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The Relationship between Computer Anxiety, Personality and Organisational Effectiveness

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A dissertation submitted to the Department of Psychology, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Industrial/Organisational Psychology

April 2011

Declaration

I hereby declare that this dissertation is my own unaided work and has not been submitted before for any other degree or examination at this or any other university

Warren David Beder _____

Date _____

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Abstract

This study focuses on the relationship between computer anxiety, personality and organisational effectiveness. In the past, there have been a vast array of studies conducted around these three variables. However, there has not been a study that encompasses all three together in one piece of research. The current study serves the purpose of filling a gap in the literature by examining the relationship between computer anxiety and two organisational effectiveness variables, that being; job satisfaction and intention to leave. This study also examines personality in terms of how it may act as a moderating variable between computer anxiety and the two organisational effectiveness variables.

Computer anxiety was assessed using the 'Computer-Anxiety rating Scale (CARS)' developed by Rosen and Weil (1992). Three of the Big Five dimensions of personality (extraversion, neuroticism and openness to experience) were assessed using an adapted version of the 'Big Five Inventory (BFI)' created by John, Donahue and Kentle (1991) (as cited in John and Srivastava, 1999). Job satisfaction was assessed using the 'Facet Satisfaction Scale' scale developed by O'Driscoll and Randall (1999), whereas intention to leave was assessed using the 'Turnover Intentions Scale' developed by O'Driscoll and Beehr (1994).

The sample was comprised of 223 individuals from three separate South African organisations. It was concluded that there was an inverse negative relationship between computer anxiety and intention to leave. Furthermore, there was a weak negative relationship between computer anxiety and openness to experience, as well as a weak positive relationship between computer anxiety and neuroticism. Finally, it was established that there was a weak negative relationship between neuroticism and job satisfaction, as well as a weak positive relationship between neuroticism and intention to leave. Based upon the results of the study at hand, none of the three personality

dimensions moderated the relationship between computer anxiety and either of the two organisational effectiveness variables.

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Introduction:

Technology has become a fundamental part of the modern day world, particularly in the organisational sense (Ahmad, Amin & Ismail, 2009). Organisations are continually harnessing the latest developments and trends in technology, in order to maintain a competitive advantage and ensure their continued growth and success within the greater economic environment in which they find themselves (Gallivan, 2003).

Computers and other technologies have had a fundamental impact on the way in which work is carried out (Wang, Shu & Tu, 2008). Technology has developed to such an extent that people who are working in the furthest corners of the world can access work data stored on a company server in another country be it day or night (Wang, Shu & Tu, 2008). Sami and Pangannaiah (2006) state that "computer operating systems and software versions are changing so fast, that by the time users get used to one version of the software, the next version gets released" (p. 430).

The present study served the purpose of examining the relationship between the computer anxiety experienced by employees and two organisational effectiveness variables, that being; job satisfaction and intention to leave. Individual differences were considered by examining the direct and moderating effects of personality.

In order to gain a rounded understanding of the sample population that was used in the study at hand, it was also necessary to examine the following demographic variables; age, gender, tenure, frequency of computer usage for work purposes, previous computer training, knowledge of computer training programs being undertaken in the sample organisations, the level of proficiency on computer-related tasks and the time spent per week on each task.

Literature Review

Computer anxiety has been a topic of major discussion over the last thirty years and as a result, a number of empirical studies have focused their research around this phenomenon. The research at hand required one to draw on past empirical research, literature and theory in order to explain the link between computer anxiety (the independent variable) and the various outcome variables in the study, those being; job satisfaction and intention to leave. In so doing, one examined three of the Big Five dimensions of personality in order to see why they might moderate the relationship between computer anxiety and the two organisational effectiveness variables.

Computer Anxiety

Weil and Rosen (1997) point out that research into the impact of computer usage on people is by no means a new phenomenon. In fact, it is something that has been a topic of interest from as early as 1963, when Robert Lee carried out a study across the United States of America. According to Lee (1970) the purpose of the study was to "examine popular beliefs and attitudes about one of the prime symbols of our rapidly changing technology – the electronic computer" (p. 53). Lee (1970) found that there were two conflicting sets of beliefs that arose out of his research. Advocates of the one belief viewed computerisation in a positive light. They maintained that computerisation was highly beneficial to the advancement of humanity (Weil & Rosen, 1997). Other individuals, viewed computerisation in a negative light, in that they believed that computers were likely to become so pervasive, that they would inevitably dominate society into the future (Weil & Rosen, 1997). An important comment that Lee (1970) made in his research, which is particularly relevant to the research at hand, is that "individual variations in the strength of these reactions to the computer are related to certain personality factors and life orientations that are highly pervasive in character" (p. 53).

Research that was conducted from the mid-1970s onwards, indicated that many people were beginning to foster more and more negative sentiments about the continual development of computers and technology in general (Weil & Rosen, 1997). They justified their feelings by indicating that technology was facilitating the breakdown in society in that it was replacing people with machines through the use of automation (Weil & Rosen, 1997).

In light of what has been said above, these negative feelings and fear that people experience as a result of technology, came to be termed 'technostress' (Weil & Rosen, 1997).

Larry Rosen and Michelle Weil are well known authors in the field of technostress research and have published many works on the phenomenon. They define technostress as a multidimensional construct which is best understood as being comprised of one or more of the following three dimensions, that being; computer anxiety, negative thoughts about computers and negative attitudes towards computers (Rosen & Weil, 1992). Rosen and Weil (1992) indicate that this conceptualisation was based upon the breakdown made by Jay (1981). According to Meier (1998) (as cited in Rosen and Weil, 1992), "Jay's work has been widely quoted as a rationale behind over 20 separate measures of computer attitudes, computer anxiety and computer aversion" (p. 7). Rosen and Weil (1992) indicate that an individual can experience different degrees of technostress, ranging from slight reactions on one of the three dimensions, to acute reactions on all three of the dimensions.

For the purposes of the current research, only one aspect of technostress was examined, that being computer anxiety. The other two dimensions were excluded due to practical and time constraints.

Computer anxiety can be described as being "a negative emotional state or negative cognition experienced by an individual when he/she is using a computer or computer equipment" (Parayitam, Desai, Desai & Eason, 2010,

p. 346). Computer anxiety is somewhat of conundrum, in that it is a phenomenon that does not seem to be decreasing, despite the fact that computers and computer-oriented technology are becoming more and more prevalent in the modern-day workplace and in society in general (Bozionelos, 2001)

In the work environment, computer anxiety can be highly detrimental, in that it is known to exert a great deal of psychological anguish upon an individual and as such, can create a number of different problems both for the individual and the organisation as a whole (Bozionelos, 2001).

Personality

Judge, Heller and Mount (2002) point out that over the last two decades, "consensus has emerged that a five factor model of personality, often termed the Big Five, can be used to describe the most salient aspects of personality" (p. 530). The five factors of personality are; extraversion, agreeableness, conscientiousness, neuroticism and openness (John & Srivastava, 1999). However, for the purpose of the research at hand, only three of the five factors were examined, that being extraversion, neuroticism and openness to experience. The reason for this choice is that these dimensions have been shown to be more frequently related to computer anxiety in previous empirical research, than the other two dimensions (Anthony, Clarke & Anderson, 2000; Korukonda, 2005; Namlu & Ceyhan, 2002, as cited in Ceyhan, 2006; Rice & Markey, 2009).

The relationship between computer anxiety and personality.

Extraversion.

The first personality factor that was examined in this paper is extraversion. Bakker, Van Der Zee, Lewig and Dollard (2006) define extraversion as being characterised by "a tendency to be self-confident, dominant, active and

excitement seeking" (p. 34). Costa and McCrae (1992) suggest that individuals who display extravert-like qualities are inclined to be "upbeat, energetic and optimistic" and tend to have a positive demeanour (p. 15). Watson and Clark (1997) (as cited in Judge et al. 2002) indicate that due to their nature, extraverted individuals are generally more successful at developing and fostering personal relationships with both friends as well as work colleagues than introverted individuals. Bakker et al. (2006) points out that extroverted individuals tend to focus on the "positive side of their experiences" (p. 4).

In a study conducted by Namlu and Ceyhan (2002) (as cited in Ceyhan, 2006) it was concluded that individuals who considered themselves to be extroverted, tended to have a lower level of computer anxiety than individuals who considered themselves to be introverted. Katz and Offir (1991) made a similar conclusion, in that they found extraverted teachers favoured computers more than those who were introverted.

In terms of what has been discussed above, it can be said that extroverted individuals are likely to have less computer anxiety than introverted individuals, due to the fact they are more outgoing and are likely to view computers and other computer-related technology in a more positive light. Thus it was postulated, that a negative relationship would exist between extroversion and computer anxiety. In this particular case, a negative relationship would denote that as extroversion increases, the level of computer anxiety decreases and vice versa.

Neuroticism.

The second factor of personality that was examined is neuroticism. Costa and McCrae (1992) indicate that this dimension "contrasts adjustment or emotional stability with maladjustment or neuroticism" (p. 14). In light of this, it can be said that at the one end of the spectrum is neuroticism (or low emotional stability) and on the other end, is emotional stability (or low

neuroticism). Magnus, Diener, Fujita and Pavot (1993) (as cited in Judge et al. 2002) suggest that individuals who are high in neuroticism are likely to appraise many situations as being negative, rather than positive, due to their "essentially negative nature" (p. 531). Furthermore, they are prone to experiencing "insecurity, anxiety and nervousness" when faced with stress (Korukonda, 2005, p. 314). Bakker et al. (2006) indicate that neurotic individuals have the tendency to use emotion-focused coping strategies, rather than problem-focused coping strategies when they are faced with adversities. As such, their coping strategy will be driven by an attempt to mitigate the negative feelings associated with experiencing stress, rather than finding a means to solve the underlying problem. Steptoe (1991) indicates that emotion focused coping strategies can be split into behavioural and cognitive strategies. According to Steptoe (1991), emotion-focused behavioural strategies include strategies such as; information avoidance and social support, whereas emotion-focused cognitive strategies include strategies, such as repressive coping responses and denial etc.

In contrast to individuals that score high on the neuroticism dimension, individuals who score low on the dimension (high emotional stability) are considered to be "calm, even-tempered, and relaxed" and "are able to face stressful situations without becoming upset or rattled" (Costa & McCrae, 1992, p. 15).

