers Kolb & Aiello (1997) concluded their experiments either accentuated or exacerbated participants prior abilities, whereas Bhave (2014) determined their productivity increase was likely to have been confounded by dyadic engagement rather than being solely the effect of technological monitoring. Moreover, studies corroborating similar positive results appear scarce.

On the contrary, there is more substantiated findings that indicate EPM simultaneously brings about negative effects. This is due to collection techniques having the ability to capture more data than required, ambiguous communication as to why data is collected, the collection process is open to abuse and data that is collected is accessible in real time thus mistakes are unable to be corrected (Ball, 2010; Chen & Ross, 2007). Furthermore, there are numerous empirical studies in support of employees' perceptions and behaviours being negatively affected by the use of EPM. Researchers Holland et al (2015) found EPM was negatively related with trust in management and the amount of EPM increased the levels of distrust. Whereas, Becker & Marique

(2014) found EPM reduced performance quantity on both simple and complex tasks whilst Aiello & Kolb (1995) found EPM induced the feeling of self-perceived stress. Furthermore, due to the compartmentalization and quantification processes inherent to monitoring, these issues are compounded by increased job demands, reduced autonomy and lessened social support, all of which are considered to be factors contributing to burnout (Coover & Thompson, 2014).

Occupations are monitored through differentiated techniques and to different degrees resulting in varied experiences for the employee. In previous times, workplace monitoring has generally encompassed simple applications such as computer surveillance within clerical and call center occupations whereas today there are more invasive technologies available or under development (Jeske & Santuzzi, 2015; Ball, 2010). Reviewers Cascio & Montealegre (2016) have considered the impending changes that are likely to occur to the future workplace when artificial intelligence, big data and robotics become integrated. They postulate advancements in artificial intelligence alone is going to allow robots to become coworkers and social actors that have the capacity to transmit information and make real time decisions during their commission. Furthermore, by extrapolating current trends to this scenario, the coworking robots will have an ability to acquire and report data relevant to human performance direct from the immediate environment and thus from an insider's perspective which are likely to have unknown consequences.

In other areas of development, Ball (2010) describes the pervasiveness of a biometric monitoring technology developed and patented by Microsoft prior to 2010. Through the use of wireless sensors, management can monitor "heart rate, galvanic skin response, EMG, brain signals, respiration rate, body temperature, movement, facial movements, facial expressions and blood pressure" (Ball, 2010, p.92). The data can then be used to assess physiological responses such as stress under various environmental conditions. In other lines of developments, Atallah & Yang (2009) discuss how pervasive technologies woven into the social fabric have enabled the observation of actions, activities and interactions under natural living and working conditions. Moreover, they express the challenge is no longer data acquisition but using the data to better understand patterns of human behaviour. Subsequently, their article theoretically surveys probabilistic models of behaviour to assist in determining what methods are best suited to profile behaviour under various conditions.

Predicting what monitoring technologies will become commonplace and how they will be applied in the future organisation is speculative at best. Though the effects of relatively simple monitoring systems used presently have been found to cause issues for employees. This is summarized by authors Akhtar & Moore (2016) who accentuate these concerns by declaring the unrestrained use of EPM on human resources is “dehumanizing employees” thus leading to poor psychosocial conditions, loss of positive organisational behaviours and ultimately staff turnover. Therefore, it remains important that investigations continue to explore the relationship between EPM and its effects on people. Previous research has centered on the effects of EPM and more recently begun to explore contextual factors. However, research has yet to investigate how the characteristics of people may also influence this relationship therefore this project seeks to investigate whether personality can moderate or mediate the negative effects of EPM which will further what is known about its effects on people and how the characteristics of people contribute to the development of these negative effects.

Job Characteristics Model

In order to understand how EPM has its effects on employees, this thesis utilizes the Job Characteristics Model (JCM) by Hackman and Oldham (Taylor, 2015). The Job Characteristics Model indicates that the job design influences critical psychological states which leads to improved employee motivation, performance and satisfaction. In further detail, the model indicates when the design of the job allows employees to have the ability to use a variety of skills, identify with and attach meaning to the task can impact the development of a psychological state of meaningfulness which in turn enhances internal motivation. Likewise, when the job design provides the employee with autonomy they experience a greater sense of responsibility for the work outcomes which in turn improves the quality of performance. Furthermore, when feedback is a part of the role they are informed of their efforts which promotes feelings of satisfaction. In summary, these are aspects of the job design which can be modified to ensure employees experience challenge, growth and satisfaction. However, the inherent design of electronic performance monitoring appears to change these facets of the job design which inhibits employees experiencing these positive psychological states. This is because the preference to quantify production, services and performance can constrain the use of skill and remove autonomy as each component of the job is segregated and measured. Furthermore, the compartmentalization inherent to EPM can also isolates employees

because the systems can substitute the supervisor providing interpersonal oversight. Therefore, the change brought about by EPM to the job design hinders the development of these critical psychological states and has the potential to reverse the positive outcomes.

Application of the JCM.

The range of methods used for EPM is put forward by Ball (2010) who states monitoring methods often include; measuring resource usage, keystroke logging, productivity output, radio frequency identification cards, GPS, video surveillance and communication content monitoring relative to web/email/phone. These methods are reaffirmed by Chen & Ross (2007) who also adds to the discussion that they are idiosyncratic to the overarching industry. They exemplify that a GPS system can be applied to vehicles in order to monitor driver productivity by ensuring the driver stays on the prescribed route, avoids deviations and unnecessary stops whilst providing supervisors accurate time frames for destination arrival. The driving industry has also been reported to incorporate driver facing cameras in order to record positive and negative behaviours for assessment purposes (Tomczak et al., 2018). Both initiatives drastically alter the driver's role because the changes revoke autonomy which was previously required for fulfilling the role to satisfactory standards. In light of the Job Characteristics Model, the retraction of autonomy denies the driver the ability to experience the critical psychological state derived from having the responsibility of the work outcomes. As a consequence, the driver may lose the sense of control and responsibility which hampers them enacting high quality work performance. Moreover, the driver may lose the sense of trust and fairness as the job becomes monitored multidimensionally which enables management to scrutinize their behaviour without consideration for influencing factors within the immediate environment.

A similar situation was identified by Jeske & Santuzzi (2015) who investigated the effects of EPM on employed students' attitudes and perceptions of commitment because of concerns about employers manipulating EPM for their own needs which could be done by applying EPM intermittently, continuously, randomly, covertly and without consent. The type of monitoring categories were; login/logoff, location/mobility, data entry speed, use of passwords for access, phone call lengths, online chat responses, videoing of stations and video observation of arrival/departure of site. Notably, the authors focussed on overt monitoring and excluded covert

methods which is logical considering the participant must be of reasonable awareness to actuate cognition or behavioural differences. Furthermore, participants were asked to only select categories they were exposed to according to their current experience rather than those of their past thus mitigating critically construed memories of previous experiences.

The results indicated respondents were often exposed to more than one variety of monitoring and unpredictable monitoring was predominant in decreasing job satisfaction, affective commitment, organisational citizenship behaviour and self efficacy. Whereas continuous and stable monitoring improved these outcomes. Furthermore, different methods were related to various negative effects though some methods did not obtain statistical significance, namely activities that required log in/off and location monitoring. The authors suspect the reasoning for this is due to their population sample being derived from students undertaking higher education and as such, the data analysis favoured the customer service occupation which was reflected in the demographics. Therefore, the methods found to be non significant may have had more bearing on other occupations depending on the relevance between monitoring type and work behaviour. However, when monitoring covered aspects of detailed productivity relating to the customer service occupation such as chat response and data entry. The respondents reported negative effects on perception of control, job satisfaction, affective commitment, self-efficacy and organisational citizenship behaviours.

The Job Characteristics Model can be drawn upon in order to help understand the findings. Firstly, the researchers proposed that when EPM is applied closely, this was perceived as micromanagement which had the potential to breach privacy expectations. In essence, this is seen to change aspects of the core job role as illustrated by the JCM because when individual productivity is perceived to be under constant assessment, employees are conscious of an overarching pressure requiring them to produce set amounts of work. This ensures behaviour is preoccupied with production which constrains their control and limits skill variety and autonomy because trying new methods is timely and resource taxing. In relation to the JCM the job design hinders the employees experiencing the psychological states that promote internal motivation and growth/job satisfaction. Though the researchers did not relate their findings to the JCM specifically, they stated “undermining control comes at a significant psychosocial cost for the employee” (Jeske & Santuzzi, 2015.p.73).

Situational Factors Influencing the Effects of EMP.

The outcomes of EPM appear to be well established and are discussed in the subsequent paragraphs, it is also apparent many aspects can moderate the relationship. For example, researchers Jeske & Santuzzi (2015) discuss monitoring closeness on employees and state EPM reduces autonomy and undermines self directed behaviours which in turn intensifies the feeling of micromanagement. The notion of micromanagement is comprehensible when comparing a precision data collecting method such as keystroke logging to broad surveillance systems. The former minutely detailed the employees performance which can be compiled to portray productivity from a data centric viewpoint which may impose stress if individual performance markers are not met. Whereas generalised video systems that are designed for broad observation capture a wide variety of behaviours and are primarily referred to for general security purposes.

Alternatively, whether people are monitored individually or as a group and during simple or complex tasks has also been shown to have moderating influences (Aiello & Kolb, 1995). This is commonly theorized because participants monitored collectively may experience social facilitation whereby they undergo increased or diminished performance depending on task complexity (Cottrell et al., 1968). In order to explain this phenomenon the Social Facilitation Theory has been extended extensively to EPM research and for the most, validated. More specifically, EPM has been found to enhance task performance when undertaking simple or well rehearsed tasks whilst diminishing performance during complex tasks due to cognitive appraisal (Kolb & Aiello, 1997).

Another aspect requiring consideration is communication and the purpose of using EMP. For example, whether the purpose of collecting information was conveyed to be for supporting employee performance or whether it would be used for deterring or correcting unsatisfactory behaviour. Researchers Wells, Moorman & Werner (2007) investigated participants perception towards the use of EMP and found evidence to support the hypothesis when EMP was applied for improving behaviour it was positively correlated with job satisfaction and organisational commitment. On the contrary, they found when EPM was used for behavioural deterrence it was correlated with lower perception of fairness, job satisfaction and organisational commitment. Likewise, Alge (2001) also investigated this aspect under experimental conditions and found monitoring only relevant behaviours and allowing contribution to the monitoring process mediated

the notion of privacy invasion. This in turn fully mediated participant perceptions of procedural justice thus highlighting the importance of communication within the application of EPM.

In summary, the use of EPM is widespread and implemented on the premise of preventing illicit activity and improving productivity. However, the practice of monitoring staff performance has been associated with adverse effects on staff well being which may be due to role changes naturally brought about by its use. The Job Characteristics Model can be used to rationalize this occurrence as it details how the job design influences personnel entering critical psychological states which lead to positive outcomes such as greater motivation and obtaining job satisfaction.

Outcomes of Electronic Performance Monitoring

Trust.

Trust is representative of how one perceives the degree of safety within the environment which in turn directs future behaviours (Dirks & Ferrin, 2001). Therefore, within the organisational context the feeling of trust plays an important role in organisational success whereby higher levels of trust have been correlated with improved performance, organisational citizenship behaviours and less counterproductive behaviours (Colquitt et al., 2007). Trust also reflects the organization's culture which is imperative as employees livelihoods and in some instances their lives can be dependent on safe and productive relationships with colleagues, leadership and the organisation itself. However, in order to achieve the feeling of trust, the psychological state is incrementally built between two parties to the point where the feeling becomes perpetuated throughout the relationship.

Recent research by Bernstrøm & Svare (2017) indicated that EPM was negatively correlated with felt trust and in turn felt trust mediated control and motivation. The research was conducted with a reasonably large sample size in order to address recent concerns over the prevalence of EPM affecting Nordic countries who are specified as having high levels of organisational trust amongst their culture. The authors found support to conclude “employees’ feeling of being trusted increases with their level of control over decisions at work and decreases relative to the level of monitoring at work” (Bernstrøm & Svare, 2017, p.43.).

In other studies, Holland, Cooper, & Hecker (2015) also sought to investigate the relationship between EPM and diminishing trust in employees across occupation type and hierarchical tiers. The Social Exchange Theory was held in consideration because EPM was argued to undermine the reciprocal nature of the employee and manager relationship. This was proposed because EPM inherently imbalanced the power dynamics between subordinate and supervisor which has the potential to negate quality engagements. Their findings also demonstrated that EPM was negatively related to trust in management and the amount of electronic monitoring in the workplace was positively correlated with employee perception of distrust in ‘management to make competent decisions’ (Holland et al., 2015). However, the findings were only significant for manual employees rather than managers leading researchers to theorise the difference may have been due to the awareness of monitoring because overt methods were used on manual employees whereas managers experienced passive and covert applications such as email surveillance. In summary, the authors concluded the amount of EPM employees are exposed to can engender perceptions of distrust (Holland et al., 2015). These findings lead to the first hypothesis which proposes the more methods of EPM participants are exposed to decreases the perceptions of trust in senior management.