It is important to note that a number of studies of the Big Five Factors of personality have examined the inverse of the neuroticism factor, that being emotional stability (Barrick & Mount, 1996; Salgado, 2000; Zimmerman, 2008). However, the research at hand specifically looked at neuroticism, rather than the inverse, i.e. high neuroticism versus low neuroticism, rather than high versus low emotional stability.

Previous empirical research indicates that there is a significant relationship between neuroticism and computer anxiety. Korukonda (2005) found that there was a weak positive correlation between neuroticism and computer

anxiety. Anthony et al. (2000) conducted a study examining the relationship between technophobia and the five factor model of personality in the South African academic environment. In doing so, they used Rosen and Weil's (1992) Computer Anxiety Rating Scale (CARS) and the Computer Thoughts Survey (CTS) (Anthony et al., 2000). They found a significant positive relationship between neuroticism and the scores on the Computer Anxiety Rating Scale (Anthony et al., 2000). Again, this indicates that there is a positive relationship between neuroticism and computer anxiety (Anthony et al., 2000).

In terms of the empirical research mentioned above, it can be said, that since neurotic individuals are negative in nature and are prone to experiencing anxiety, they would also be likely to experience anxiety when using computers and other computer-related technology. In other words, it was postulated, that like previous empirical research, there would be a positive relationship between neuroticism and computer anxiety. A positive relationship in this context, denotes that as neuroticism increases, so does computer anxiety.

Openness to experience.

The third and last dimension of personality that was examined, was openness to experience. It can be described as being "an individual's range of interests and tendency to seek novelty, as opposed to finding comfort in the known and familiar" (Korukonda, 2005, p. 315). In terms of this understanding, it can be surmised that individuals displaying greater openness to experience, would be more accepting of technology and would be less likely to experience computer anxiety. Korukonda (2005) confirmed this in his study, in which he found there to be a weak negative relationship between openness and technophobia at the .05 level of significance. Anthony et al. (2000), found there to be a weak to moderate negative correlation between openness to experience and the scores of the Computer Anxiety Rating Scale at the .05 level of significance. This indicates that there is a negative relationship that exists between openness to experience and computer anxiety.

It is apparent from the empirical research discussed above, that individuals that are open to experience, have a tendency to welcome the unfamiliar and are likely to view computers and other new technologies in a positive light. As such, it was expected that like the previous empirical research, there would be a negative relationship between openness to experience and computer anxiety. A negative relationship in this context denotes that as openness to experience increases, computer anxiety decreases and vice versa.

Based upon what has been discussed above, it is apparent that there is a fairly large amount of literature and previous research to support the existence of relationships between computer anxiety and the various personality dimensions that are being examined in the research at hand. In light of this, the present research served the purpose of re-affirming the existence of these relationships as a means to examine how personality may moderate the relationship between computer anxiety and the two organisational effectiveness variables.

Organisational Effectiveness

Organisational effectiveness is a complex multi-dimensional concept that has been defined according to a number of different approaches over the years (Robbins, 1990). Robbins (1990) indicates that the two most commonly used approaches in organisational theory are the goal-attainment approach and the systems approach. According to Robbins (1990), the goal attainment theory defines organisational effectiveness as being “the accomplishment of ends”, whereas the systems approach defines it as the “ability to acquire inputs, process these inputs, channel the outputs, and maintain stability and balance in the system” (p. 77). In evaluating these two approaches, it seems apparent that a feature that may underlie organisational effectiveness is in fact organisational success. Based upon this understanding, it can be argued that an organisation is working in an effective manner if it is successfully attaining goals and channelling outputs.

Campbell (1977) indicates that there are a number of criteria that have been used to measure organisational effectiveness. It would appear that some of these criteria can be viewed positively, whereas others can be viewed negatively. These criteria include; overall effectiveness, productivity, efficiency, job satisfaction, absenteeism, motivation and turnover, amongst others.

In the research at hand, two of these criteria were examined, that being job satisfaction and intention to leave. Intention to leave, otherwise known as turnover intention, was chosen rather than turnover itself, due to the fact that it would not have been possible to measure actual turnover of employees, as the study was examining individuals that were still employed at the sample organisations.

It is important to note that job satisfaction and intention to leave have consistently been shown to be moderately to strongly related to one another in a number of previous empirical research studies (Duraisingham, Pidd & Roche, 2009; Freund, 2005; Hellman, 1997; Hopper, 2009; O'Driscoll & Beehr, 1994; Riley, 2006).

Job satisfaction.

Coomber and Barriball (2005) point out that job satisfaction has been defined in many ways. This is largely due to the fact that there have been "multiple variables that have been studied in relation to it" (Coomber & Barriball, 2005, p. 299). However, throughout the theoretical and conceptual understandings of job satisfaction, there are two main themes that appear to exist; "that job satisfaction has an affective component, i.e. a feeling of satisfaction, and a perceptual component which is the evaluation of whether one's job meets one's needs" (Tovey & Adams, 1999; as cited in Coomber & Barriball, 2005, p. 299).

Spector (1997) emphasizes the idea that in the past, job satisfaction studies have either focused on overall feelings about one's job, which encompass all of the attitudes that an individual may feel about their job (the global approach) or as a set of attitudes (the facet approach).

The global approach to assessing job satisfaction is primarily used when "the overall or bottom line attitude is of interest" (Spector, 1997, p. 2). Based upon this understanding of the global approach, it can be said that an individual will appraise their job as a whole, as a means to establish whether they are satisfied or dissatisfied. It is apparent that there are numerous studies that have preferred to assess job satisfaction from a global perspective rather than a facet perspective (Hopper, 2009; Judge et al., 2002; Miller, Mire & Kim, 2009; Riley, 2006; Tokar & Subich, 1997).

With regards to the facet approach, researchers have typically investigated the various facets that are most frequently related to the different aspects of one's job, including; "pay or fringe benefits, other people such as co-workers or supervisors, the nature of the work itself, and the organisation itself" (Spector, 1997, p. 3). O'Driscoll and Randall (1999) argue that these facets can generally be broken up into two groups of rewards, intrinsic rewards and extrinsic rewards.

Intrinsic rewards are considered to be the different aspects that are present within a job itself, such as "variety, challenge and autonomy" (O'Driscoll & Randall, 1999,p. 200). On the other hand, extrinsic rewards are elements which are external to the job itself, such as "pay and fringe benefits, promotion and advancement opportunities within the organisation, the social climate, and physical working conditions" (O'Driscoll & Randall, 1999, p. 200). Spector (1997) indicates that according to the facet satisfaction point of view, job satisfaction or dissatisfaction will be based upon how an employee appraises both the intrinsic and extrinsic aspects that are present within the scope of their job. Thus, it is generally postulated that if employees appraise them in a positive regard, they are likely to experience job satisfaction,

whereas if they appraise them in a negative way, they are likely to experience job dissatisfaction (Spector, 1997).

However, it can be argued that there is not a significant enough difference between the two major facets (intrinsic facets and extrinsic facets) to measure them independently of one another. This is due to the fact that these two facets tend to be strongly correlated to one another, as is evident in O'Driscoll and Randall's (1999) study amongst others (Arvey, McCall, Bouchard, Taubman & Cavanaugh, 1994; Rothmann, 2008). O'Driscoll and Randall (1999) used a self-developed scale, called the 'Facet Satisfaction Scale', to measure job satisfaction based upon the presence of intrinsic and extrinsic rewards. Their results indicate that there was a strong positive correlation between the two facets (r = .62) (O'Driscoll & Randall, 1999). Other research studies have found similarly strong correlations (Arvey et al., 1994; Rothmann, 2008). Arvey et al. (1994) found a significant positive correlation of .65 between intrinsic and extrinsic satisfaction, whereas Rothmann (2008) found a significant correlation of .61.

This argument gains further credence in that the 'Facet Satisfaction Scale' used by O'Driscoll and Randall (1999) has subsequently been used by Riley (2006) and Hopper (2009) to measure overall job satisfaction, rather than as a facet satisfaction measure. Both Riley (2006) and Hoppers' (2009) theses were supervised by Michael O'Driscoll himself.

The relationship between computer anxiety and job satisfaction.

Spector (1997) indicates the existence of a negative relationship between job satisfaction and general anxiety. This relationship has been shown to exist in a number of empirical studies (Jex & Gudanowski, 1992; Spector, Dwyer & Jex, 1988). A negative relationship in this context, suggests that as job satisfaction increases, general anxiety decreases. Conversely, as job satisfaction decreases (towards dissatisfaction), general anxiety increases.

Whilst it appears that there is a link between job satisfaction and general anxiety, there did not seem to be a study that examined the link between computer anxiety and job satisfaction in particular. The current research postulated the existence of this relationship within the contextual framework of the Transactional Model of stress created by Cox and McKay in 1976 (Cox, 1978). Thus, the following research served the purpose of filling a gap in the literature by examining the relationship between computer anxiety and job satisfaction.

The relationship between personality and job satisfaction.

Previous empirical research has demonstrated that significant relationships exist between job satisfaction and extraversion (Judge, Higgins, Thoresen & Barrick, 1999; Judge et al., 2002; Miller et al., 2009; Tokar & Subich, 1997).

Extraversion.

Timothy A. Judge is considered to be a seminal author within the field of personality research and has published numerous journal articles. Judge et al. (2002) conducted a meta-analysis of the Five Factor Model of Personality and Job Satisfaction using 334 correlations from 163 independent samples. Based upon 75 correlations and a combined sample size of approximately 20,184 individuals, they found there to be a weak significant relationship between extraversion and job satisfaction (Judge et al., 2002). DeNeve and Cooper (1998) (as cited in Judge et al. 2002) suggest that extroversion is “a key aspect of the happy personality” (p. 534). In light of this understanding, it can be said that extroverted individuals are likely to experience satisfaction both within their general life domains, as well as within their jobs (Judge et al., 2002).

Neuroticism.