Hypothesis 1) More EPM is related to less trust in senior management.

Productivity & Commitment.

The impetus of EPM research is due to its relationship with productivity which is based on monitoring transposing the role of interpersonal monitoring. Various observer effect theories suggest the observation and attention given to people influences their behaviour to meet the observers expectations resulting in self defeating tendencies or self efficacy depending on the observers social cues. Similarly, the Social Facilitation Theory (SFT) also states tasks requiring simple behaviours are promoted by the observation of others whereas more complex behaviours are cognitively taxing and therefore are hindered (Zajonc, 1965). In line with various theoretical frameworks, research has investigated whether electronic monitoring enhances productivity because of observational effects, though the SFT provides a caveat that only simple tasks would improve as complex tasks would be hindered.

Seminal research by Aiello & Kolb (1995) spearheaded investigation into EPM by using baseline measures and within group experiments to assess productivity. The study found those with high baseline scores were more productive when monitored irrespective of the individual or group monitoring conditions, whereas those with lower baseline scores produced less when monitored. This led the authors to conclude their experiments demonstrated electronic monitoring “intensify performance in accordance with preexisting ability levels” (Aiello & Kolb, 1995, p. 398.). The experiment was supported by a post exercise survey which indicated those monitored reported being more motivated and thought the task was of more importance than those who were non monitored (Aiello & Kolb, 1995). Seemingly, the results provide evidence to support the notion that EPM has productivity improving qualities for some. However, the research was somewhat marred because of the extensive use of duplicity, namely the employing of sham supervisors, confederates and fictitious reports of personality traits to accentuate the notion of group cohesion. Furthermore, the results may be more reflective of a novel experience as monitoring technologies three decades earlier were new and somewhat primitive in relation to contemporary methods. Therefore, the extrapolation of these findings into the modern context is inappropriate.

Likewise, Aiello & Kolb (1997) used a similar methodology with less manipulations and confederates. The results indicated those monitored on simple tasks attempted more data entry and obtained more accurate results than those unmonitored which again presents findings of improved productivity for those in the simple condition. However, performance on the more complex task was stable across conditions and therefore the findings only partially conformed to SFT. Alternatively, Claypoole & Szalma (2019) employed video monitoring within a sustained attention experiment and found task performance was enhanced with one mode of EPM (live video) and amplified with two simultaneous modes of electronic monitoring (live video and recorded video). The researchers hypothesized the results were obtained because participants either believed the increase in monitoring represented greater task importance, or the additional method raised self awareness due to a looming performance appraisal (Claypoole & Szalma, 2019). As such, both rationales underpin the idea that the use of EPM can have a strong effect on how people perceive the use of EPM which in turn has an effect on productivity.

However, Becker and Marique's (2014) findings from two double blinded between subject experiments are somewhat contrary to those aforementioned. The studies found those monitored with a camera while undertaking a simple task of placing wooden pegs in hole, produced 7% and 4% less productivity respectively than those in the unmonitored condition. The researchers tested a subsequent theory; that monitoring generated negative emotions resulting in anxiety thus decreasing motivation and performance. A post task survey of emotion in the second experiment illustrated although there was a main effect for negative emotions when monitored, the results were not statistically significant. Therefore, the researchers pragmatically theorised that an implicit rule is activated; when observed be careful and when not observed finish quick negate boredom. As such, either strategy was thought to drive nervous energy which stimulated speed when unmonitored and prudence when monitored (Becker & Marique, 2014). Furthermore, David & Henderson (2000) who also focussed on productivity effects and participant affect found those undertaking more difficult tasks simply experienced more stress and lessened mood when compared to simple tasks. They distinguished the use of EPM as a "significant determinant of performance, stress level, and mood state" (David & Henderson, 2000.p.918).

In summary, research investigating EPM and the effects on productivity is extensive yet the results are diverse. However, the researchers come to theorise similar explanations for their results. Aiello & Kolb, (1995) express monitoring moderated pre existing abilities and the difference in performance was underpinned by individual motivation and perceptions of task importance and David & Henderson (2000) found increased task difficulty was linked with decreased mood state. As such, the underlying theme suggests the effects of EMP on productivity may be dependent on an individuals differences which influences perceptions.

An alternative aspect which has received less attention is an employees feeling of commitment to the organization. The relationship between EPM and decreased commitment may be pertinent to the varied productivity results because organisational commitment is conceptualized to represent the degree of commitment an employee has with their work which in turn leads to greater engagement with the organisation and "organizational commitment leads to greater productivity" (Deepa, et al, 2014. p73.) This relationship has also been empirically supported by Saini (2018) who found a moderate positive correlation between organisational commitment and productivity. Furthermore, those who have investigated this relationship found

support that monitoring reduced participants feeling of commitment to the organisation and, when EPM was used to specifically deter behaviour there has been a correlation with decreased organisational commitment ((Jeske & Santuzzi, 2015; Wells, 2007). Therefore, in order to further assess the relationship between EPM and commitment, the second hypothesis proposes the more EPM participants are exposed to is related to decreased feelings of organisational commitment.

Hypothesis 2) More EPM is related to less affective commitment.

Stress.

Similar to productivity, employee stress has also been one of the first considerations of EPM. However, unlike the diverse findings of productivity there is consensus in the literature that stress is exacerbated by electronic monitoring. The concept of stress is primarily discussed and measured through a self perceptions of stress and often theorised in collaboration with the SFT due to the relevance of buffering effects within group dynamics. However, another concept used to inform hypotheses is Karasek's (1979) Job Demands-Control Model which suggests psychological strain can occur when there is a mismatch between the demands of the job and person having insufficient control to address those demands thus resulting in stress (Sargent & Terry, 2000).

The Job Demands-Control Model adequately explains the increase of stress because EPM often changes job demands by curtailing social interaction between coworkers which is a significant loss of social support (Davidson & Henderson 2000; Amick & Smith, 1992). The same considerations can also be applied to the supervisor and subordinate dyadic as EPM inherently removes the need for interpersonal communication between the two parties because supervision can often become a role overseen by technology (Davidson & Henderson 2000). Consequently, the reduction of interpersonal communication disrupts the perpetual feedback loop which in turn affects the goal setting cycle that is usually obtained through performance appraisal found in both formal and informal expressions (Nebeker, & Tatum, 1993). The loss of personal relationship is damaging for the employee because communication is well reasoned by Locke & Latham (2013) to be an important factor for improving performance and its absence stimulates dissatisfaction and stress.

The measures used to collect participants stress levels is generally obtained through self report surveys which has limitations because stress self reports have been argued to be predisposed by personality dimensions as opposed to more robust methods that can be derived through physiological accounts (Aiello & Kolb, 1995). Nonetheless, Aiello & Kolb investigated the effects of stress using variable social conditions and found participants monitored individually experienced more stress compared to unmonitored participants and those in groups reported being the least stressed. The results suggested that social groups regulate the effects of stress though in general EPM induced stress which the researchers proposed was due to stronger feelings of performance evaluation (Aiello & Kolb, 1995). Similar results were also discovered by Nebeker & Tatum (1993) who assessed the relationship between computer monitoring focussed on productivity measures and the relationship with stress. They found evidence that monitoring increased the feelings of stress for those in the difficult task condition and a significant increase in rewards induced more stress for those in the simple task condition. Alternatively, Davidson & Henderson (2000) used negative mood state as a dependent variable and also found a greater relationship between EPM and negative mood state when participants undertake complex tasks as opposed to simple tasks. Therefore, in line with the findings from previous research, self perceived stress is hypothesized to increase with greater amounts of EPM.

Hypothesis 3) More EPM is related to more self perceived stress.

In summary, there are no extant theories or models developed specifically to explain the effects of EPM and theories so far are obtained from various fields of inquiry suggesting that a comprehensive understanding of EPM and the effects have not been fully achieved. Presumably, this is due to a steady stream of research lacking in the area of electronic monitoring as research investigating the effects, particularly those of stress and productivity appear to be sparse and often dated. However, to date the use of EPM has been shown to reduce trust, decrease organisational commitment and increase feelings of stress. In consideration of the JCM, it appears the changes to the job design induced by EPM often impedes autonomy, constrains skill variety and minimizes communication with peers and supervisors resulting in decreased trust, reduced commitment and stress. However, how a person perceives and evaluates these facets within their environment, their mood state and ability to manage stress are aspects particular to an individual. Yet the line of inquiry encompassing how the effects of EPM may be influenced by an individual's differences

appears to be unexplored even though the relationship between EPM and stress has been previously linked to personality traits (Aiello & Kolb, 1995).

Personality

To date, interest in to EPM has been fragmented across the last two decades though there is renewed interest as workplaces come to embed EPM into the environments which has impacted job roles. With significant advancements in technology research appears to be preoccupied with reexamining the effects of EMP. As such, research attention has not completely transitioned towards understanding what factors may moderate or mediate these effects. However, personality is one facet with roots in early literature that suggests a person's characteristics has capacity to moderate or mediate these negative effects of EPM.

Five Factor Model of Personality.

In psychology literature, one of the more commonly accepted taxonomies of personality is the Five Factor Model of personality which is also known as the Big Five (Neal et al., 2012). The Big Five model of personality holds that five broad traits of personality namely Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism/Emotional Stability and the six facets within these traits can provide a representation of an individual's characteristics. To date, research using the Big Five has produced comprehensive accounts as to how personality dimensions influence a person's attitudes, emotions and proclivity to behave under certain conditions (Barlett & Anderson, 2012; Neal et al., 2012). However, caution has equally been expressed that the simplicity of five personality dimensions can often overlook the vast complexities of personality, and its ease of use and apparent consensus can be somewhat seducing for researchers (Funder, 2001). Furthermore, Smits et al., (2011) highlight there is an implicit notion that personality traits are perceived to be stable across a person's lifespan, whereas research has well established that genetic and environmental influences impact development thus causing personality to change over time. Notwithstanding these issues, the Big Five model or the five factors of personality is a substantiated theorem of personality which has been incrementally developed and extensively validated across cultures thus demonstrating its usefulness (Schmitt, et al., 2007; McCrae & Terracciano, 2005) .

Chen & Ross (2007) suggest personality may be responsible for the variations in participant response because in essence people react to stimuli differently. To exemplify their point, the authors cite research detailing how women are more prone to stress under EPM because they maintain higher levels and standards of privacy (Chen & Ross, 2007; Panina, 2002). Alternatively, they argue with support that those who do not regularly meet expected standards experience more stress than consistent achievers (Schleifer et al. 1996). Based on these examples, Chen & Ross (2007) propose some people can be predisposed more than others to feel the negative effects of EPM, though in relation to their examples the differences depend on the person's propensity to trust and sensitivity to feedback. This line of argument has since received support as research around internet based learning demonstrates some e-learners under EPM experience substantially more evaluation apprehension depending on their goal orientation (Watson et al., 2013).

Therefore, a person's characteristics appear to influence how they respond under EPM which are in part derived by an individual's personality. The Interactionist Perspective holds personality to be a dominant factor governing behaviour when responding to environments with ambiguity (Chen & Ross, 2007). This is relative to the context of EPM because as seen in psychological experiments, field studies and work environments the situation can often become ambiguous and without social cues as technology takes over monitoring roles. These circumstances can often result in participants becoming uninformed of how the monitoring is conducted, what data they are collecting or how it will be used. As such, the importance of an individual's differences has been overlooked within the debate of EMP, and the lack of research focusing on personality in this context warrants further inquiry (Chen & Ross, 2007). Authors Chen & Ross, (2007) suggest some prominent personality constructs requiring investigation include Emotional Stability and Conscientiousness from the Big Five as they are factors that have a strong bearing on an individual's disposition.

The Conscientious trait is conceptualised as being a construct which reflects an individual's attribution of diligence, duty and meticulous thought towards decisions (Costa & McCrae, 1992). The Conscientious trait is made up of six facets namely Competence, Order, Dutifulness, Achievement Orientated, Self-Discipline and Deliberation and how one places on these facets determines their overall Conscientiousness level. The behavioural influences are believed to guide

those high in the trait to act in accordance with moral duties, self perceived obligations and strive for achievement (Costa & McCrae, 1992; Digman, 1990).