The personality factor, neuroticism, has also been shown to be related to job satisfaction in a number of different studies (Tokar & Subich, 1997; Judge et al., 2002). In the meta-analytic study, Judge et al. (2002), found there to be a weak to moderate negative relationship between neuroticism and job satisfaction. This result was based upon 92 correlations and a combined sample of approximately 24,527 individuals (Judge et al., 2002). They indicated in their study that neuroticism was found to be the "strongest and most consistent correlate of job satisfaction" (Judge et al., 2002, p. 534). Tokar and Subich (1997) also concluded that there was a weak negative relationship between neuroticism and job satisfaction. The negative relationship found in both of the studies indicates that as neuroticism increases, job satisfaction decreases and vice versa (Judge et al., 2002; Miller et al., 2009; Tokar & Subich, 1997).

Openness to experience.

Previous research has also shown the personality factor, openness to experience, to be significantly related to job satisfaction (Foulkrod, Field & Brown, 2010; Lounsbury, Moffitt, Gibson, Drost & Stevens, 2007). Both studies found weak positive relationships between openness to experience and job satisfaction (Foulkrod et al., 2010; Lounsbury, et al., 2007). Based upon these findings, it can be said that the more open to experience a person is, the more likely they are to experience job satisfaction.

In light of what has been discussed above, it is apparent that there is a fairly large amount of literature and previous research to support the existence of relationships between job satisfaction and the three personality dimensions that are being examined in the research at hand. The present research served the purpose of re-affirming the existence of these relationships as a means to examine how personality may moderate the relationship between computer anxiety and the two organisational effectiveness variables.

Intention to leave (turnover intention).

According to Cho, Johanson and Guchait (2008), intention to leave an organisation involves an employee's voluntary intention to leave one's job. As a result, an individual will be inclined to seek alternative employment. Cho et al. (2008) points out that employee turnover can have a detrimental effect upon an organisation. This is due to the fact that when employees leave their jobs, an organisation can be subject to a variety of negative consequences, such as; unnecessary "employee recruitment and training costs", as well as a "low level of employee morale" within their organisation (Gray, Niehoff & Miller; as cited in Cho et al., 2008, p. 374). Lee and Mowday (1987) indicate that an individual's intention to leave is in fact the antecedent of their actual exit from the organisation. Spector (1997) highlights the idea that one's intention to leave is fuelled predominantly by dissatisfaction with one or more aspects of one's job.

The relationship between computer anxiety and intention to leave.

The current research attempted to draw a link between computer anxiety (the independent variable) and intention to leave (an outcome or dependant variable). A survey of previous empirical research indicated that there was a dearth of empirical research linking these two variables. The current research postulated the existence of a positive relationship between the computer anxiety and intention to leave within the context of Cox and McKay's Transactional Model of stress created in 1976, which will be discussed below (Cox, 1978). Thus, the following research served the purpose of filling a gap in the literature by examining the relationship between computer anxiety and intention to leave.

The relationship between personality and intention to leave.

Previous empirical works have indicated that there is a relationship between extraversion and intention to leave (Salgado, 2002; Timmerman, 2006).

Salgado (2002) conducted a meta-analytic study examining the Big Five Personality Dimensions and counterproductive behaviours. He found there to be a weak negative relationship between the personality dimension extraversion and turnover. Timmerman (2006) conducted a subsequent study also examining the relationship between turnover and personality traits. Timmerman (2006) argued that the results found in Salgado's (2002) meta-analysis, were open to argument, due to the fact that he found very few correlations between the Big Five Dimensions and turnover. In light of this, Timmerman (2006) indicated that conflicting results were in fact possible. In his study, Timmerman (2006) found a contrary result to Salgado (2000) in that he concluded that a weak positive correlation relationship exists between the personality factor, extraversion and turnover.

Neuroticism has also been found to be related to turnover intentions in a number of different meta-analytic studies (Barrick & Mount, 1996; Salgado, 2002; Zimmerman, 2008). All these studies indicate the existence of a weak to moderate negative relationship between emotional stability and intention to leave. Thus, as emotional stability decreases, intention to leave one's job increases and vice versa. However, due to the fact that the present study examined neuroticism instead of emotional stability, it was inferred that a high level of neuroticism (which is the same as low emotional stability), would be related to a greater intention to leave, thus indicating a positive relationship between the two variables.

Finally, openness to experience has also been found to be related to intention to leave in previous research studies (Salgado, 2002; Timmerman, 2006). Salgado (2002) found there to be a weak negative relationship between openness to experience and turnover, whereas Timmerman (2006) found there to be a weak positive relationship.

Based upon a discussion of the empirical research above, it is apparent that there have been a number of different studies that have examined the relationship between personality and intention to leave. Furthermore, it would

appear that some of these have found contrary results regarding the direction of the relationships between the two variables, particularly between extraversion and intention to leave, and between openness and intention to leave. As such, the current research served the purpose of examining the relationship between intention to leave and the three dimensions of personality, as a means to gain more insight into the nature of the relationship between these two variables.

The moderating effect of personality on the relationship between computer anxiety and organisational effectiveness.

Finally, it was proposed that including a moderating variable between an independent and dependent variable would affect the nature of the relationship between the two variables. In terms of this understanding, the current research examined whether the inclusion of personality as a moderator variable would impact upon the relationship between computer anxiety and the two organisational effectiveness variables; job satisfaction and intention to leave.

Theoretical Framework

In attempting to explain the possible relationships between the different variables in the study at hand, it was necessary to draw upon a stress-moderator-outcome model.

The stress-outcome relationship can be understood from a number of different theoretical perspectives. Cooper, Dewe and O'Driscoll (2001) point out that there are a number of different models that provide a strong theoretical context for understanding the nature of workplace stress. These include models, such as; The Transactional Stress Model created by Cox and Mackay (1976) and Lazarus and Launtier (1978); The Person-Environment Fit Approach created by French, Caplan and van Harrison (1982); The General Systems Model of Stress created by Cox and McKay (1981) and The

Cybernetic Model of stress developed by Cummings and Cooper (1979) etc. (as cited in Cooper et al., 2001).

Cooper et al. (2001) indicate that stress can be defined as “a stimulus, a response, or the result of an interaction between the two, with the interaction described in terms of some imbalance between the person and the environment” (p. 3). The Stimulus and Response Models of stress were initially theorised in the late 1940’s and early 1950’s (Cox, 1978).

Response based models propose that the ‘stressor’ is the stimulus, whereas the resulting ‘stress’ is the response (Cox, 1978). On the other hand, stimulus based models propose that ‘stress’ is the stimulus, whereas ‘strain’ is the response. Cooper et al. (2001) point out that one of the major shortcomings of the stimulus and response models of stress is that they tend to “ignore individual differences and the perceptual and cognitive processes that might underpin these differences” (Cooper et al., 2001). As a result, it was proposed that a theory that could encompass both the stimulus and response models together, whilst at the same time incorporating individual differences into its framework, would be able to better explain the stress-outcome relationship (Cox, 1978). This saw the creation of the Transactional Model of Stress by Cox and MacKay in 1976 (Malim, Birch, Hayward & Wadeley, 1998).

The Transactional Model of Stress

Cooper et al. (2001) offer an excellent explanation of the nature of stress according to Cox and MacKay’s Transactional Stress Model. They state that;

> Stress is not a factor that resides in the individual or the environment; rather, it is embedded in the ongoing process that involves individuals transacting with their environments, making appraisals of these encounters, and attempting to cope with the issues that arise. (Cooper et al., 2001, p. 12)

In the research at hand, the Cox and McKay's Transactional Model of stress was used as a contextual framework to explain the relationships between computer anxiety and the organisational effectiveness variables, which were represented by job satisfaction and intention to leave. In doing so, the model was also used to examine whether personality moderated this relationship.

Cox (1978) indicates that their version of the Transactional Stress Model involves five sequential stages (see Figure 1 below). The following stages will be discussed with special reference to stress within the scope of one's job.

The first stage involves an individual's subjective evaluation of a demand/s that they are faced in their immediate environment (Cox, 1978). In applying this stage to the research at hand, it is apparent that the individual will identify computer usage as being a component that is inherent within the scope of their job.

The second stage is one of the central components of the model in that it involves "the person's perception of the demand and his own ability to cope" (Cox, 1978, p. 18). This is achieved through a cognitive appraisal of the situation or event (Cox & Ferguson, 1991). "When there is an imbalance between the perceived demand and the person's perception of his/her capacity to meet that demand" an individual is likely to experience stress (Cox, 1978, p. 18). At this stage, an employee will appraise the situation at hand in terms of their perceived capability of dealing with computer usage within the scope of their job. If they feel that they are not capable of dealing with this perceived demand, it can be inferred that they are likely to experience computer anxiety.

In the third stage, the imbalance of the previous stage is "accompanied by the subjective (emotional) experience of stress" (Cox, 1978, p. 20). Individuals will respond to the imbalance by attempting to make various physiological as well as cognitive and behavioural changes that will help them deal with their stress (Cox, 1978). Cox and Ferguson (1991) suggest that this stage is

predominantly concerned with appraisal of the stress imbalance and the various changes necessary to deal with it. The notion of ‘strain’ (which is included in other stress models) as well as that of coping are included in the psychological, physiological and behavioural responses to the stressor which are inherent in this stage of the model. It should be noted however, that Cox and McKay’s Transactional model of stress does not appear to explicitly use the term ‘strain’ to describe these responses (Cox, 1978).

The fourth stage of the process involves an evaluation of the consequences of the three previous stages including the coping techniques that one has attempted to use in the fourth stage (Vogel, 2007). In terms of this understanding, it can be said that at this stage, an individual is likely to experience various personal and organisational outcomes (Cooper et al., 2001). In the research at hand, the outcome variables of the stress process are job satisfaction and an employee’s intention to leave. It is proposed that computer anxiety is likely to impact upon both these two variables in a negative way.

The fifth and final stage would appear to be the most important stage of the stress process, in that it is this stage that actually makes this particular model transactional in nature. This stage involves feedback. Feedback is a process whereby an evaluation of the effectiveness of the coping techniques that were used in the previous stage of the model can result in a re-evaluation of all other stages (Cox, 1978). This re-evaluation can result in changes to the previous stages of the model (stage 1,2 and 3), thereby resulting in a new evaluation at the fourth stage and new feedback responses at the fifth stage (Cox, 1978). Cox (1978) indicates that this feedback mechanism causes this particular model of stress to be “cyclic rather than linear” (Cox, 1978, p. 18). In light of this, it is apparent that an individual will keep re-experiencing the five stages of stress until such time that they are able to come to some sort of solution regarding the initial problem.