The Emotional Stability or as commonly interchanged with the reversed scale titled Neuroticism, is also a factor that appears to have strong moderating feature (Neal et al., 2012; Digman, 1990). The Emotional Stability / Neuroticism trait is made up of six facets namely Anxiety, Depression, Impulsiveness, Hostility, Vulnerability to Stress and Self Conscientiousness and those low on the trait are theorised to experience anxiety, stress and succumb to impulsivity easier than those higher on the trait. Furthermore, in accordance with prior research, it has been said that participants with lower levels of Emotional Stability experience more negative emotional states and perceive ambiguous situations more pessimistically (Soric, Penezic & Buric, 2013).

Personality in the Workplace.

Personality measurements have been used to understand the myriad of interpersonal dynamics within a variety of situations, particularly those of the workplace. Individual characteristics as measured with personality models such as the Big Five have been endorsed extensively across research encompassing the organisational environment with findings generally supporting the Five Factor theorem. That is, how one perceives a situation, forms emotions and responds to stimuli has been found to be influenced by specific factors of an individual's personality. Such research was conducted by Colbert et al., (2004) who found evidence of a relationship between positive perceptions of the workplace being negatively related with organisational deviance. Furthermore, personality traits were found to moderate this relationship whereby those high in the traits Conscientiousness and Emotional Stability who held negative work perceptions would generally not engage in organisational deviance compared to those lower (Colbert et al., 2004). In a similar study, albeit assessing subordinate perceptions of leadership, Wang, Harms & Mackey (2015) found those low in Conscientiousness or high in Neuroticism held higher perceptions of abusive supervision. Moreover, those who had low levels of Extraversion and Agreeableness as opposed to those with higher levels were more likely to engage interpersonal deviance in response to perceptions of abusive supervision.

The behavioural implications of personality within the workplace have also been investigated. Researchers Chiaburu et al., (2011) demonstrated through a meta analysis covering 87 statistically independent samples distinguished that the Conscientiousness trait was the best predictor of organisational citizenship behaviour. Likewise, research by Neal et al., (2012) mapped the Big Five personality dimensions to predict positive work behaviour and notably the results pertaining to the Conscientiousness trait were related strongest to individual task proficiency whereas Neuroticism was the least related. The opposing findings stemming from differences in Neuroticism and Conscientious personality dimensions appear pivotal factors as there is a recurring theme throughout literature illustrating that different scores on these scales can disposition people to perceive and behave differently under similar environmental conditions.

Personalities Influence on Perceptions and Emotions.

The assessment of personality using the Big Five personality also supports the notion that personality factors influence positive or negative impressions (Rauthmann, 2012). For example, with the use of the NEO Five-Factor Inventory those registering with high Extraversion within Rauthmann's (2012) study were dispositioned to view situations as more frequently enjoyable, whereas those with high levels of Neuroticism trended towards more negative associations. Furthering this line of inquiry, researchers Serfass & Sherman (2013) employed a more rigorous assessment which included numerous personality tests including the Big Five to assess these relationships with a Thematic Apperception Test under experimental conditions. The participants were shown a series of ambiguous images and the researchers found those higher in Neuroticism trait were more likely to perceive criticism, those high in Agreeableness viewed the images as "less complex, anxiety inducing, and threatening" while those high in Openness identified the images as more humorous and intellectually stimulating (Serfass & Sherman, 2013.p.714). The researchers concluded, the study in part provided support that subjective perceptions elicited by the same stimuli were reliably different which correlated with the participants personality where interpretable (Serfass & Sherman, 2013).

The Five Factor Model of Personality has also been used to assess whether personality factors are distal antecedents that play a role in emotional regulation. Findings from an adolescent (median age = 16.1) focussed study conducted by Soric, Penezic & Buric (2013) determined those

scoring less on the traits of Agreeable, Conscientiousness and Emotional Stability (reversed neuroticism) were valid predictors of negative emotions. Whereas, higher scorers on the trait of Emotional Stability were found to be less prone to feelings of anxiety and humiliation. As such, these findings provide support that personality factors have the innate capacity to influence a person's emotional disposition and that emotion can often influence adaptive or maladaptive feelings towards situations.

In summary, the Five Factor Model or Big Five model of personality are broadly held as a reliable and valid measure of personality. The model appears to be applied in breadth to understand how personality has the capacity to influence intrapersonal dimensions within a variety of settings and context. More specifically, the Big Five model and IPIP or NEO measurement tools are utilised to elucidate how personality can be held partially responsible for the differences in the way an individual perceives a situation and predisposition emotions which has the propensity to influence how a person responds. However, there appears to be no extant research that utilises the Big Five model to assess how personality plays a role within the domain of EPM. Albeit, there is considerable evidence within literature to suggest personality, particularly the facets of Conscientiousness and Emotional Stability may be factors that may help explain some inconsistencies throughout the preceding research.

In light of research and the trait definition, those with higher levels of Conscientious are believed to engage in deeper thoughts encompassing EPM because of their disposition to be cautious and complete tasks successfully. This suggests an intrinsic tendency to plan which leads to multidimensional considerations that enable them to obtain a broadened view of EPM thereby permitting a more detailed appraisal regarding its use which may negate strong feelings of distrust. Moreover, due to those with higher levels on the Conscientiousness scale having greater self discipline and feeling of dutifulness, it is believed they will be more aligned to their role and the organisation's objectives which may result in more accepting attitude towards the decision to use EPM thus buffering negative effects on commitment. Furthermore, higher levels of self efficacy may provide greater psychological resources to assist with the constraints imposed by EPM. In effect, these considerations may result in less negative perceptions, less thoughts of privacy invasion, reduced feelings of threat and subsequent stress thereby mitigating the negative affect towards the concept and practice of EPM.

Whereas those lower on the Conscientiousness trait are thought to be considerably less committed to their goals, responsibilities and the organisation itself which may lead to apathetic attitudes leading to decreased commitment. Likewise, participants lower on this trait may find the constraints imposed by EPM challenging due to jobs becoming more rigid which is less suited to those who value spontaneity thus resulting in stress. Furthermore, as those lower on the scale are less orderly, cautious and achievement striving this may result in less consideration given to the purpose of EPM thereby leading to greater feelings of distrust. Therefore, in accordance with the theoretical construct of Conscientiousness and with no previous indication to whether personality factors will moderate or be a factor which contributes to the effects of EPM. The following moderation and mediation hypotheses are proposed.

Hypothesis 4a) Conscientiousness moderates the relationship between EPM and Trust:whereby higher conscientiousness will strengthen the relationship.

Hypothesis 4b) Conscientiousness moderates the relationship between EPM and Commitment: whereby higher conscientiousness will strengthen the relationship

Hypothesis 4c) Conscientiousness moderates the relationship between EPM and Stress: whereby higher conscientiousness will strengthen the relationship

Hypothesis 4d) The effect of EPM on Trust is mediated by conscientiousness.

Hypothesis 4e) The effect of EPM on Commitment is mediated by conscientiousness.

Hypothesis 4f) The effect of EPM on Stress is mediated by conscientiousness.

Likewise, the Emotional Stability construct is also proposed to have moderating and mediating attributes whereby those lower in Emotional Stability are thought to be less adaptive and accepting of EPM due to job constraints imposed by its use. Moreover, due to the ambiguity surrounding the collection of information and the fundamental reduction of autonomy are factors that may aggravate low thresholds of comfortability thus resulting in heightened stress. Furthermore, the perception of close supervision and the feelings of constant assessment may antagonize and irritate those low in Emotional Stability thus leading to increased perceptions of distrust and decreased organisational commitment.

Alternatively, those higher in Emotional Stability are believed to be less affected by the job constraints brought about by EPM because they are more comfortable and secure within themselves and therefore more tolerable to change which minimizes feelings of stress. Furthermore, because those higher in Emotional Stability are less disposed to feelings of anxiety and self consciousness, this will also mitigate perceptions of distrust. Lastly, because participants higher in Emotional Stability trait are less susceptible to impulsiveness and hostility it is hypothesised they will be less likely to withdraw feelings of commitment to their organisation. Therefore, in accordance with previous research and the theoretical construct of Emotional Stability the following hypotheses are proposed.

Hypothesis 5a) Emotional stability moderates the relationship between EPM and Trust: whereby higher emotional stability will strengthen the relationship.

Hypothesis 5b) Emotional stability moderates the relationship between EPM and Commitment: whereby higher emotional stability will strengthen the relationship

Hypothesis 5c) Emotional stability moderates the relationship between EPM and Stress: whereby higher emotional stability will strengthen the relationship

Hypothesis 5d) The effect of EPM on Trust is mediated by emotional stability.

Hypothesis 5e) The effect of EPM on Commitment is mediated by emotional stability.

Hypothesis 5f) The effect of EPM on Stress is mediated by emotional stability.

Locus of Control.

The Locus of Control (LOC) concept by Rotter (1966) takes a different approach to assessing personality traits. The Locus of Control concept is summarized to be reflective of a person's outlook as to whether the positive and negative events in one's life are accredited to the self (Internal LOC) or to the environment (External LOC) (Kolb, & Aiello, 1996). In accordance with the LOC construct definition, it has been regularly put forth that people with Internal LOC have preference to maintain a state of control over their affairs and therefore require some degree of autonomy. Whereas, those with External LOC are less concerned with control and view themselves to be at the behest of others and the environment (Judge, et al 2001).

Research conducted by Kolb & Aiello (1996) is a rare investigation of the relationship between EPM and personality in which the authors hypothesised LOC would moderate the negative effects of EPM. In accordance with prior research, the authors proposed participants under EPM would experienced stress due to social isolation and reduction in autonomy, though the threat would only brought about when the need for autonomy was mismatched with the individuals needs. Their results found those who held an internal LOC experienced more stress when under electronic monitoring and less when non monitored, whereas those with external LOC experienced more stress during the non monitoring condition and less when being electronically monitored. The authors concluded that those with an internal LOC experience stress because of the mismatched need for autonomy whereas those with external LOC experienced stress when they were given more control because they would have preferred structure to govern their behaviour (Kolb & Aiello, 1996).

In accordance with this research and with consideration to the Job Characteristics Model, the LOC is proposed to be a factor that is responsible for moderating the negative effects of EPM. Firstly, because EPM has the potential to curb social integration it is proposed these constraints will cause a mismatch between the individuals needs and the job demands. As such, the monitoring will be greater source of stress for those with internal LOC because they require more autonomy whereas those with external LOC will be relatively unaffected resulting in less stress. Secondly, it is proposed that those with an external LOC may perceive the use of EPM as unfair resulting in a decreased feelings of trust because they maintain lower levels of responsibility and perceive their behaviour to be contingent on environmental conditions which they are inherently unaccountable for. Therefore being held accountable by systems which collect information relating to their individual performance may be perceived as threatening and unjust. On the contrary, those with an internal LOC place more emphasis on personal accountability and therefore more confident in their performance thus resulting in less concern for EPM systems and higher levels of trust. Lastly, due to those with internal LOC having higher standards of personal accountability and presumably responsibility, it is hypothesised they will have higher levels of commitment. Whereas, those with an external LOC may possess lower levels of responsibility which impacts their performance and is identifiable with EPM systems which may result in dissatisfaction and decreased commitment. As such, the following hypotheses are proposed.

Hypothesis 6a) The Locus of Control moderates the relationship between EPM and Trust whereby an internal Locus of Control will strengthen the relationship.

Hypothesis 6b) The Locus of Control moderates the relationship between EPM and Commitment whereby an internal Locus of Control will strengthen the relationship.

Hypothesis 6c) The Locus of Control moderates the relationship between EPM and Stress whereby an internal Locus of Control will strengthen the relationship.

Summary

In summary, contemporary workplaces have transitioned towards an environment that is highly integrated with technology and the equipment within these systems are intrinsically designed to monitor all aspects of work behaviour. A comprehensive understanding as to how people respond under these conditions is lacking and difficult to obtain due to the vast array of variables. Albeit, research investigating EPM demonstrates a relationship with negative effects such as decreased trust, commitment and increases of stress, though specific inquiry into moderating and mediating factors has received less attention. However, personality factors have been evidence to predisposition a person's cognition, emotions and proclivity to behave. Therefore, this research seeks to employ various personality factors to assess whether the negative effects found in research are moderated or mediated by an individual's characteristics in order to further the understanding of electronic performance monitoring.

Summary of Hypotheses

Hypothesis 1) More EPM is related to less trust in senior management.

Hypothesis 2) More EPM is related to less affective commitment.

Hypothesis 3) More EPM is related to more self perceived stress.

Hypothesis 4a) Conscientiousness moderates the relationship between EPM and Trust: whereby higher conscientiousness will strengthen the relationship.