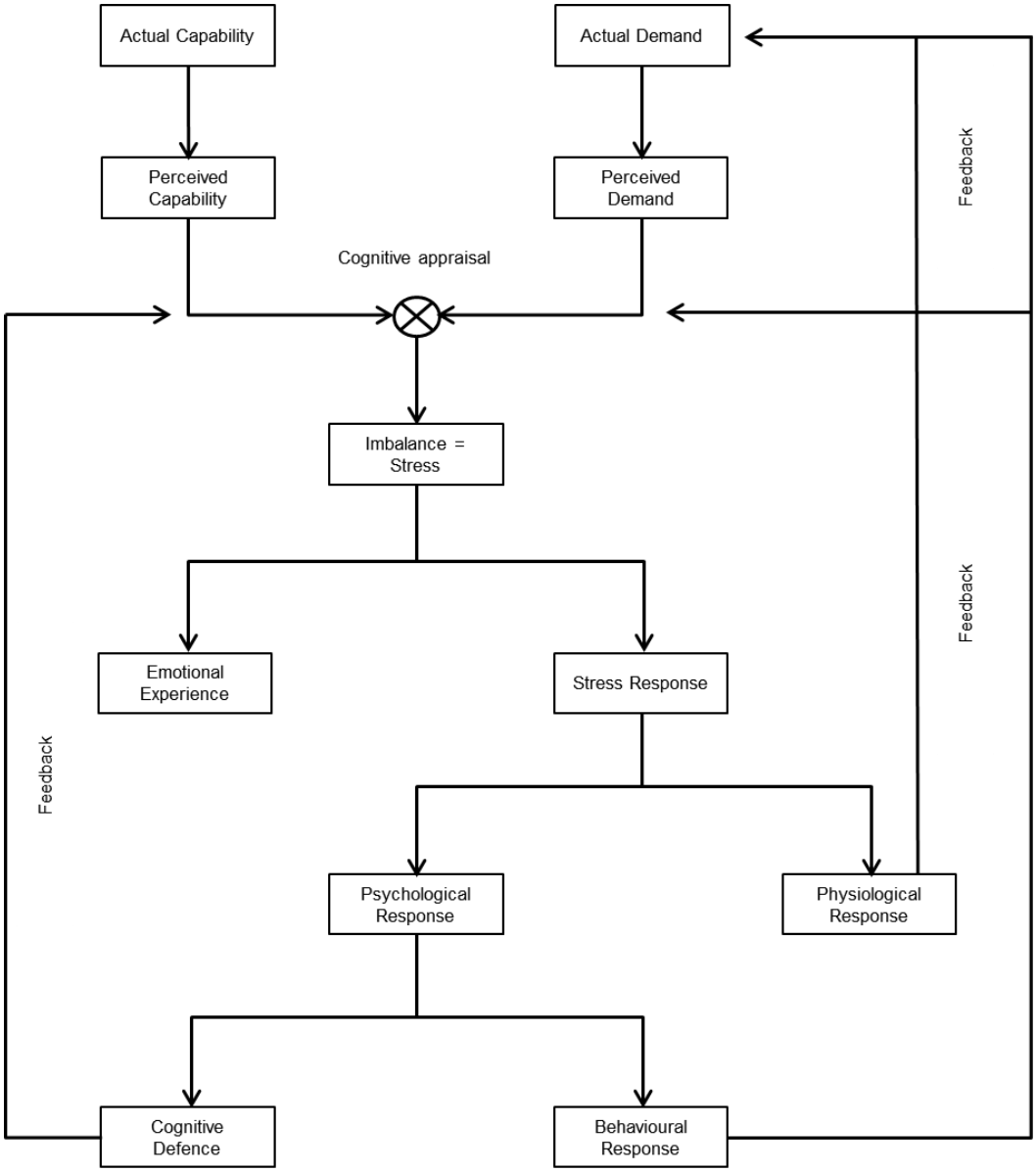


Figure 1: Cox and McKay's (1976) Transactional Model of Stress. Adapted from "Stress" by T. Cox, 1978, p. 19.

Personality as a moderator in the Transactional Model of Stress.

Cooper et al. (2001) indicate that various moderator variables have been identified within the scope of stress research. Baron and Kenny (1986) state that a moderator variable is a variable that "affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable" (p. 1174). Individual differences are intrinsic to

the stress-outcome relationship in Cox and McKay's Transactional Model of Stress (Cox 1987; Cox & Ferguson, 1991; Mark & Smith, 2008).

Cox (1978), Cooper et al. (2001) and Malim et al. (1998) point out that personality is an important moderating variable which is inherent to Cox and McKay's Transactional Model of Stress. It would appear that the unique nature of an individual's personality can impact upon both their appraisal of their perceived demand and perceived capability (cognitive appraisal) and as well as their coping responses (Cox & Ferguson, 1991). As such, it can actually impact the overall stress response by moderating the relationship between the variable that is appraised as being stressful and the outcome variables (Cooper et al., 2001).

Thus, in applying the above mentioned model to the research at hand, it was postulated that the dimensions of personality were likely to moderate the relationship between computer anxiety (the stress variable) and organisational effectiveness (the outcome variable), which were represented by job satisfaction and intention to leave.

The Proposed Study

The rationale for conducting this particular piece of research was that computers and other computer-related technologies are becoming increasingly more entrenched within our everyday lives, particularly in the organisational sense (Ahmad et al., 2009). Previous literature and research discussed above has shown that certain individuals are prone to experiencing computer anxiety when using such technology. Computer anxiety can have a highly detrimental effect within the work environment and can create a number of different problems both for the individual and the organisation as a whole (Bozionelos, 2001). It terms of this, it was necessary to understand the impact of computer anxiety upon organisational effectiveness.

It was clear that whilst there has been empirical research that has been conducted between computer anxiety and personality and between personality, job satisfaction and intention to leave, there did not appear to be a study that encompasses all these variables in one piece of research. Furthermore, there did not seem be a study that had examined the direct relationship between computer anxiety and either of the organisational effectiveness variables in South Africa or abroad.

The current study served the purpose of filling a gap in the literature by examining the relationship between computer anxiety and organisational effectiveness. The study also examined personality in terms of how it may have acted as a moderating variable between computer anxiety (the independent variable) and the two organisational effectiveness variables (the dependant variables).

In examining computer anxiety, the present research focused primarily on individuals working in organisations in South Africa's formal sector. South Africa's formal sector consists of individuals working in formal employment that have defined executive and administrative systems. This sample of individuals was chosen due to the fact that individuals working in formal sector organisations are likely to have had some exposure to computers and other computer-related technologies within the environment in which they work as well as at the institution where they received education.

Aside from the main variables, the study also examined a number of demographic variables, including age of the employees, gender, tenure in the organisation, past computer training, knowledge of computer training programs being undertaken in the sample organisations, the level of proficiency on computer-related tasks, the time spent weekly on each task and finally, the frequency of computer usage within the scope of one's job.

The following research helped contribute to an understanding of computer anxiety, personality and organisational effectiveness and the interaction between these three variables.

Research Questions

Research Question One:
Is there a relationship between computer anxiety and organisational effectiveness?

Research Question Two:
Is there a relationship between computer anxiety and personality?

Research Question Three:
Is there a relationship between personality and organisational effectiveness?

Research Question Four:
Does personality moderate the relationship between computer anxiety and organisational effectiveness?

Methodology

Research Design

The current study had a non-experimental design due to the fact that the independent variable (computer anxiety) was measured rather than manipulated. Furthermore, the research design was cross sectional, as it compared participants on a number of individual variables simultaneously, i.e. data was collected at one point in time. Research was conducted in a quantitative manner through the use of a self -reported survey.

The Instruments

Computer anxiety.

This variable was measured using an instrument developed by Rosen and Weil (1992), namely; the 'Computer-Anxiety Rating Scale'.

The 'Computer-Anxiety Rating Scale' (CARS) developed by Rosen and Weil (1992) was used to examine computer-related anxiety. This scale consists of twenty items on a five point Likert scale (1=not at all, 5=very much). The scale includes items about "the machines themselves, their role in society, computer programming, computer use, consumer uses of technology, problems with computers and technology and technology in the media" (Janisse, 2002, p. 31). All the items are phrased in a positive direction, whereby a higher score indicates greater computer anxiety (Rosen & Weil, 1992). Anthony et al. (2000) report that the reliability for these items is .90.

Personality.

The personality variable was assessed using the 'Big Five Inventory (BFI)' developed by John, Donahue and Kentle (1991) (as cited in John and Srivastava, 1999). The inventory consists of 44 items that measure

extraversion, agreeableness, conscientiousness, neuroticism and openness. Eighteen of the items relating to the dimensions agreeableness and conscientiousness, were omitted, as these dimensions were not examined in the study at hand.

Extraversion was assessed using eight items on a five point Likert scale (1=strongly disagree, 5=strongly agree. Three of the items (6, 21 and 31) are reverse scored items. John and Srivastava (1999) report that overall reliability for these items is .88.

Neuroticism was assessed using eight items on a five point Likert scale (1=strongly disagree, 5=strongly agree). Three of the items (9, 24 and 34) are reverse scored items. John and Srivastava (1999) report that reliability for these items is .84.

Openness to experience was assessed using ten items on a five point Likert scale (1=strongly disagree, 5=strongly agree). Two of the items (35 and 41) are reverse scored items. John and Srivastava (1999) report that reliability for these items is .81.

Organisational effectiveness.

Organisational effectiveness was assessed using two variables, that being; job satisfaction and intention to leave.

Job Satisfaction was assessed using sixteen items on a seven point Likert scale (1=very dissatisfied, 7=very satisfied), from the ‘Facet Satisfaction scale’ developed by O’Driscoll and Randall (1999). Reliability coefficients for this scale range from 0.82 to .88. (Hopper, 2009; Riley, 2006). ‘The Facet Satisfaction scale’ has been used successfully as an overall measure of job satisfaction in two research studies supervised by Michael O’Driscoll, one of the authors of the original scale (Hopper, 2009; Riley, 2006).

Intention to Leave was assessed using three items on a six point response scale, from the Turnover Intentions Scale developed by O'Driscoll and Beehr (1994). O'Driscoll and Beehr (1994) report that reliability for these items is .93.