Hypothesis 4b) Conscientiousness moderates the relationship between EPM and Commitment: whereby higher conscientiousness will strengthen the relationship

Hypothesis 4c) Conscientiousness moderates the relationship between EPM and Stress: whereby higher conscientiousness will strengthen the relationship

Hypothesis 4d) The effect of EPM on Trust is mediated by conscientiousness.

Hypothesis 4e) The effect of EPM on Commitment is mediated by conscientiousness.

Hypothesis 4e) The effect of EPM on Stress is mediated by conscientiousness.

Hypothesis 5a) Emotional stability moderates the relationship between EPM and Trust: whereby higher emotional stability will strengthen the relationship.

Hypothesis 5b) Emotional stability moderates the relationship between EPM and Commitment: whereby higher emotional stability will strengthen the relationship

Hypothesis 5c) Emotional stability moderates the relationship between EPM and Stress: whereby higher emotional stability will strengthen the relationship

Hypothesis 5d) The effect of EPM on Trust is mediated by emotional stability.

Hypothesis 5e) The effect of EPM on Commitment is mediated by emotional stability.

Hypothesis 5f) The effect of EPM on Stress is mediated by emotional stability.

Hypothesis 6a) The Locus of Control moderates the relationship between EPM and Trust whereby an internal Locus of Control will strengthen the relationship.

Hypothesis 6b) The Locus of Control moderates the relationship between EPM and Commitment whereby an internal Locus of Control will strengthen the relationship.

Hypothesis 6c) The Locus of Control moderates the relationship between EPM and Stress whereby an internal Locus of Control will strengthen the relationship.

Chapter Two: Method

The present study was granted approval by the Psychology Research and Ethics Committee, School of Psychology, University of Waikato. The survey format was a self report online questionnaire developed and distributed through the survey software program Qualtrics. Invitation to complete the survey was done through the social media platform Facebook in addition to internal channels within the University of Waikato. Informed consent was acquired by participants checking a box to acknowledge their given consent. The survey was confidential and no identifying information was retained.

Participants.

One hundred and eighty nine participants began the survey with one hundred and twelve participants completed and submitted their results, the remaining seventy seven were eliminated. Participant gender was made up of 81 females (72.3%), 29 males (25.9%) and 2 participants chose 'Prefer Not to Say' (1.8%). Participants country of residence was mostly New Zealand 62 (55.4%), followed by the United Kingdom 24 (21.4%), Australia 11 (9.8%) and Other 15 (13.4%). The age group most frequently selected was 18-29 by 44 participants (39.3%) followed by the 30-39 category with 29 (25.9%), 40-49 represented 22 participants (19.6%), 50-59 represented 12 participants (10.7%) and the 60+ band was selected by 5 participants (4.5%). The Full Time employment category was selected by 72 participants (64.3%) with 40 participants selected Part Time (35.7%).

Procedure.

Participants were recruited through the social media platform Facebook. The groups were identified through the 'Group Search' function in order to locate groups that had formed around common geographical interests and hobbies. The survey participation was advertised to groups across New Zealand, Australia, and the UK with member bases between 300 and 3000 members although most groups regularly exceeded this number. The group administrators were first asked permission to allow the information and associated research link to be advertised within the group.

Measures.

The survey recorded basic demographics such as gender, age, country of residence and required participants to select in how many different electronic monitoring methods they were exposed to. The participants were then asked to rate item sets relative to trust in senior management, self perceived stress, affective commitment and complete two items of the Five Factor Model of Personality namely the Conscientiousness and the Emotional Stability scale in addition to Rotter's Locus of Control scale. The complete questionnaire featured 24 questions with 52 total items within those categories.

Electronic Monitoring.

The amount of monitoring participants were exposed to was counted on an interval scale which featured the question "Which of these types of electronic monitoring are in place in your current job?". Example answers included "Video surveillance", "Vehicle GPS" and "Web browser monitoring".

Affective Commitment.

The affective commitment scale was obtained from the 3 Component Model of Organisational Commitment developed by Meyer et al., (1993). The six items representing affective commitment were rated on a 5 point Likert Scale with 1 being strongly disagree and 5 being strongly agree for items "This organization has a great deal of personal meaning for me" and several reverse scored questions such as "I do not feel a 'strong' sense of belonging to my organization". The measure has been used previously by Jeske & Santuzzi (2015) to assess the effects of EPM and found to have acceptable internal consistency ($\alpha = .81$) using Cronbach's Alpha.

Trust in Senior Management.

Trust in senior management was rated with four items on a five point Likert Scale with 1 being strongly disagree and 5 being strongly agree for items "I feel confident that senior management will always try to treat me fairly" and reverse scored questions such as "our senior management would be prepared to gain advantage by deceiving the workers". The measure was developed within human resource literature by Farndale et al., (2011) and found to have acceptable reliability,

validity and internal consistency ($\alpha = .86$) using Cronbach's Alpha. The scale has been used previously for assessing employee trust in relation to EPM by Holland et al., (2015).

Self Perceived Stress.

Four items representing self perceived stress were obtained from the Perceived Stress Scale (PSS) (Cohen et al., 1983) which has demonstrated a suitable internal consistency using Cronbach's Alpha ($\alpha = .85$). The self perception of stress was rated on a 5 point Likert Scale with 1 being never and 5 being very frequently, an example of the PSS included "In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?".

Emotional Stability / Neuroticism.

The personality construct Emotional Stability/Neuroticism was drawn from the International Personality Item Pool (International Personality Item Pool, n.d.) which is an application of the Big Five Personality Traits. The Emotional Stability / Neuroticism factor is comprised of six facets of Anxiety, Depression, Impulsiveness, Hostility, Vulnerability to Stress and Self Consciousness. The Emotional Stability scale was measured with ten items representing the trait and was rated on a 5 point Likert scale with 1 being strongly disagree and 5 being strongly agree, examples include "I am relaxed most of the time" and reverse scored questions such as "I worry about things" and "I get upset easily". The 10 item short version of the IPIP has been validated by Buchanan (et al., 2005) specifically for internet based surveys and has demonstrated a satisfactory internal consistency ($\alpha = .83$) using Cronbach's Alpha.

Conscientiousness.

The Conscientiousness scale was also drawn from the International Personality Item Pool (International Personality Item Pool, n.d.). The construct was measured with 10 items representing the personality trait Conscientiousness which is made up of six facets of Competence, Order, Dutifulness, Achievement Striving, Self-Discipline and Deliberation. The items were rated on a 5 point Likert Scale with 1 being strongly disagree and 5 being strongly agree for items "I am always prepared" in addition to reverse scored items such as "I leave my belongings around" and "I shirk my duties". The 10 item scale has also demonstrated an internal consistency ($\alpha = .84$) using Cronbach's Alpha and found to be valid for internet use by Buchanan (et al., 2005).

Locus of Control.

The shortened 13 items based questionnaire is based on Rotter's (1966) Locus of Control I-E Scale was used to assess whether a person accredited the positive and negative events in one's life to them self (Internal LOC) or to the environment (External LOC). Participants were required to select one of the opposing statements across thirteen items to determine whether the participant held an internal or external Locus of Control. For example some statements were; "No matter how hard you try, some people just don't like you / People who can't get others to like them don't understand how to get along with others", "In the case of the well prepared student, there is rarely, if ever, such a thing as an unfair test / Many times exam questions tend to be so unrelated to course work that studying is really useless" and "Becoming a success is a matter of hard work; luck has little or nothing to do with it / Getting a good job depends mainly on being in the right place at the right time". The shortened version of the Rotter's I-E Scale as opposed to the 23 item long version was used in order to reduce the time spent completing the survey. The long version version has been demonstrated to have an internal consistency of .73 using the Split half Spearman-Brown correlation coefficient and a .72 Test-Retest reliability over a one month period (Rotter, 1966).

Data Analysis.

The raw data was downloaded from Qualtrics into a Google spreadsheet and then transferred into the SPSS program once coded. The demographic data was transformed to a number and the independent and dependent variables were given a value between 1 and 5, reversed scored where necessary and the means calculated. However, it is to be noted the Conscientious scale was inadvertently presented as an unbalanced scale within the survey. The Conscientious scale was labelled Strongly disagree, Somewhat disagree, Disagree, Neither disagree nor agree, Strongly agree. Therefore, the scale was skewed towards negative responses which is to be addressed further in the results and limitations section.

The predictor variable Monitoring Amount was measured on a scale between 1 and 10 whereas moderator variables of Emotional Stability, Conscientiousness along with the dependent variables of Trust, Commitment and Stress were measured on scales between 1 - 5 then averaged and placed into their own SPSS columns as ordinal measures. In order to determine the participants Locus of Control, the external and internal statements were summed and the statement type mostly

selected was used to determine whether the participant held an internal or external outlook and then coded as categorical data with a value of either a 1 or 2. SPSS was then used to perform descriptive statistics, reliability analysis, regression analysis with moderator and mediator analysis and a multivariate analysis of variance (MANOVA).

Recoding of Variables.

In order to suitably conduct a mediation analysis with the Locus of Control variable, the data was required to be recoded into a continuous scale. This was undertaken by using the 'recoding of variables' under the transform process of SPSS which transformed the categorical variable into a continuous variable by assigning the number zero to the External LOC and one to the Internal LOC. This provided the ability to reconfigure the variables attribute and subsequently enable the variable to be used in conjunction with a regression analysis.

Descriptive Statistics.

Descriptive Statistics analysis was conducted through SPSS to assess the kurtosis and potential skew, frequency, mean and standard deviations on the dependent and moderator variables of Emotional Stability, Conscientiousness, Trust, Commitment and Stress.

Reliability Analysis.

A reliability analysis was conducted to assess the consistency of Emotional Stability, Conscientiousness, Trust, Commitment and Stress scales using Cronbach's Alpha (α). In accordance with the general held criterion scores greater than .7 would be deemed to be acceptable whereas those with less than .7 would be interpreted with caution (Field, 2012).

Correlation Analysis.

Bivariate correlation analysis using Pearson's correlation coefficient was used to assess the relationships between the independent and dependent variables. The correlation matrix is reported in the following Results chapter which also includes multicollinearity analysis (VIF) along with statistical significance values which is held in accordance with the general criterion of being significant when p value equals less than .05 and .01.

Regression Analysis.

A linear regression analysis was used to assess the relationship between monitoring amount, trust, commitment, stress and the hypothesized moderator variables of Emotional Stability, Conscientiousness and dummy coded Locus of Control categories. Subsequent analysis were conducted with the personality constructs in the form of moderation and mediation analysis.

MANCOVA.

A multivariate analysis (MANOVA) was used to assess whether there were statistically significant differences between the dependent variables of trust, commitment and stress between the two different groups of Locus of Control.

Chapter Three: Results

The following chapter reports the statistical analysis that was conducted with the data sample. The order of the report follows the sequence data was analysed beginning with the descriptive statistics, bivariate correlational analysis, reliability analysis, regression analysis, moderator analysis, MANOVA and mediation analysis.

Descriptive Statistics

The descriptive statistics presents the mean, standard deviation, skewness, kurtosis for the variables Trust in Senior Management, Affective Commitment, Self-Perceived Stress, Emotional Stability and Conscientiousness. The variable means ranged from 2.72 to 3.79 as shown in table 2 which also illustrates the means for all variables averaged around the midpoint, though as previously discussed the Conscientious scale reflects the unbalanced presentation and must be interpreted with caution ($M = 3.79$, $SD = .64$). In accordance with Kline (2011) skew values greater than ± 3 indicates extreme skewness and kurtosis values between ± 8 indicates extreme kurtosis which may require transforming. The skew values for Emotional Stability, Conscientiousness, Trust in Senior Management range from $-.181$ to $-.237$ indicating a larger buildup of responses on the right side of the scale whereas Affective Commitment and Self Perceived Stress ranged between $.067$ to $.770$ indicating a larger buildup of responses on the left side of the scale. Kurtosis values for Emotional Stability, Conscientious, Trust in Senior Management, Affective Commitment were negative, whereas Self Perceived Stress is positive thereby indicating a distribution that is positively skewed. However, no skew or kurtosis values exceeded the recommended parameters.

The descriptive statistics analysis is presented in table 1.

Table 1.