TABLE 1

Summary of the reliability and source of the instruments used in this study

Variables	Description	Source	Reliability
Computer Anxiety	20 Items	(Rosen & Weil, 1992)	.90
Extraversion	8 Items	(John et al., 1991)	.88
Neuroticism	8 Items	(John et al., 1991)	.84
Openness	10 Items	(John et al.,1991)	.81
Job Satisfaction	16 Items	(O'Driscoll & Randall 1999; as cited in Hopper, 2009).	.88
Intention to Leave	3 Items	(O'Driscoll & Beehr, 1994)	.93

Sample

The subjects for this study consisted of 223 white collar workers working in three different organisations in South Africa's formal sector. The first organisation was a private sector banking organisation. The researcher managed to attain 31 participants from this organisation. The second organisation was a broadcasting company. The researcher managed to attain a sample of 121 participants from this organisation. Finally, the third organisation was a public sector organisation specialising in data management. The researcher managed to attain a sample of 71 participants from this organisation.

Whilst the researcher never managed to attain a sample of 300 or more individuals, due to logistical and practical circumstances, the sample was sufficiently large enough to perform moderated multiple regression. However, it should be noted that the smaller sample size reduced the power of the moderation analysis.

The sample consisted of both male and female individuals ranging in age from 18 to 60 years old. The mean age of individuals of all three organisations was very similar, 33.53, 32.79 and 33.53 years of age respectively. The sample from the first organisation had a greater percentage of males (54.84%) than females (45.16%). The sample from the second organisation had a greater percentage of females (59.32%) than males (40.68%). Finally, the third organisation also had a greater percentage of males (55.71%) than females (44.29%). However, the overall sample was closely matched in terms of its percentage of males and females, with 47.49% and 52.51% respectively.

The average tenure for each of the three organisations was 3.42, 6.67 and 4.12 years respectively. The overall average tenure for all three organisations was 5.33 years.

A large percentage of each of the three sample organisations had undergone previous computer training with 96.67, 83.05 and 87.32% respectively. The overall percentage of individuals having undergone previous computer training for the whole sample was 86.30%.

Finally, each of the three sample organisations differed quite substantially in terms of the percentages of individuals who knew about whether or not their organisation offered formal computer training programs with 43.33, 79.13 and 100% respectively. The average percentage of individuals having knowledge of formal computer training programs for the whole sample was 80.84%

As a prerequisite requirement, each of the organisations had to have a similar organisational structure in order to ensure consistency. This sample was

chosen particularly because these individuals were more likely to have some computer knowledge due to the fact that they have been exposed to computers and other forms of technology in both the environment in which they worked, as well as the institution where they received primary and/or secondary education. Furthermore, they were more likely to have access to a computer than individuals working in the informal sector.

Participation in the study was voluntary, as well as anonymous. The study was conducted using a self-report survey containing computer anxiety, personality and organisational effectiveness items.

TABLE 2

Demographic information collected from the sample organisations

	Number of Participants	Mean age	Gender (%)	Tenure (years)	Previous computer training (%)	Knowledge of training program (%)
Organisation 1	31	33.53	M = 54.84 F = 45.16	3.42	96.67	43.33
Organisation 2	121	32.79	M = 40.68 F = 59.32	6.67	83.05	79.13
Organisation 3	71	33.52	M = 55.71 F= 44.29	4.12	87.32	100
Total	223	33.13	M = 47.49 F = 52.51	5.33	86.30	80.84

KEY: M = Male F= Female

Procedure

The researcher obtained permission to access the organisations by contacting the head of each organisation's Human Resources department. The researcher explained the nature of the study and asked permission to distribute questionnaires to consenting individuals in available organisational departments.

The Human Resource department of each organisation sent around an email to all their staff in available departments informing them of the scope of the research at hand. They then set up a number of times for the researcher to meet with individuals interested in partaking in the study. Questionnaires were distributed to all individuals who attended the various meetings. All individuals were given the option of choosing whether they wished to complete the questionnaire or not. They were also informed that they would not be advantaged or disadvantaged by choosing to complete or not complete the questionnaire. Participants were then given a specific time frame in which to fill out the questionnaire. They were also informed that completion of the questionnaire would indicate acceptance of the offer to participate in the study. After being completed, the questionnaires were sealed with a large sticker by the participant and placed into a sealed box in a designated area. The researcher collected the questionnaires at regular intervals during the specific time frame, thereby allowing the participants to fill out the questionnaire at their own convenience.

The researcher then coded the data into a format capable of being analysed in the statistical program SAS. Various statistical tests were run in order to answer the research questions.

Ethical Considerations

All the necessary procedures were undertaken by the researcher to minimise any ethical implications arising from the study. Prior to conducting the research, the researcher gave the employees in each organisation a cover letter explaining all the details of the study. The letter stated that participation in the study was completely voluntary. The participants were informed of all the procedures involved in the study. The letter served the purpose of ensuring the complete privacy of the participant, in that it guaranteed that all information obtained from the participant was totally anonymous. This means that even the researcher himself would not know the identity of the participant.

In order to ensure complete confidentiality, the participants were instructed to seal the questionnaire with a large sticker and then place the completed questionnaire into a box in a designated area. This served the purpose of ensuring that no one in their organisation had access to the responses contained within the completed questionnaires. It was necessary to assure the participants that the results of the study would not negatively influence their job and that the research was being conducted solely for research purposes outside the scope of the organisation to which they belonged.
As the raw data contained no identifying information, there was little ethical consequence to its handling. Nevertheless, electronic copies of the data set were given over to the University of the Witwatersrand psychology department for safe keeping. On completion of the research, the researcher made the results of the study available to the sample organisations on the notice boards in each of their Human Resource departments respectively. Furthermore, participants were given the option of requesting feedback directly from the researcher. In order to protect the participants, results reflected group scores rather than individual scores.

Methods of Analysis

The statistical program SAS was used to perform the statistical analyses for the research at hand.

Firstly, it was necessary to measure the Cronbach's alpha. Cronbach's alpha is a statistical analysis that is used to measure the reliability of the items in a scale (Howell, 2004). An alpha value of approximately 0.7 and above indicates a reliable measure.

Prior to the actual analysis, the researcher performed a distribution analysis (using SAS) to check whether or not the data was normally distributed. Whilst in general most the variables were normally distributed, some were found to have slightly problematic distributions.

Correlation coefficients were used to examine the relationships between the different variables in the study. The correlation coefficient that was used to examine these relationships was the Pearson product-moment correlation coefficient. Sheskin (2004) indicates that a Pearson product-moment correlation coefficient is a parametric test of association which determines the degree to which a linear relationship exists between two or more variables. Due to the slightly problematic distribution of some of the variables, the results of the Pearson's product-moment correlation coefficients were compared with Spearman's rank correlation coefficients, a non-parametric test of association. It was determined that there was no substantial difference between the scores of the two tests and as such, Pearson product-moment correlation coefficient was used as the statistical analysis for examining the first three research questions (Q1, Q2 and Q3).

Moderated multiple regression was used to measure the relationship between computer anxiety and the two organisational effectiveness criteria, whilst taking into account the effect of personality. According to Kenny (2009), a moderator variable alters the strength and/or direction of the relationship between the independent variable and the dependant variable. The residual plots for the regression analysis were normally distributed, thus satisfying the requirement for the use of parametric regression analysis in the form of Hierarchical Linear Regression.

Results:

The results section provides the results of the statistical analyses that were run on the data. Tests were conducted in order to examine the internal reliability and mean scores of the participants for each of the main variables used in the study. This was followed by an examination of the correlation coefficients. Finally, moderated multiple regression in the form of hierarchical linear regression was used to examine whether personality moderated the relationship between computer anxiety and the organisational effectiveness variables.

Descriptive Statistics for General Computer Usage

Based upon the general computer usage section of the biographical questionnaire, it would appear that Internet and email were the most commonly used tasks with 98.65% and 99.55% of the sample using each task respectively. Word-processing (86.55%), Excel (85.20%) and Powerpoint (70.85), Data analysis and manipulation (59.19%), entertainment (59.94%), and social networking websites (56.05%) also appeared to be tasks that were used by a large proportion of the sample.

Computer programming and Voice Over Internet Protocol (VOIP) were only used by a small percentage of the sample with 12.56% and 20.63% of the sample using each task respectively (see Table 3).

The descriptive statistics for general computer usage indicate that on average the sample spent more time using email than any other task, approximately 20+ hours per week (see Table 3).

The descriptive statistics also indicate that the majority of individuals ranged from slightly proficient to highly proficient on the tasks that they used most frequently, i.e. email, Internet, Word-processing, Excel, PowerPoint, data analysis and manipulation and entertainment.

TABLE 3

Frequencies of general computer task usage

Computer task	Percentage of sample using the task (percentage)	Time spent on each task per week (percentage of sample using the task)					Proficiency on each task (percentage of sample using the task)				
		1-5	6-10	10-15	16-20	20+	Highly Unproficient	Unproficient	Slightly proficient	Proficient	Highly proficient
Internet	98.65	42.59%	21.76%	8.80%	5.55%	21.30%	1.38%	2.75%	19.26%	39.91%	36.70%
Email	99.55	17.35%	20.55%	11.41%	9.59%	41.10%	0.00%	2.74%	8.68%	42.46%	46.12%
Mobile email client	32.29	56.95%	16.66%	18.06%	1.39%	6.94%	0.00%	6.94%	20.84%	41.65%	30.57%
Voice Over Internet Protocol	20.63	56.82%	24.99%	6.84%	9.07%	2.28%	4.36%	6.54%	28.25%	30.43%	30.43%
Entertainment	59.94	59.40%	18.79%	9.77%	6.02%	6.02%	0.00%	4.51%	30.83%	29.32%	35.34%
Word-processing	86.55	32.10%	20.53%	19.47%	12.63%	15.26%	1.05%	3.14%	18.84%	37.17%	39.79%
Excel	85.20	31.05%	21.58%	16.31%	16.31%	14.74%	1.06%	4.24%	29.62%	36.50%	28.57%
PowerPoint	70.85	63.69%	18.47%	10.18%	5.74%	1.92%	1.94%	12.26%	26.45%	36.77%	22.58%
Data analysis and manipulation	59.19	40.77%	20.00%	12.30%	6.93%	20.00%	58.74%	9.16%	30.64%	32.06%	28.24%
Computer programming	12.56	55.57%	18.50%	14.78%	0.00%	11.15%	10.75%	7.17%	35.67%	32.17%	14.25%
Editing photos, videos or audio	44.39	80.61%	10.19%	4.07%	3.07%	2.05%	3.01%	20.00%	37.99%	21.00%	17.99%
Social networking websites	56.05	56.10%	20.33%	13.82%	4.06%	5.69%	0.82%	8.94%	29.26%	28.46%	32.52%