Descriptive Statistics for variables

	<i>N</i>	Mean	SD	Skew	Kurtosis
MA	112	3.50	2.22	.826	.121
ES	112	3.31	.80	-.198	-.205
C	112	3.79	.64	-.237	-.399
TSM	112	3.08	.98	-.181	-.475
AC	112	2.95	.95	.067	-.959
SPS	112	2.72	.71	.770	1.228

Note. MA = Monitoring Amount, ES = Emotional Stability, C = Conscientiousness, TSM = Trust in Senior Management, AC = Affective Commitment, SPS = Self Perceived Stress

Reliability Analysis

Reliability analyses was carried out on the Affective Commitment scale, Trust in Senior Management scale, Self Perceived Stress scale, Emotional Stability scale and Conscientiousness scale using Cronbach's Alpha (α) in order to test for internal reliability. In accordance with the general held criterion, scores greater than .7 would be deemed to be acceptable whereas those with less than .7 would be interpreted with caution (Field, 2012). All scales produced acceptable reliability scores and the individual results for each were Emotional Stability $\alpha = .88$, Conscientiousness $\alpha = .76$, Trust in Senior Management $\alpha = .82$, Affective Commitment $\alpha = .83$, Self Perceived Stress $\alpha = .72$.

Correlation Analysis

In order to explore the relationship between all variables that were rated on a scale, a bivariate correlation analysis using Pearson's correlation coefficient was conducted as shown in Table 2. In accordance Friedman's (1982) guidelines, with a sample size of $n = 112$, correlations will have a power of .80 at the .05 level ($r = .25$) thus suggesting an 80 percent chance of portraying a true relationship when within the effect parameter of .25.

Table 2.

Pearson correlations coefficient for all variables and Cronbach's alphas

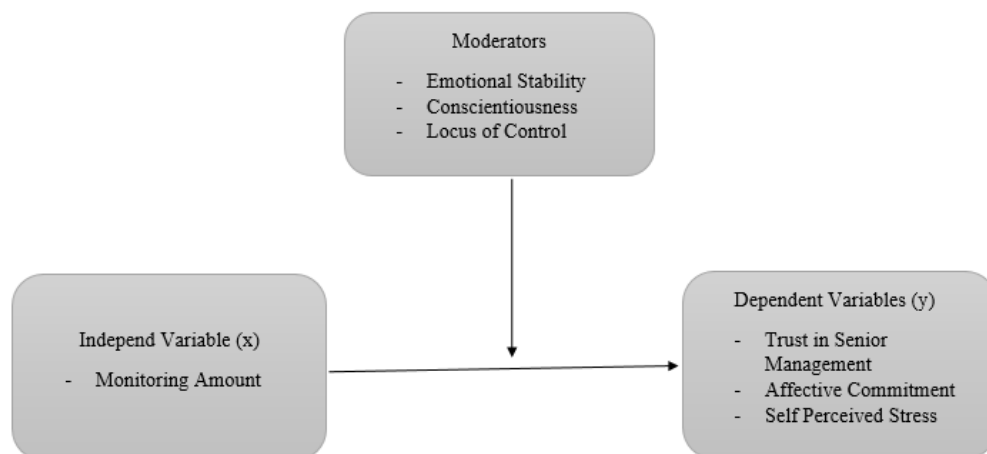
Variables	MA	ES	C	TSM	AC	SPS
Monitoring Amount (MA)	-					
Emotional Stability (ES)	.27**	.88				
Conscientiousness (C)	.23*	.17	.76			
Trust in Senior Management (TSM)	-.18	.20*	.03	.82		
Affective Commitment (AC)	-.09	.06	-.13	.59**	.83	
Self Perceived Stress (SPS)	-.07	-.51**	-.09	-.12	-.09	.72

Sample size $n = 112$, * $p < .05$, ** $p < .001$: reliability for each measure in bold on diagonal.

Moderation Analysis.

Linear regression analysis using the SPSS add on PROCESS macro was conducted in order to assess whether personality factors were responsible for a moderation effect between the predictor variable monitoring amount and outcome variables trust in senior management, affective commitment and self-perceived stress as seen in figure 1.

Figure 1.



Hypothesis 1. It was hypothesised that the more electronic monitoring a person was exposed to the less they would trust in senior management. The results of a linear regression analysis demonstrated a non significant relationship ($F(1,110) = 3.60, p > .05$), with an R^2 of .03.

Hypothesis 2. It was hypothesised that the more electronic monitoring a person was exposed to the less they would feel an affective commitment. The results of a linear regression analysis demonstrated a non significant relationship ($F(1,110) = .82, p > .05$), with an R^2 of .00. Participants predicted affective commitment is equal to $3.08 + -.03$ when monitoring type is counted. Affective commitment decreased -.03 for each unit of monitoring type exposed to.

Hypothesis 3. It was hypothesised that the more electronic monitoring a person was exposed to the more they would feel self perceived stress. The results of a linear regression analysis demonstrated a non significant relationship ($F(1,110) = 4.6, p > .05$), with an R^2 of .0. Participants predicted self perceived stress is equal to $2.80 + -.02$ when monitoring type is counted. Self perceived stress decreased -.02 for each unit of monitoring type exposed to.

Hypothesis 4a) It was hypothesised Conscientiousness would moderate the relationship between monitoring amount and trust in senior management. The results of a moderation analysis did not explain a significant increase in variance for trust in senior management $R^2 = .05, F(3,108) = 2.06, p > .05$ and therefore the hypothesis was not supported ($b = -.08, t(3,108) = -1.40, p > .05$) as seen in table 4.

Hypothesis 5a) It was hypothesised Emotional Stability would moderate the relationship between monitoring amount and trust in senior management. The results of a moderation analysis did not support the hypothesis ($b = -.02, t(3,108) = .57, p > .05$) as seen in table 3. However, the overall model was significant $R^2 = .09, F(3,108) = 3.90, p < .05$ which suggests some effect is taking place.

Table 3.

Linear model of predictors of trust in senior management

	b	SE B	t	p
Constant	3.111	.094	33.091	***
Monitoring Amount	-.073	.043	-1.688	.094
Conscientiousness	.149	.149	.999	.320
MA x C	-.082	.058	-1.406	.162
Constant	3.073	.092	33.352	***
Monitoring Amount	-.108	.042	-2.559	.011
Emotional Stability	.306	.119	2.557	.011
MA x ES	.024	.042	.579	.563

Note. MA x C $R^2 = .05$, MA x ES $R^2 = .09$, $n = 112$, MA = Monitoring Amount, ES = Emotional Stability, C = Conscientiousness, *** = less than .001

Hypothesis 4b) It was hypothesised Conscientiousness would moderate the relationship between monitoring amount and affective commitment. The results of a moderation analysis did not explain a significant increase in variance for affective commitment $R^2 = .03$, $F(3,108) = 1.26$, $p > .05$ and therefore the hypothesis was not supported ($b = -.07$, $t(3,108) = -1.27$, $p > .05$) as seen in table 5.

Hypothesis 5b) It was hypothesised Emotional Stability would moderate the relationship between monitoring amount and affective commitment. The results of a moderation analysis did not explain a significant increase in variance for trust in senior management $R^2 = .04$, $F(3,108) = 1.56$, $p > .05$ and therefore the hypothesis was not supported ($b = .04$, $t(3,108) = 1.74$, $p > .05$) as seen in table 4. However, the model approached significance and therefore it may be worthwhile exploring this relationship further.

Table 4.

Linear model of predictors of affective commitment

	b	SE B	t	p
Constant	2.980	.091	32.606	***
Monitoring Amount	-.014	.042	-.343	.731
Conscientiousness	-.315	.145	-.927	.355
MA x C	-.072	.056	-1.279	.203
Constant	2.922	.091	31.988	***
Monitoring Amount	-.041	.041	-.992	.323
Emotional Stability	.058	.118	.490	.625
MA x ES	.073	.042	1.745	.083

Note. MA x C $R^2 = .03$, MA x ES $R^2 = .04$, $n = 112$, MA = Monitoring Amount, ES = Emotional Stability, Conscientiousness, *** = less than .001

Hypothesis 4c) It was hypothesised Conscientiousness would moderate the relationship between monitoring amount and self perceived stress. The results of a moderation analysis did not explain a significant increase in variance for trust in senior management $R^2 = .02$, $F(3,108) = .87$, $p > .05$ and therefore the hypothesis was not supported ($b = -.05$ $t(3,108) = 1.20$, $p > .05$) as seen in table 5.

Hypothesis 5c) It was hypothesised Emotional Stability would moderate the relationship between monitoring amount and self perceived stress. The results of a moderation analysis did not support the hypothesis ($b = -.03$ $t(3,108) = -1.33$, $p > .05$) as seen in table 5. However, the over model did find a significant relationship $R^2 = .27$, $F(3,108) = 13.69$, $p < .01$.

Table 5.

Linear model of predictors of self perceived stress

	b	SE B	t	p
Constant	2.711	.0691	39.230	***
Monitoring Amount	-.023	.032	-.719	.473
Conscientiousness	-.112	.110	-1.026	.307
MA x C	-.051	.042	1.203	.231
Constant	2.742	.059	45.906	***
Monitoring Amount	.022	.027	.808	.420
Emotional Stability	-.454	.077	-5.849	.000
MA x ES	-.031	.027	-1.33	.259

Note. MA x C $R^2 = .02$, MA x ES $R^2 = .27$, $n = 112$, MA = Monitoring Amount, ES = Emotional Stability, Conscientiousness, *** = less than .001

MANCOVA

A multivariate analysis was initially conducted to explore the effect of internal and external Locus of Control on trust in senior management, affective commitment and self perceived stress. Using Pillai's trace, there was a significant interaction of Locus of Control on the negative effects of monitoring, $V = .08$, $F(3,108) = 3.18$, $p < .05$.

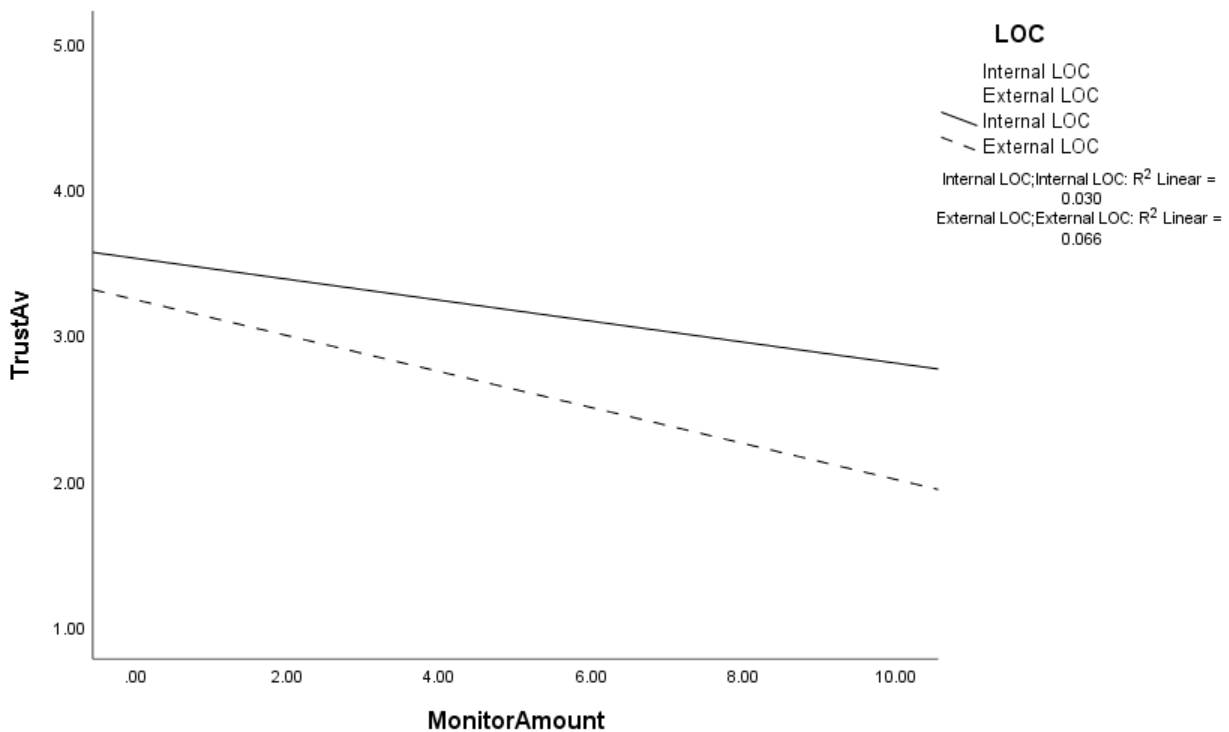
Hypothesis 6a) It was hypothesised the Locus of Control trait would moderate the effects of EPM whereby trust in senior management would be higher for those who have an internal Locus of Control. A univariate ANOVA on the outcome variable trust in senior management revealed Locus of Control had a statistically significant effect $F(1,110) = 5.12$, $p < .05$ as seen in Figure 2 which demonstrates those with an internal Locus of Control reported greater levels of trust in senior management in comparison to those with an external Locus of Control.