TABLE 4

Frequency of computer task use for one's job

Computer task	Frequency of computer task use for job (percentage)		
	Never	Seldom	Frequently
Internet	4.04	27.80	67.71
Email	.45	2.24	97.31
Mobile email client	70.40	19.73	9.42
Voice Over Internet Protocol (VOIP)	83.41	9.87	5.83
Entertainment	46.64	38.12	14.80
Word-processing	13.00	29.15	57.40
Excel	11.66	25.56	62.78
PowerPoint	24.66	45.74	29.15
Data analysis and manipulation	25.87	29.60	34.53
Computer programming	80.72	13.45	4.93
Editing photos, videos or audio	59.19	31.84	8.97
Social networking websites	55.16	28.70	16.14

Based upon the work-specific question in the biographical questionnaire, it would appear that email (97.31%) and Internet (67.71%) were the computer tasks that were most frequently used for work purposes by the sample. This was closely followed by Excel (62.78%) and word-processing (62.78%). A large proportion of the sample cited Voice Over Internet Protocol (83.41%), computer programming (80.72%) and mobile email clients (70.40%) as being computer tasks that they never used for work purposes (see Table 4).

An interesting finding to come out of the descriptive statistics for the work-specific question in the biographical questionnaire, related to data analysis and manipulation. It appeared that there was a relatively equal distribution between individuals who never used the task (25.87%), those that seldomly used the task (29.60%) and those that frequently used the task (34.53%).

Internal Reliability

The internal consistency of the items in the study was assessed using Cronbach's Alpha (see Table 3). An alpha value of approximately 0.7 and above indicates a reliable measure. The scales (computer anxiety, extraversion, neuroticism, job satisfaction and intention to leave) were all shown to be reliable. Openness to experience fell below 0.7 and thus was not considered to be a highly reliable scale.

TABLE 5

Summary of reliability findings for the Computer Anxiety, Personality and Organisational Effectiveness Survey

Factor	Description	Reliability
Computer Anxiety	20 Items	.93
Extraversion	8 Items	.81
Neuroticism	8 Items	.76
Openness	10 Items	.59
Job Satisfaction	16 Items	.93
Intention to Leave	3 Items	.85

TABLE 6

Summary of means and standard deviations for main variables in the study

Variable	Organisation 1	Organisation 2	Organisation 3	Total Sample
Computer Anxiety	1.73 (.67)	2.12 (.82)	1.96 (.85)	2.02 (.82)
Extraversion	3.74 (.75)	3.54 (.73)	3.47 (.77)	3.55 (.75)
Neuroticism	2.68 (.66)	2.56 (.72)	2.48 (.7)	2.55 (.7)
Openness to Experience	3.8 (.51)	3.68 (.49)	3.68 (.49)	3.7 (.49)
Job Satisfaction	5.49 (1.00)	4.67 (1.26)	4.33 (1.28)	4.68 (1.28)
Intention to Leave	2.54 (1.3)	2.65 (1.42)	3.78 (1.37)	2.99 (1.48)

Please note: Values in brackets represent standard deviations

Correlation Coefficients

Pearson product-moment correlation coefficients were used to measure the direction and strength of the relationships between the variables in the study at hand.

They were used to address the first three research questions Q1, Q2 and Q3.

Interesting trends arising in the correlation coefficients: (see Table7).

There was a weak negative relationship between computer anxiety and computer usage. There was a weak positive relationship between computer use and extraversion. Furthermore, there was a weak positive relationship established between openness to experience and computer usage. There were weak to moderate relationships established between all three of the personality dimensions used in the study at hand. There was a strong negative relationship between job satisfaction and intention to leave.

TABLE 7

Pearson product-moment correlation coefficients

	Computer Anxiety	Computer Use	Extraversion	Neuroticism	Openness	Job Satisfaction	Intention to Leave
Computer Anxiety	1.00						
Computer Use	-.19* *.004*	1.00					
Extraversion	-.02 *.743*	.18* *.006*	1.00				
Neuroticism	.15* *.026*	-.04 *.531*	-.34* *<.001*	1.00			
Openness	-.14* *.042*	.23* <.001	.49* *<.001*	-.26* *<.001*	1.00		
Job Satisfaction	.02 *.742*	.01 *.927*	-.09 *.184*	-.19* *.005*	.07 *.319*	1.00	
Intention to Leave	-.18* *.006*	.12 *.087*	.06 *.393*	.15* *.030*	.08 *.219*	-.52* *<.001*	1.00

* Correlation coefficients significant at the .05 level of significance

The relationship between computer anxiety and the organisational effectiveness variables.

There was no significant relationship established between computer anxiety and job satisfaction. There was a weak negative relationship established between computer anxiety and intention to leave.

The relationship between computer anxiety and personality.

There was no significant relationship established between computer anxiety and extraversion in the sample at hand. There was a weak positive relationship established between computer anxiety and neuroticism, whereas there was a weak negative relationship between computer anxiety and openness to experience.

The relationship between personality and the organisational effectiveness variables

There was no significant relationship between the personality dimension extraversion and either job satisfaction or intention to leave. There was a weak negative relationship established between neuroticism and job satisfaction, whereas there was a weak positive relationship established between neuroticism and intention to leave. Finally, there were no significant relationships between the personality dimension openness to experience and either job satisfaction or intention to leave.

Moderated Multiple Regression

Moderated multiple regression was used to measure the relationship between computer anxiety and the organisational effectiveness variables whilst taking into account the effect of personality (the moderating variable). This was used to address the fourth research question (Q4).

Table 8

Model 1 - The Relationship between Computer Anxiety, Extraversion and Intention to Leave

	Model 1		Model 2	
	Std. Reg. Coeff.	Sig	Std. Reg. Coeff.	Sig
Computer Anxiety	-.178 *	t(1) = -2.68	.149	t(1) = .44
Extraversion	.054	t(1) = .81	.207	t(1) = 1.23
Computer Anxiety x Extraversion			-.364	t(1) = -.99
R^2	3.50%		4%	
ΔR^2			.40%	

* Significant at the .05 level of significance

There was a significant negative main effect on the computer anxiety variable. However, there was no significant main effect on the personality variable extraversion.

Furthermore, there was no interaction effect between computer anxiety and extraversion on intention to leave.

Table 9

Model 2 – The Relationship between Computer Anxiety, Neuroticism and Intention to Leave

	Model 1		Model 2	
	Std. Reg. Coeff.	Sig	Std. Reg. Coeff.	Sig
Computer Anxiety	-.206 *	t(1) = -3.10	-.235	t(1) = -.80
Neuroticism	.177*	t(1) = 2.66	.159	t(1) = .86
Computer Anxiety x Neuroticism			.037	t(1) = .10
R^2	6.30%		6.30%	
ΔR^2			0%	

* Significant at the .05 level of significance

There was a significant negative main effect on the computer anxiety variable and a significant positive main effect on neuroticism. However, there was no significant interaction effect between computer anxiety and neuroticism on intention to leave.

Table 10

Model 3 – The Relationship between Computer Anxiety, Openness to Experience and Intention to Leave

	Model 1		Model 2	
	Std. Reg. Coeff.	Sig	Std. Reg. Coeff.	Sig
Computer Anxiety	-.171 *	t(1) = -2.55	.446	t(1) = .98
Openness	.06	t(1) = .89	.271	t(1) = 1.61
Computer Anxiety x Openness			-.631	t(1) = -1.37
R^2	3.60%		4.40%	
ΔR^2			.80%	

* Significant at the .05 level of significance

There was a negative significant main effect on computer anxiety. However, there was no significant main effect on openness to experience. Furthermore, there was no significant interaction effect between computer anxiety and openness to experience on intention to leave.

Table 11

Model 4 – The Relationship between Computer Anxiety, Extraversion and Job Satisfaction

	Model 1		Model 2	
	Std. Reg. Coeff.	Sig	Std. Reg. Coeff.	Sig
Computer Anxiety	.016	t(1) = .23	.210	t(1) = .62
Extraversion	.09	t(1) = 1.34	.181	t(1) = 1.06
Computer Anxiety x Extraversion			-.217	t(1) = -.58
R^2	.80%		1.00%	
ΔR^2			.20%	

There were no significant main effects on either the computer anxiety variable or extraversion. Furthermore, there was no significant interaction effect between computer anxiety and extraversion on job satisfaction.

Table 12

Model 5 – The Relationship between Computer Anxiety, Neuroticism to Experience and Job Satisfaction

	Model 1		Model 2	
	Std. Reg. Coeff.	Sig	Std. Reg. Coeff.	Sig
Computer Anxiety	.042	t(1) = .63	.200	t(1) = .67
Neuroticism	-.194*	t(1) = -2.87	-.100	t(1) = 1.06
Computer Anxiety x Neuroticism			-.198	t(1) = -.54
R^2	3.70%		3.80%	
ΔR^2			.10%	

* Significant at the .05 level of significance

There were no significant main effects on the computer anxiety variable. There was a significant negative effect of neuroticism. However, there was no significant interaction effect between computer anxiety and neuroticism on job satisfaction.

Table 13

Model 6 – The Relationship between Computer Anxiety, Openness to Experience and Job Satisfaction

	Model 1		Model 2	
	Std. Reg. Coeff.	Sig	Std. Reg. Coeff.	Sig
Computer Anxiety	.023	t(1) = .34	.243	t(1) = .52
Openness	.071	t(1) = 1.03	.146	t(1) = .85
Computer Anxiety x Openness			-.224	t(1) = -.48
R^2	.50%		.60%	
ΔR^2			.10%	

There were no significant main effects on either the computer anxiety variable or openness to experience. Furthermore, there was no significant interaction effect between computer anxiety and openness on job satisfaction

Discussion:

The Nature of the Sample's Computer Usage

Based upon the general computer usage section of the biographical questionnaire, it appeared that the computer tasks, Internet and email were the most commonly used tasks with 98.65% and 99.55% of the sample using each task respectively (see Table 4). Word-processing (86.55%), Excel (85.20%) and Powerpoint (70.85), data analysis and manipulation (59.19%) and entertainment (59.94%) and social networking websites (56.05%) also appeared to be largely used by the sample. With the exception of data analysis and manipulation, the other computer tasks are considered to be relatively simple computer tasks.