Hypothesis 6b) It was hypothesised the Locus of Control trait would moderate the effects of EPM whereby affective commitment would be higher for those who have an internal Locus of Control. A univariate ANOVA on the outcome variable affective commitment revealed Locus of Control did not have a statistically significant effect $F(1,110) = .03$, $p > .05$.

Hypothesis 6c) It was hypothesised the Locus of Control trait would moderate the effects of EPM whereby self perceived stress would be higher for those who have an internal Locus of Control. A univariate ANOVA on the outcome variable self perceived stress revealed Locus of Control did not have a statistically significant effect $F(1,110) = 2.89, p > .05$.

Figure 2.

Locus of Control & trust in senior management.



Mediation Analysis

Mediation analysis was conducted using PROCESS in order to test for a mediating effect between the predictor variable monitoring amount and outcome variables trust in senior management, affective commitment and self perceived stress.

Hypothesis 4d) It was hypothesised Conscientiousness would mediate the relationship between monitoring amount and trust in senior management. The regression model demonstrated there was no significant effect $F(2,109) = 2.09, p > .05$.

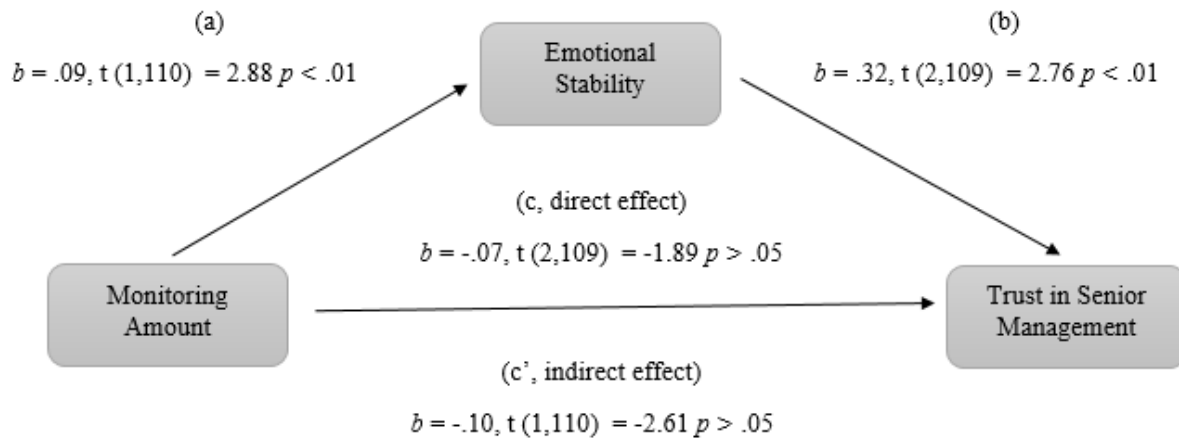
Hypothesis 4e) It was hypothesised Conscientiousness would mediate the relationship between monitoring amount and affective commitment. The regression model demonstrated there was no significant effect $F(2,109) = 1.08, p > .05$.

Hypothesis 4f) It was hypothesised Conscientiousness would mediate the relationship between monitoring amount and self perceived stress. The regression model demonstrated there was no significant effect $F(2,109) = .58, p > .05$.

Hypothesis 5d) It was hypothesis Emotional Stability would mediate the relationship between monitoring amount and trust in senior management which was supported by the regression model as it demonstrated there was a significant effect $F(2,109) = 5.73, p < .01$. Following the 4 step process of Baron & Kenny (1986) the results as seen in figure 3 indicated there was no statistically significant direct relationship between monitoring amount and trust (c) $b = -.07, t(2,109) = -1.89, p > .05$. However, there was a statistically significant relationship between monitoring amount and Emotional Stability (a) $b = .09, t(1,110) = 2.88, p < .01$ and Emotional Stability with trust in senior leadership (b) $b = .32, t(2,109) = 2.76, p < .01$ though the overall indirect effect was not statistically significant (c') $b = -.10, t(1,110) = -2.61, p > .05$. The bootstrap confidence interval method demonstrated there was a small indirect effect of monitoring amount on trust in senior management through emotional stability $b = .03, 95\% \text{ BCa CI } [.000, .070]$. However, because the standardized coefficient includes no change within the 95% confidence interval no firm conclusion can be drawn.

Figure 3.

Mediation analysis between monitoring amount, emotional stability and trust in senior management.

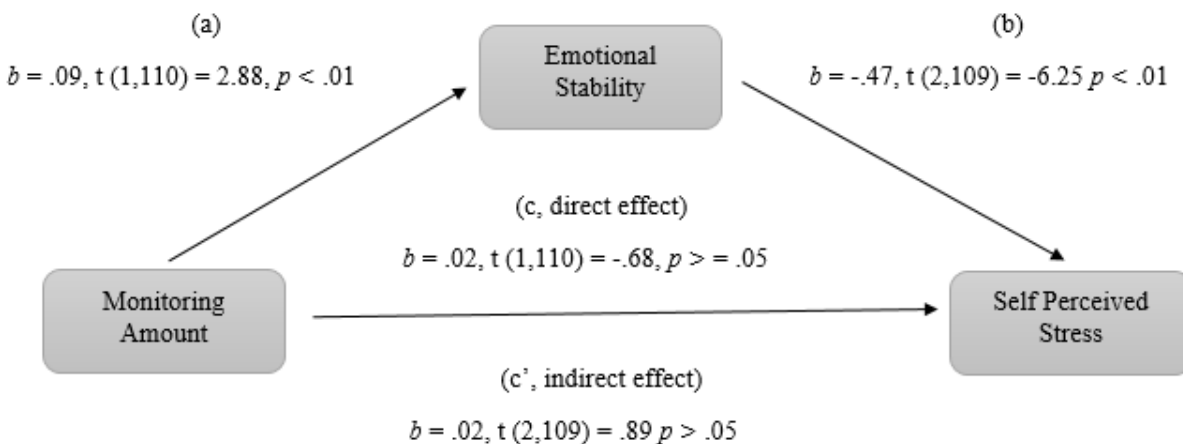


Hypothesis 5e) It was hypothesised emotional stability would mediate the relationship between monitoring amount and affective commitment. The results of the model demonstrated there was no significant effect $F(2,109) = .74, p > .05$.

Hypothesis 5f) It was hypothesised Emotional Stability would mediate the relationship between monitoring amount and self perceived stress which was supported by the regression model as it demonstrated there was a significant effect $F(2,109) = 19.85, p < .01$. Following the 4 step process of Baron & Kenny (1986) the results indicated there was no statistically significant direct relationship between monitoring amount and self perceived stress (c) $b = .020, t(1,110) = -.683, p > .05$. However, there was a statistically significant relationship between monitoring amount and emotional stability (a) $b = .095, t(1,110) = 2.88, p < .01$, between emotional stability and self perceived stress (b) $b = -.47, t(2,109) = -6.25, p < .01$ though no change nor statistical significance was observed for the indirect effect (c') $b = .02, t(2,109) = .89, p > .05$ as can be seen in Table 4. The bootstrap confidence interval method demonstrated there was a small but significant indirect effect of monitoring amount on self perceived stress through emotional stability $b = -.04, 95\% \text{ BCa CI } [-.094, -.003]$ thus indicating as emotional stability increases the effect of monitoring on stress reduces.

Figure 4.

Mediation analysis between monitoring amount, emotional stability and self perceived stress.



Summary

The initial hypotheses predicting that electronic performance monitoring would have negative effects on various outcomes was not supported and therefore did not corroborate previous research findings in the literature. The personality factors Emotional Stability and Conscientiousness from The Five Factor Model of Personality did not produce any moderating effect on the negative outcomes of EPM, however emotional stability did account for mediating the effects of decreased trust in senior management and self perception of stress. The Locus of Control personality traits were also found to be responsible for the differences in trust in senior management, however the Locus of Control was not found to have the same effect on affective commitment or self perceived stress.

Chapter Four: Discussion

The aim of this research was to test whether personality factors influenced the effects of EPM, whether by moderation or mediation. More specifically, the research project sought to investigate whether the effects of EPM could be partially explained by the differences in an individual's personality traits. This project contributes to the wider body of knowledge encompassing EPM firstly, by attempting to replicate previous findings on the adverse effects. Secondly, the research helps to elucidate the dynamics of EPM by considering the role of personality factors.

The chapter begins with a discussion of the negative effects of EPM and how they are understood in relation to the theoretical framework of the Job Characteristics Model. This is followed by an examination of the first three hypotheses and discussion as to why they have not supported the relationship between greater use of EPM and the adverse effects on an employees level of trust, commitment and stress. The role of personality is then discussed in turn as some facets have been found modestly responsible for influencing these effects. This is followed by a discussion of the practical implications, the study's limitations and suggestions for future research.

The Negative Effects of Electronic Performance Monitoring

This research was founded upon previous literature indicating that electronically monitoring the performance of employees is associated with various negative psychosocial outcomes. Research by Bernstrøm & Svare (2017) determined more electronic monitoring was related to decreased feeling of trust. Likewise, Holland et al., (2015) found EPM was related to not decreased levels of trust in management but also negative perceptions of the organisation. In addition, the use of EPM can impact productivity and the organisation's repute by decreasing perceptions of fairness, feelings of job satisfaction and organisational commitment when used as a behavioural deterrent (Jeske & Santuzzi, 2015; Wells et al., 2007). Furthermore, the systems have been found to induce stress particularly when participants undertake complex tasks (Davidson & Henderson, 2000).

In order to understand why EPM brings about negative effects for those monitored, the Job Characteristics Model is referred for rationalization. The JCM indicates that a jobs characteristics can affect employees entering critical psychological states which ultimately influences their motivation, performance and satisfaction. Specifically, whether the employee can use a variety of

skills to complete their task, identify with the purpose of that task and attach meaning to the objective, impacts whether they obtain a sense of meaningfulness which in turn promotes internal motivation. However, the use of EPM can often change elements of the job because productivity and performance become reported through metrics resulting in data driven productivity targets and key performance indicators. As such, the quantification of all work aspects including that of employee performance, prompts job roles to be divided into measurable segments (Jeske & Santuzzi, 2015). The endeavour for optimal performance then inhibits skill variety because finding new methods for achieving outcomes is resource taxing as it deviates from standard protocols. Furthermore, human factors can become overshadowed by the propensity to quantify all aspects of the work environment thus giving rise to feelings of apathy and reducing the task meaningfulness which the JCM identifies as being critical for developing internal motivation.

Similarly, the use of EPM can also remove the autonomy of employees because detailed monitoring of performance and targets set by data driven objectives can be used as a tool for managing performance. This stems from the data being reported in real time which can be observed to assess whether an employee's performance is suitable or inadequate from an external viewpoint. However, the data from these systems are decontextualized and fail to take into account the situational dynamics or environmental influences. Consequently, the monitoring is susceptible to being perceived as unjust and a form of micromanagement which undermines the employee's responsibility which is responsible for high job satisfaction. Furthermore, the JCM also identifies feedback to be critical for promoting feelings of effectiveness and satisfaction. However, EPM systems can replace physical oversight resulting in less interpersonal communication between the manager and employee dyad, thus reducing verbal and non verbal feedback which has the potential to cause dissatisfaction and stress (Locke & Latham, 2013).

As indicated by literature, the first hypothesis (Hypothesis 1) proposed the greater use of EPM would be related to lower levels of trust. However, the findings of this research failed to reproduce this relationship, though a negative but non significant correlation was found at the $p=0.06$ level. The reason why the level of significance was not reached may be explained by methodology reasons namely the small sample size, alternatively the monitoring methods may not have been perceived to be invasive or threatening. Moverover, whether EPM was used to provide support for employees or to deter unsuitable behaviour has also been found to have moderating

attributes (Wells et al., 2007). Therefore, it is plausible that the results of this research may have not repeated previous findings due to the organisations intention to use EPM and thus confounding the relationship. In consideration to the JCM model, the implications of this non relationship suggests the use EPM does change the job characteristics to a point where employees lose autonomy. This is an important aspect in the organisational context because previous work indicates the feeling of trust is associated with the level of control employees have over their work (Bernstrøm & Svare, 2017).