Computer programming and Voice Over Internet Protocol (VOIP) were the least used computer tasks with only 12.56% and 20.63% of the sample using each task for general purposes respectively (see Table 3). The result for computer programming is not unexpected, as computer programming is a highly complex task that would not commonly be used by the general computer user. It is generally a task that would only be performed by information technology professionals. However, it does seem somewhat strange that only 20.63% of the sample used Voice Over Internet Protocol (VOIP). A plausible reason to explain this result is that individuals may not have known what VOIP actually meant, i.e. they never knew that the programs that they used for face to face conferencing were in fact VOIP programs.

The descriptive statistics for general computer task usage indicated that on average the sample spent more time using email than any other task, approximately 20+ hours per week (see Table 3). In explaining this result, it would be fair to say that in the modern era, email has become one of the fastest and most convenient forms of communication both in the workplace and for purposes of general communication.

Furthermore, the descriptive statistics also indicated that the majority of individuals ranged from slightly proficient to highly proficient on the tasks that they used most frequently, i.e. email, Internet, word-processing, Excel, PowerPoint, data analysis and manipulation, and entertainment. It can be argued that the more one uses a particular computer task, the more proficient they will become in using it.

Based upon the work-specific question in the biographical questionnaire which asked the sample how frequently they used various computer tasks, it appeared that again email (97.31%) and Internet (67.71%) were the most frequently used computer tasks used for work purposes. This was closely followed by Excel (62.78%) and word-processing (62.78%). All these computer tasks are considered to be somewhat simple everyday computer tasks that are evidently becoming entrenched in the way in which people perform their jobs in the modern-day work environment.

A large proportion of the sample cited Voice Over Internet Protocol (83.41%), computer programming (80.72%) and mobile email clients (70.40%) as being computer tasks that they never used for work purposes (see Table 4). As stated previously, computer programming is somewhat of a specialist computer task that is not generally performed by the general work population, unless they are specifically employed in an information technology development role. It did however seem strange that the sample did not use their mobile phones to check their emails, as it would seem to be a convenient means to do so when one does not have immediate access to a computer.

An interesting finding to come out of the descriptive statistics for the work-specific question in the biographical questionnaire, related to data analysis and manipulation. Data analysis and manipulation is considered to be an intermediate to advanced computer task, which generally requires extensive training. It appeared that there was a relatively equal distribution between individuals who never used the task (25.87%), those that seldomly used the task (29.60%) and those that frequently used the task (34.53%). In taking into

account individuals that seldomly and frequently used the task, it is evident that data manipulation was a task that was largely used by the sample at hand (64.13%). This finding is not really surprising due to the fact that the sample was comprised of individuals from a bank, individuals from a large digital broadcasting company and finally, individuals from a large data management organisation. All three of these organisations would require a large proportion of their staff to use statistics of some form or another within the scope of their jobs respectively.

It is important to note that there was a weak negative relationship established between computer anxiety and computer usage. Hence as computer usage increases, computer anxiety decreases and vice versa. In other words, the more an individual uses computers, the less likely they are to experience computer anxiety. Based upon a general understanding of computer anxiety and computer usage as being a variable that is inherent to one experiencing anxiety, it is evident that this finding was sensible within the scope of the current research.

The relationship between computer anxiety and the organisational effectiveness variables.

Participants from three different formal sector organisations of the South African economy were examined to inspect the relationship between computer anxiety and job satisfaction and intention to leave. Thus, the first research question was put forwards as follows:

RESEARCH QUESTION 1 (Q1): Is there a relationship between computer anxiety and organisational effectiveness?

It is important to note that there was a strong negative relationship established between job satisfaction and intention to leave. This finding is consistent with previous empirical findings (Hellman, 1997; Freund, 2005; Riley, 2006; Duraisingham, Pidd & Roche, 2009; Hopper, 2009

Job satisfaction.

Based upon the statistical findings, it would appear that there was no significant relationship established between computer anxiety and job satisfaction in the research at hand.

Intention to leave.

The statistical analyses carried out in the research at hand indicate that there was a weak negative relationship established between computer anxiety and intention to leave.

As stated previously in this research paper, there was a distinct dearth of empirical research explaining the relationship between these two variables. As such the following research served the purpose of filling a gap in the literature. However, whilst there does appear to be a relationship between the two variables in the research at hand, according to one's understanding that computer anxiety is something that can be seen in a negative light, it was initially postulated that it would be positively related to intention to leave. A positive relationship in this context would denote that as computer anxiety increases, so would one's intention to leave their job. Thus, the more computer anxiety an individual has, the more likely they are to harbour intentions to leave their job. However, it would appear that the relationship that has been found here indicates the opposite, that being that as computer anxiety increases, intention to leave decreases and vice versa. Hence, the more computer anxiety an individual possesses, the greater their intention to stay in their job.

At face value, it seemed somewhat strange that the direction of the relationship would be negative in nature. After a thorough examination of both the statistical assumptions as well as the potential extraneous variables in the data set, there appeared to be no statistical evidence to explain the direction of this relationship.

In applying Cox and McKay's Transactional Model of stress to the case at hand, an individual is likely to experience computer anxiety as a result of an imbalance between their perception of the demand that is implicit in using computers and their perceived ability to deal with such a demand (Cox, 1978). As a result, a person who experiences computer anxiety is likely to make various physiological as well as cognitive and behavioural changes as a means to cope with stress (Cox, 1978). An appraisal of these particular coping techniques will result in various personal and organisational outcomes (job satisfaction and intention to leave in the case at hand).

Based upon an understanding of the stress-outcome response which underlies this particular model of stress, it can be argued within the scope of this model that an individual who appraises the above mentioned interaction as being stressful, will experience negative outcomes (intention to leave) due to a series of appraisals that occur throughout the stress cycle. However, in the research at hand this was not the case and as such, it would appear that this relationship does not fit into Cox and McKay's Transactional Model of Stress.

Based upon the statistical results and the above mentioned argument regarding the Transactional Model of Stress, it was necessary to draw upon plausible rival explanations to explain the result at hand.

It can be argued that the most plausible explanation as to why this result was found, is that some unknown extraneous variable may have influenced the relationship at hand. According to Sullivan (2009) an extraneous variable can be defined as being "a third variable, which may contribute to the explanation of the dependent variable through its effect on the independent variable" (p. 195).

The current study was conducted in mid-2010, a time in which many organisations both internationally and in South Africa alike, were starting to recover from the severe financial crisis that occurred towards the end of 2008

and into 2009. Whilst this is not a definite contributing factor, it is possible that job insecurity made salient by the financial crisis, could have had an impact on the way in which individuals appraised their jobs. This appraisal in turn could have influenced the results in the study at hand. This can be explained by saying that an individual who experiences computer anxiety within the scope of their job, may be unsure as to whether they would be able to find another job elsewhere and thus would stay in their job despite the fact that they are experiencing anxiety.

Another related factor that may also come into play is that individuals who are experiencing computer anxiety within the scope of their current job are more than likely going to experience the same level or a greater level of anxiety in a subsequent job. This is largely due to the fact that computers and other technology have become incorporated into every aspect of work to a greater or lesser degree (Gallivan, 2003). An individual experiencing computer anxiety within their current job may envision that a job at another organisation may require them to use computers to an even greater degree than their current job. As such, they may see their current job as being more manageable and more predictable than another job and thus will stay regardless of their current level of computer anxiety.

Another important consideration that should be brought to light in the case at hand, relates to the actual strength of the relationship between computer anxiety and intention to leave, which in general is quite weak. The impact of extraneous variables on weak relationships is likely to cause the direction of the relationship to change as only a small change is necessary to alter the relationship. Thus, the direction of the relationship between computer anxiety and intention to leave may have been more easily effected by a potential extraneous variable due to the fact that the relationship between the two variables was in fact weak.

Finally, in answering the research question at hand, it is clearly evident from what has been discussed above, that there is in fact a weak relationship

between computer anxiety and intention to leave. However at face value, it is the inverse to what was expected. Furthermore, it is apparent that the relationship does not fit into Cox and McKay's Transactional model of stress.

The relationship between computer anxiety and personality.

The second research question examines the relationship between computer anxiety and three of the 'Big Five' dimensions of personality, that being; extraversion, neuroticism and openness. The question was put forward as follows.

RESEARCH QUESTION 2 (Q2): Is there a relationship between computer anxiety and personality?

In the study at hand, there was no significant relationship established between computer anxiety and the personality dimension extraversion.
There was however a weak positive relationship established between computer anxiety and neuroticism. The previous empirical research discussed above in the literature review also seems to suggest the existence of a weak positive relationship between computer anxiety and neuroticism (Anthony et al., 2000; Korukonda, 2005). A positive relationship in this context means that as neuroticism increases, so does computer anxiety. Thus, the more neurotic a person is, the more likely it is that they will experience computer-anxiety. In light of this, it is apparent that this particular statistical finding is in line with previous empirical findings.

A weak negative relationship was also established between computer anxiety and openness to experience. Previous empirical research also seems to suggest the existence of a weak to moderate negative relationship between these two variables (Anthony et al., 2000; Korukonda, 2005). A negative relationship in this particular context indicates that as openness to experience scores increase, computer anxiety scores will decrease and vice versa. Thus, the more open a person is to experience, the less likely they will experience

computer anxiety. In light of this, it is evident that this statistical finding is in fact in line with the findings from previous empirical research.

It is interesting to note that there were moderate significant relationships between all three of the personality dimensions used in the study at hand. These weak to moderate relationships are consistent with other studies on the 'Big Five Inventory' (John & Srivastava, 1999; Worrell & Cross, 2004).

In placing the above statistical findings within the framework of the Transactional model of Stress discussed above, it is apparent that personality as an individual difference variable first enters the model at stage 2 of the stress cycle (Cox, 1978). This is inherent in the fact that personality is likely to affect how an individual cognitively appraises the perceived demand within the environment and their perceived capability to cope with the environmental factor (Cox, 1978).