The second hypothesis (Hypothesis 2) proposed greater levels of EPM would be related to decreased levels of affective commitment. However, the findings from this research did not support this relationship. Instead, the results suggest the use of EPM did not discourage feelings of commitment towards the employing organisation. A potential explanation for this finding may be related to the organisations communication strategy, as previous work has shown policies and thorough communication explaining the purpose, intention to collect and general use of the data to be pivotal in influencing positive perceptions and alleviating employee concerns (Wells et al., 2007). Alternatively, whether participants were accustomed to the monitoring may have engendered more accepting attitudes towards the organisation as longer periods of employment are related to greater organisational commitment (Brimeyer, Perrucci, & Wadsworth, 2010). The findings in regards to the JCM suggests the greater use of EPM does not segregate and confine the job role whereby employees lose the ability to employ a variety of skills to complete the task, nor does it render a situation where employees no longer identify or obtain favourable perception towards the tasks significance as presupposed.

The third hypothesis (Hypothesis 3) proposed greater levels of EPM would be related to increased levels of self perceived stress, however the findings did not support this relationship. Plausible explanations may be related to the type of work being undertaken as David & Henderson (2000) found greater stress levels were only significant for those undertaking complex tasks as opposed to simple ones. In addition, Aiello & Kolb (1995) found that monitoring at the work-group level buffered the effects of stress on those monitored. Therefore, it could be apparent that the application of monitoring within this population sample was buffered by group cohesion, or monitoring was to an extent where it did not cause undue pressure. With consideration to the JCM, the findings suggest that the use of EPM does not alter the job characteristics to a point where job

roles are compartmentalized and social interaction is curtailed. Therefore, the psychological resources which are often obtained through coworker and management communication and in particular the feedback aspect appear to be unimpaired.

Moderating and Mediating Attributes of Personality

Conscientiousness

Two components of the Five Factor Model of personality were proposed to moderate or mediate the negative effects of EPM. The first factor assessed was the trait of Conscientiousness and the basis of this trait states those with higher levels are disposition for orderliness, dutifulness, cautiousness and strive for achievement (Costa & McCrae, 1992). As such hypotheses 4 (a,b,c,d,e and f) proposed the Conscientiousness factor would have the capacity to moderate or mediate the negative effects of EMP. This was hypothesised because those higher in the trait are more cautious, orderly and achievement striving. Therefore, those higher on the scale would be more inclined to plan and evaluate the use of EPM thus leading to greater considerations and a broadened understanding of EPM. The additional time spent weighing up the purpose and value of the EPM systems may have negated feelings of distrust. In addition, those higher in Conscientiousness have greater levels of self discipline and dutifulness which may affect attitudes as they have less concerns about the reporting of their performance thus buffering the negative effects on commitment. Furthermore, as those higher in trait have greater self efficacy, it was proposed that this would be a psychological resource that would assist employees manage the constraints imposed by EPM thereby mitigating stress.

However, the findings from this research did not support the Conscientiousness factor as having moderating or mediating attributes. More specifically, the findings from hypotheses 4 (a,b,c,d,e and f) provided no evidence to support the notion that the Conscientiousness factor was to any extent responsible for the differences on either measures of trust in management, affective commitment or self perceived stress. The findings corroborate that of Zweig & Webster (2003) who explored which factors of the Big Five had the potential to moderate the relationship between electronic monitoring and attitudes relating to fairness, privacy and acceptance of the systems. Though the authors hypothesised an opposite effect whereby those high in the Conscientious factor would experience greater concern under EPM due to the innate need for achievement. No

significant relationship was found for Conscientiousness factor Whereas Emotional Stability was found to be salient.

However, a similar study by Robie & Ryan (1999) found the relationship between Conscientiousness and performance was moderated by interpersonal monitoring as those higher in Conscientiousness performed better when monitored. The authors rationalized because those high on Conscientiousness are more responsible, dependable and rule abiding they may have become more self aware of their performance. As such, monitoring appeared to have altered the perceptions and subsequent behaviour of participants higher on the scale. Within the current study there was no evidence to support the notion that the Conscientious personality factor had a bearing on the participants perceptions in a similar way. This implies that the use of electronic monitoring has not transposed the role of a person undertaking a physical monitoring position which has been the basis of many hypotheses due to expectancy of positive or negative observational effects. Therefore, it may be apparent the Conscientious factor has much less influence as a perceptive force because the dispositional effects appear to be more confined to behavioural outputs. Furthermore, the use of EPM within the workplace context may not be substantial enough to cause disturbances to the perceptions linked with conscientiousness factor which may be due to the prevalence and normalization of EPM within a modern workplace. In conclusion, whether an employee has low or high levels of Conscientiousness appears to be an irrelevant factor within the context of EPM and assessing how someone will respond under these circumstances appears to be an overestimation of the personality factor attributes.

Emotional Stability

The second personality factor tested from the Five Factor Model of Personality was Emotional Stability which has been found to have an impact on how people perceive situations and whether they associate positive or negative feelings towards stimuli (Soric, Penezic & Buric, 2013). Due to the presupposition that EPM was changing the dynamics of job roles by compartmentalizing tasks, constraining social interactions and monitoring performance intensively amid other aspects. It was hypothesized that those low on the Emotional Stability scale would be less accepting, antagonized and easily irritated by the use of EPM thus resulting in less trust, commitment and greater levels of stress.

Emotional Stability Moderation.

The results of the analysis demonstrated that hypotheses 5 (a and c) were unsupported thus signifying Emotional Stability did not play a moderation role in regards to trust in management or self perceived stress. However, hypothesis 5 (b) which proposed Emotional Stability would moderate the relationship between monitoring amount and affective commitment approached significance ($p=0.08$). As such, Emotional Stability demonstrated more prominence as having moderator attributes for affective commitment whereas trust and stress were otherwise found to be mediated by the Emotional Stability factor which is discussed in the following paragraphs.

This finding is reflective of the theoretical construct as those high in Emotional Stability are dispositioned to be calm, secure and therefore better equipped to manage their emotions which mitigates negative reactions to organisational decisions. The implications of this finding suggest the Emotional Stability factor can play an important role within the context of EMP as feelings of commitment may be affected with greater use of EPM systems. This finding is also in line with previous research as a meta analysis featuring over ten thousand participants found the Emotional Stability and affective commitment to be one of the highest correlated personality factors from the Big Five (Choi et al., 2015). Furthermore, Zweig & Webster (2003) found those high in emotional stability and their perceptions of fairness were more strongly related to attitudes towards monitoring than those lower in the trait. Alternatively, those lower in Emotional Stability demonstrated a stronger relationship with privacy invasion and attitudes than those higher in the trait. As such, it appears the Emotional Stability factor contributes towards how a person perceives EPM to be a negative concept which can manifest into decreased feelings of commitment.

Emotional Stability Mediation.

Hypothesis 5 (d) proposed Emotional Stability would mediate the effects of EPM whereby higher levels would be related to greater levels of trust in management. The results of the mediation analysis demonstrated there was an overall significant effect and a slight decrease of trust in management between the direct and indirect paths. Results of the analysis suggest the combination of monitoring and Emotional Stability can modestly explain the relationship for trust in senior management. This finding conforms to the theoretical construct as those lower on the Emotional Stability scale are dispositioned to be more worrying and self conscious whereas those higher

maintain calmness and have higher thresholds for anxiety. Under the conditions of EPM this appears rationale because substantial differences within the trait would seemingly determine whether an employee experiences apprehensive or be unperturbed. For those lower on the scale, EPM would likely give rise to feelings of insecurity which can be projected onto management as greater levels of monitoring are perceived by employees to be a sign of control and less trust (Bernstrøm et al., 2017)

The results were not repeated for hypothesis 5 (e) as the analysis was not statistically significant nor did the results come close to the demarcated probability levels. However, similar to hypothesis 5 (d), hypothesis 5 (f) which proposed Emotional Stability would mediate self perceived stress was supported by the mediation analysis. The relationship between the predictor and mediator variables demonstrated significance which was supported by the bootstrap confidence interval. The findings conform to the theoretical construct as those with low levels of Emotional Stability are susceptible to feelings of self consciousness, vulnerability and anxiety more so than those higher on the scale. The relationship is logical when applied to the context of EPM because literature has illustrated EPM systems can often confine roles and segregate employees which removes feedback and important social interactions that buffer the effects of stress (Aiello & Kolb, 1995). Furthermore, because the systems have the capability to compile data to assess performance in minute detail it can impose pressure on employees. As such, those lower on the Emotional Stability scale would be more easily aggravated because they are more susceptible to feelings of vulnerability and anxiety thus influencing the level of stress.

Locus of Control

The Locus of Control concept distinguishes those who have an Internal LOC view themselves in control whereas those with an External LOC view situations as being out of their control. Therefore, on the basis of LOC concept those with an internal LOC require greater levels of autonomy because they prefer to maintain a state of control over their affairs. Whereas, those with External LOC need less as they view themselves to be at the behest of the environment. As such, the divergent views stemming from an internal or external disposition was proposed to influence the negative effects of EPM. The hypotheses were based on the notion that the constraints imposed

by EPM caused a mismatch between the employees resources and job demands thus influencing perceptions and feelings towards the use of EMP.

Hypothesis 6 (a) proposed those with an internal LOC would have higher levels of trust in senior management because they hold higher levels of personal accountability resulting in less concern for EPM. The results of a multivariate analysis of covariance and subsequent investigations provided support that trust in senior management was significantly higher for those who held an internal LOC as opposed to an external LOC. This finding falls in line with previous research that has indicated the moderating attributes of the LOC whereby those with an internal perspective possess greater levels of responsibility which enables them to cope better in uncertain situations (Xiao, Wu & Liao, 2018). Likewise, the results of the present study demonstrate a similar pattern as those with internal LOC appear to be less affected by the conditions imposed by the use of EMP. This suggests those who have greater emphasis on personal control over their tasks have less concern for EPM systems. Whereas, those with an internal Locus of Control may take issue with EPM systems because data collection can be perceived to be threatening and unjust as their behaviour is thought to be contingent on environmental factors which is inherently out of their control.

Hypothesis 6 (b and c) were unsupported indicating the Locus of Control had no influence on the reported levels of affective commitment nor self perceived stress. Therefore, the results were not found to be in accordance with those in previous research as EPM was shown to be a greater source of stress for those with an internal LOC due to their need for autonomy (Aiello & Kolb, 1995). A possible explanation as to why this finding was not repeated may be due to the differences between technologies used prior and those of today. Previous research investigating the effects of technological monitoring primarily used video recording devices which, during the time period were large and bulky pieces of equipment that imposed a physical presence as opposed to subtle methods seen in modern workplaces. Furthermore, the concept of monitoring performance was relatively new which may have given rise to stronger emotions whereas contemporary technologies are more integrated within systems. As such, these differences may have had an impact on perceptions and elicited markedly differing responses particularly in regards to the measures of self perceptions of stress.

Theoretical Implications

The initial findings did not replicate those of previous research which demonstrate EPM to be related to various negative effects. In light of the JCM these findings suggest electronic performance monitoring does not dramatically change the job characteristics that are important for developing positive outcomes such as intrinsic motivation, high job satisfaction, low absenteeism, and high quality work performance. Furthermore, it is believed the non replication has likely stemmed from the intended use of the systems, a variable that was not assessed here, has had a large impact on how the systems are perceived, and therefore what effect they have. This can be understood further by drawing upon the Job Demands Resources model which takes into account the demands of the job and what resources an employee has access to in order to manage those demands (Demerouti & Bakker, 2011). For example, due to EPM changing aspects of the work environment such as real time reporting, whether the intended use of EPM was applied to control how the work conducted or to increase the workload the system would be perceived as an increase in the job demands. Whereas, if the intention was to supply feedback to staff for the purpose of supporting their performance, the system would be perceived as an instrument for development and therefore a resource to assist them in becoming more effective within their role. As such, depending on the organisations intention to use EPM may determine whether the systems bring adverse effects.

Secondly, personality factors having the capacity to moderate or mediate the negative effects of EPM have provided mixed results. Specifically, the Conscientious factor did not demonstrate any moderating or mediating effects on the dependent variables. As such, the Conscientiousness factor was not relevant to the EPM scenario which may be because the construct holds relatively weak perceptual influences or alternatively, the stimuli of EPM was not strong enough to evoke emotional reactions relative to the personality trait. On the contrary, the Emotional Stability factor demonstrated a role in moderating affective commitment whilst being modestly responsible for the results on trust in senior management and self perceived stress. Likewise, the Locus of Control concept was also found to have played a role in influencing the levels of trust in senior management. Therefore, it appears evident the negative effects of EPM are not solely attributable to structural factors because personality factors have been found to play a dynamic role in influence the relationship between EPM and the negative effects.

Practical Implications

The practical implications of this research indicate firstly, monitoring the performance of employees through conventional methods is not related to decreased feelings of trust or commitment nor does it elicit greater feelings of stress. As such, monitoring employees through conventional methods can be purposeful because the data can be used in a supportive manner for various purposes. However, occupations which require heavy monitoring of staff performance may need to consider explaining this purpose by providing policies detailing how the information will be protected from abuse and used in the future as communication appears to be pivotal for influencing perceptions. Furthermore, the organisation should consider whether it intends to use the information to support employees performance or employ it as a mechanism for control because the way in which the systems are used determines whether it becomes a resource of support or an additional demand of the job. Therefore, organisations are required to be sensitive when constructing policies in order to ensure communication is adequately framed to reflect the conditions.

Secondly, organisations should also consider the implications of electronic monitoring on particular staff. The use of EPM may challenge some employees trust in senior leaders and bring about higher levels of stress for those who are susceptible to anxiety and more prone to experience negative emotions which under EPM conditions may be easily aggravated. On the contrary, people with an internal Locus of Control and high Emotional Stability will be better suited to these circumstances as their levels of trust and stress will be less affected and buffered by the innate attributes of their personality.

Limitations of the Current Study

The limitations of this study are mostly attributable to the methodology and in particular the relatively small sample size. More specifically, Facebook regularly blocked the survey distribution due to a perceived breach of the user agreement as the advertising of the survey was categorized to be spam. The impediment constrained the sample size which in effect reduced the studies ability to find stronger effect sizes.

Furthermore, due to the survey relying on self report, responses were also susceptible to various self report bias namely social desirability due to intimate questions regarding participants feelings toward their organisation and their personality. In particular, data obtained from questionnaires with maximum values have been found to be affected by social desirability phenomenon whereby extreme selections are scaled back to moderate ones for various reasons (Kuncel & Tellegen, 2009). In the event of this, the chances to find stronger effects would have been reduced and the circumstances would have been exacerbated by the inability to substantially expand the sample size.

In addition, because the survey was based online in order to acquire a cross cultural sample, the small participation from foreign countries prevented a cross cultural analysis thus constraining the generalizability of the findings outside of New Zealand. Moreover, controls were not put in place to distinguish whether EPM was primarily being used to support and improve behaviour or whether it was used as a control to deter poor performance or bad behaviour which was in due course a factor believed to have confounding attributes.

Future Research

In order to provide a more comprehensive investigation, future research should seek to use a larger sample size to increase the power considering the effect sizes have been small. It is also recommended that controls be placed to account for the organisations intention to use EPM, because whether the system are employed to support or to control may shape positive or negative perceptions which confound the relationship. Furthermore, the length of the employment may also be a factor requiring control as length of tenure and in particular the inherent autonomy accompanying tenure has been related to greater levels of commitment which may be extended to trust due to the reciprocal nature of building trust over time (Brimeyer et al., 2010), Lastly, extending the investigation to include all aspects of the Five Factor Model personality is also recommended as it is apparent some factors have a greater influence on the perceptions and feelings associated within the context of EPM.

Concluding Remarks

In conclusion, this research project first sought to establish the relationship between electronic performance monitoring and the negative effects identified by previous literature. Secondly, the project sought to explore whether these effects could be influenced and somewhat explained by an individual's personality traits. The study did not reproduce the relationship between EPM and the negative effects required to establish the basis of the research. Based on these findings it is apparent that the use of electronic monitoring does not undermine the relationship an employee has with their organisation. However, the research demonstrates that Emotional Stability from the Five Factor Model of personality and the Locus of control were personality factors that held moderating and mediating attributes. As such, the results of this study lend support to the notion that personality does in fact play a role in how people perceive and subsequently feel about the use of electronic equipment used to monitoring their performance within the workplace. Albeit, the organisation's intentions to use these EPM may be the catalyst for the detrimental effects because systems used to support employee performance provide an additional resource to cope with job demands whereas an intention to control performance ensures there is an additional demand on the role.

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Appendix A

Hi all, my name's Chris I am a Masters student with the University of Waikato (New Zealand) and I'm looking for participants for my 6 minute survey relating to *people being electronically monitored at work*. If you think this is something relevant to you and you would like to help out, please follow the link and complete the survey! Kind regards Chris :)

https://waikato.qualtrics.com/jfe/form/SV_3O8coH1d4ZVzmcZ

If you think this is suitable for your organisation, I would like to invite you and your organisations employees to fulfill this survey by forwarding this email through internal channels. The survey takes approximately 5-8 minutes depending on reading time and any assistance would be greatly appreciated. Below is a basic overview of the project and the surveys landing page (link below) contains ethics approval, verification and contact information from the University of Waikato should any issue arise. Kind regards Chris Robinson.

Appendix B

Research Project: Do Personality Factors Moderate the Negative Effects of Electronic Performance Monitoring?

Electronic monitoring of workplace environments includes a variety of methods ranging from simple video surveillance to complex data collecting algorithms. However, how an individual perceives these systems may be different depending on their unique personality. As part of the Master of Applied Psychology program through The University of Waikato being completed by Chris Robinson (Contact: ccr8@waikato.ac.nz) this research project seeks to investigate this idea and we're looking for your help with it. If you have any questions about the study, please email Chris. It is important to note complete confidentiality and anonymity will be ensured as no identifying information such as names, emails or contact numbers are required. - The survey takes approximately 15 minutes. - Data storage is held for five years by researchers and the information will be used for the purpose of a thesis project and possible publication in scientific articles.

If you would like to contribute, we would like to invite you to take part in this anonymous online survey.

CONSENT FORM

1. I have read the information about the study and I understand it.
2. I have been given sufficient time to consider whether or not to participate in this study.
3. I am satisfied with the answers I have been given regarding the study.
4. I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without penalty.
5. I have the right to decline to participate in any part of the research activity.
6. I know who to contact if I have any questions about the study in general.
7. I understand that the information supplied by me could be used in future academic publications.
8. I understand that my participation in this study is confidential and that no material, which could identify me personally, will be used in any reports on this study.

Declaration by participant: I agree to participate in this research project and I understand that I may withdraw at any time before submitting my final answers. If I have any concerns about this project, I may contact the convenor of the Psychology Research and Ethics Committee (Professor Nicola Starkey, phone 07 837 9230, email: nicola.starkey@waikato.ac.nz) on text

"This research project has been approved by the Human Research Ethics Committee of the School of Psychology. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email ethics@waikato.ac.nz, postal address, School of Psychology, Faculty of Arts and Social Sciences, Te Kura Kete Aronui, University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240."

☐ Yes I consent (1)

☐ I do not consent (2)

What country do you reside in?

☐ New Zealand (1)

☐ Australia (2)

☐ United Kingdom (3)

☐ Others (4)

What band captures your age in years?

☐ 18-29 (1)

☐ 30-39 (2)

☐ 40-49 (3)

☐ 50-59 (4)

☐ 60 + (5)

What is your gender?

☐ Male (1)

☐ Female (2)

☐ Prefer not to say (3)

What best represents your employment status?

☐ Full time (1)

☐ Part time (2)

Which of these types of electronic monitoring are in place in your current job? You can select as many as you need

☐ Video surveillance (1)

☐ Vehicle GPS (2)

- ☐ Personal GPS (3)
- ☐ Area log in / log off monitoring (4)
- ☐ Equipment log in / log off monitoring (5)
- ☐ Interpersonal communication monitoring (6)
- ☐ Online communication monitoring (7)
- ☐ Web browsing monitoring (8)
- ☐ Monitoring of resource usage (9)
- ☐ Monitoring of productivity and output (10)
- ☐ Other (11)

Please rate each of the following statements according to how much you agree with it.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)

I am relaxed
most of the
time (1)

☐☐☐☐☐

I seldom
feel blue (2)

☐☐☐☐☐

I get
stressed out
easily (3)

☐☐☐☐☐

I worry
about things
(4)

☐☐☐☐☐

I get upset
easily (5)

☐☐☐☐☐

I change my
mood a lot
(6)

☐☐☐☐☐

I have
frequent
mood
swings (7)

☐☐☐☐☐

I get irritated easily (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often feel blue (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am easily disturbed (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate each of the following statements according to how much you agree with it.

	Strongly disagree (1)	Somewhat Disagree (2)	disagree (3)	Neither agree nor disagree (4)	Somewhat Agree (5)
I am always prepared (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pay attention to details (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I get chores
done right
away (3)

☐☐☐☐☐

I like order
(4)

☐☐☐☐☐

I follow a
schedule (5)

☐☐☐☐☐

I am
exacting in
my work (6)

☐☐☐☐☐

I leave my
belongings
around (7)

☐☐☐☐☐

I make a
mess of
things (8)

☐☐☐☐☐

I often forget
to put things
back in their

☐☐☐☐☐

proper place
(9)

I shirk my
duties (10)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Please rate each of the following statements according to how much you agree with it.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Senior management can be trusted to make sensible decisions for this organization's future (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel
confident that
senior
management
will always try
to treat me
fairly (2)

☐☐☐☐☐

Senior
management is
sincere in its
attempts to
take account
of the
employees'
point of view
(3)

☐☐☐☐☐

Our senior
management
would be
prepared to
gain advantage
by deceiving
the workers
(4)

☐☐☐☐☐

Please rate each of the following statements according to how much you agree with it.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I would be very happy to spend the rest of my career with this organization (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I really feel as if this organization's problems are my own (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not feel a 'strong' sense of belonging to my organization (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I do not feel
'emotionally
attached' to
this
organization
(4)

☐☐☐☐☐

I do not feel
like 'part of
the family' at
my
organization
(5)

☐☐☐☐☐

This
organization
has a great
deal of
personal
meaning for
me (6)

☐☐☐☐☐

Please rate each of the following statements according to how often the feeling occurs.

	Never (1)	Rarely (2)	Occasionally (3)	Frequently (4)	Very frequently (5)
In the last month, how often have you felt that you were unable to control the important things in your life (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the last month, how often have you felt confident about your ability to handle your personal problems (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In the last
month, how
often have
you felt that
things were
going your
way (3)

☐ ☐ ☐ ☐ ☐

In the last
month, how
often have
you felt
difficulties
were piling
up so high
that you
could not
overcome
them (4)

☐ ☐ ☐ ☐ ☐

For each of the following pairs of statements, please select the one which best describes your view

- ☐ Many of the unhappy things in people's lives are partly due to bad luck (1)
- ☐ People's misfortunes result from the mistakes they make (2)

For each of the following pairs of statements, please select the one which best describes your view

- ☐ One of the major reasons why we have wars is because people don't take enough interest in politics (1)
- ☐ There will always be wars, no matter how hard people try to prevent them (2)

For each of the following pairs of statements, please select the one which best describes your view

- ☐ In the long run, people get the respect they deserve in this world. (1)
- ☐ Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries. (2)

For each of the following pairs of statements, please select the one which best describes your view

- ☐ The idea that teachers are unfair to students is nonsense. (1)
- ☐ Most students don't realize the extent to which their grades are influenced by accidental happenings. (2)

For each of the following pairs of statements, please select the one which best describes your view

- ☐ Without the right breaks, one cannot be an effective leader. (1)
- ☐ Capable people who fail to become leaders have not taken advantage of their opportunities.
- (2)

For each of the following pairs of statements, please select the one which best describes your view

- ☐ No matter how hard you try, some people just don't like you. (1)
- ☐ People who can't get others to like them don't understand how to get along with others. (2)

For each of the following pairs of statements, please select the one which best describes your view

- ☐ I have often found that what is going to happen will happen. (1)
- ☐ Trusting to fate has never turned out as well for me as making a decision to take a definite course of action. (2)

For each of the following pairs of statements, please select the one which best describes your view

☐ In the case of the well prepared student, there is rarely, if ever, such a thing as an unfair test. (1)

☐ Many times exam questions tend to be so unrelated to course work that studying is really useless. (2)

For each of the following pairs of statements, please select the one which best describes your view

☐ Becoming a success is a matter of hard work; luck has little or nothing to do with it. (1)

☐ Getting a good job depends mainly on being in the right place at the right time. (2)

For each of the following pairs of statements, please select the one which best describes your view

☐ The average citizen can have an influence in government decisions. (1)

☐ This world is run by the few people in power, and there is not much the little guy can do about it. (2)

For each of the following pairs of statements, please select the one which best describes your view

- ☐ When I make plans, I am almost certain that I can make them work. (1)
- ☐ It is not always wise to plan too far ahead because many things turn out to be a matter of luck anyway. (2)

For each of the following pairs of statements, please select the one which best describes your view

- ☐ In my case, getting what I want has little or nothing to do with luck. (1)
- ☐ Many times we might just as well decide what to do by flipping a coin. (2)

For each of the following pairs of statements, please select the one which best describes your view

- ☐ What happens to me is my own doing. (1)
- ☐ Sometimes I feel that I don't have enough control over the direction my life is taking. (2)