With regards to the neuroticism dimension, it would appear that individuals who are neurotic are likely to appraise many situations as being negative, rather than positive due to their "essentially negative nature" (Judge et al., 2002, p. 531). As such, it can be argued that a neurotic individual is likely to appraise demands in their environment and their ability to deal with such demands in a negative light. As such, they are likely to experience stress as the result of the imbalance between the two factors (Cox, 1978). In the case at hand, this imbalance results in the individual experiencing computer anxiety.

With regards to the openness to experience dimension, it would appear that an individual who is open to experience has a tendency to "seek novelty as opposed to finding comfort in the known and familiar" (Korukonda, 2005, p. 315). This is emphasized in the fact that there was a significant positive relationship established between computer use (a demographic variable in the study) and openness to experience (see Table 7).

In placing the personality dimension into the model at hand, it would appear that when an individual who is high on the openness to experience dimension, is confronted with an environmental demand, their perception of the demand is likely to correspond with their perceived capability to handle it. This is due to the fact that they will appraise it as being a new and exciting challenge rather than a source of adversity. Thus, they are less likely to experience computer anxiety as a result of the imbalance between the two factors.

In conclusion, based upon the statistical findings and the theoretical framework of Cox and McKay's Transactional model, it is apparent that there is a relationship between two of the three dimensions of personality and computer anxiety, thus this research question is partially confirmed.

The relationship between personality and organisational effectiveness.

The third research question examines the relationship between the personality dimensions; extraversion, neuroticism and openness to experience and the two organisational effectiveness variables; job satisfaction and intention to leave. The research question was put forwards as follows.

RESEARCH QUESTION 3 (Q3): Is there a relationship between personality and organisational effectiveness?

Job Satisfaction.

In the study at hand, the statistical findings indicate that there was no relationship established between either extraversion and job satisfaction or openness to experience and job satisfaction.

However, there was a weak negative relationship established between neuroticism and job satisfaction. Previous empirical research also seems to suggest the existence of a negative relationship between the two variables

(Tokar & Subich, 1997; Judge et al., 2002). A negative relationship in this context indicates that as neuroticism scores increase, job satisfaction scores decrease and vice versa. Thus, the more neurotic an individual is, the more likely they will be dissatisfied with their job. This can also be stated in the inverse, in that the less neurotic an individual is the more they are likely to be satisfied with their job. In light of this, it is clearly evident that the findings in the research at hand regarding the relationship between neuroticism and job satisfaction are in fact in line with previous empirical findings.

Intention to leave.

Much like in the case of job satisfaction above, there was no relationship established between either extraversion or openness to experience and intention to leave.

There was however a weak positive relationship established between neuroticism and intention to leave. The three meta-analytic studies discussed in the literature review above, all concluded that a moderate negative relationship existed between emotional stability and intention to leave (Barrick & Mount, 1996; Salgado, 2002; Zimmerman, 2008). These studies all concluded that as emotional stability decreases, intention to leave increases. However, due to the fact that the present study was examining neuroticism, rather than its inverse (emotional stability) a high level of neuroticism (which is equivalent to low emotional stability) was thought to be positively related to intention to leave (Barrick & Mount, 1996; Salgado, 2002; Zimmerman, 2008). In light of this, it is apparent that the statistical findings of the research at hand are in fact in line with previous empirical findings. As such, it can be said that the more neurotic an individual is, the more likely it is that they will harbour intentions to leave their job.

In placing the above statistical findings within the framework of Cox and McKay's Transactional Model of stress, it is apparent that personality can also enter as an individual factor within the scope of the model at the coping stage

of the cycle (Cox & Ferguson, 1991). This is inherent in the fact that personality is a highly subjective construct and is likely to affect how an individual copes with the stress imbalance (Cox & Ferguson, 1991).

It is apparent that in the research at hand, there were significant relationships for both neuroticism and job satisfaction, as well as for neuroticism and intention to leave. As stated above, both of these two relationships are in fact in line with previous empirical findings. Individuals who are neurotic seem to have a negative nature and they are prone to experiencing negative emotions, such as “insecurity, anxiety and nervousness” when faced with stress (Korukonda, 2005, p. 314). Furthermore, they have the tendency to use emotion-focused coping strategies, rather than problem-focused coping strategies (Bakker et al., 2006). As such, their coping strategy will be driven by an attempt to mitigate the negative feelings associated with experiencing computer anxiety, rather than find a means to solve the problem. Steptoe (1991) indicate that emotion focused coping strategies can be split into behavioural and cognitive strategies. Emotion-focused behavioural strategies include strategies such as; information avoidance and social support, whereas emotion-focused cognitive strategies include strategies, such as; repressive coping responses and denial etc (Steptoe, 1991).

Cox (1978) indicates that the way in which an individual evaluates the effectiveness of these various coping techniques, will lead to various personal and organisational outcomes in the fourth stage of the stress cycle. Hence in the case at hand, the individual after appraising their coping techniques as not being sufficient enough to mitigate their computer anxiety, is likely to experience a decreased level of job satisfaction and an increased intention to leave one’s job (Cooper et al., 2001).

In concluding the discussion on research question 3, it is apparent that based upon the statistical findings of the research at hand and the theoretical framework of Cox and McKay’s Transactional model, there is a relationship

between one of the three dimensions of personality and the two organisational effectiveness variables, thus this research question is partially confirmed.

The moderating effect of personality on the relationship between computer anxiety and organisational effectiveness.

The fourth and final research question served the purpose of examining whether personality moderates the relationship between computer anxiety (the independent variable) and the two organisational effectiveness variables; job satisfaction and intention to leave (dependent variables). The question was put forward as follows.

RESEARCH QUESTION 4 (Q4): Does personality moderate the relationship between computer anxiety and organisational effectiveness?

The first three models examined the relationships between computer anxiety, personality and intention to leave. There was a significant negative main effect of computer anxiety on intention to leave in all three of these models.

The first model examined the relationships between computer anxiety, extraversion and intention to leave. There was no significant main effect on the personality variable extraversion. Furthermore, there was no interaction effect between computer anxiety and extraversion on intention to leave.

The second model examined the relationships between computer anxiety, neuroticism and intention to leave. There was a significant negative main effect on the computer anxiety variable and a significant positive main effect on neuroticism. However, there was no significant interaction effect between computer anxiety and neuroticism on intention to leave. The significant positive main effect of neuroticism on intention to leave indicates that the more neurotic an individual is, the more likely it is that they will intend to leave their job.

The third model examined the relationships between computer anxiety, openness to experience and intention to leave. There was no significant main effect on openness to experience. Furthermore, there was no significant interaction effect between computer anxiety and openness to experience on intention to leave.

The second three models examined the relationships between computer anxiety, personality and job satisfaction.

The fourth model examined the relationships between computer anxiety, extraversion and job satisfaction. There were no significant main effects on either the computer anxiety variable or extraversion. Furthermore, there was no significant interaction effect between computer anxiety and extraversion on job satisfaction.

The fifth model examined the relationships between computer anxiety, neuroticism and job satisfaction. There were no significant main effects on the computer anxiety variable. However, there was a significant negative effect of neuroticism. Furthermore, there was no significant interaction effect between computer anxiety and neuroticism on job satisfaction. The significant main effect of neuroticism on job satisfaction indicates that the more neurotic an individual is, the lower their job satisfaction will be and vice versa.

Finally, the sixth model examined the relationships between computer anxiety, openness to experience and job satisfaction. There were no significant main effects on either the computer anxiety variable or openness to experience. Furthermore, there was no significant interaction effect between computer anxiety and openness on job satisfaction

It is apparent that the statistical results from the moderated multiple regression indicate that the three personality dimensions, did not moderate the relationships between computer anxiety and job satisfaction and between

computer anxiety and intention to leave in any of the six regression models. Hence, in the research at hand, personality does not moderate the relationships between computer anxiety and the organisational effectiveness variables as was initially postulated.

In attempting to make sense of this result, it is important to make mention of the fact that the size of the sample used in the research at hand (223 individuals from three organisations), whilst having been large enough to perform moderated multiple regression, had an impact on the power of the moderation analysis. This is due to the fact that in moderated multiple regression, moderated effects can be quite small and as such, a large sample is required in order to detect these effects (Aguinis, 1995). Thus, in the case at hand, a larger sample size would have increased the power of the moderation test, thereby increasing the likelihood of detecting moderation effects.

In concluding the discussion on research question 4, it is evident that personality does not moderate the relationship between computer anxiety and the organisational effectiveness variables. The results do however indicate the existence of a number of main effects present between the independent variable (computer anxiety) and the dependent variable (job satisfaction and intention to leave) as well as between the moderator variable (personality) and the dependent variables in the study. All the main effects discussed above are consistent with the correlation analysis discussed in research question's 1, 2 and 3.

Furthermore, it can be stated within the context of Cox and McKay's Transactional stress model, that whilst personality is an individual factor which appears to be inherent within the model, it does not appear to moderate the overall stress-outcome relationship in the research at hand.

Conclusion:

As has been pointed out above, technology has become a fundamental part of modern day society and organisations alike. As such, one needs to understand how the use of computers and other new technologies can impact upon an individual.

The purpose of this study was to expand on the scope of previous research as well as to fill the gaps in the literature by examining the relationship between computer anxiety, personality and organisational effectiveness. In particular, it examined computer anxiety as a component of technostress, three of the Big Five dimensions of personality and finally two organisational effectiveness variables, that being; job satisfaction and intention to leave. These variables were placed within the theoretical context of Cox and McKay's Transactional model of stress as a means to explain the relationships between them.

The research firstly concluded that computer anxiety was inversely related to one of the two organisational effectiveness variables. Secondly, it concluded that there was a relationship between two of the three dimensions of personality (neuroticism and openness to experience) and computer anxiety. Thirdly, it concluded that there was a relationship between one of the three dimensions of personality and the two organisational effectiveness variables (job satisfaction and intention to leave). Finally, the research concluded that in the sample at hand, none of the three personality dimensions moderated the relationships between computer anxiety and job satisfaction and computer anxiety and intention to leave. Thus, the statistical findings provide partial confirmation for three of the four research questions examined in the study at hand.

Theoretical Implications

Cox and McKay's Transactional stress model was used as a framework to explain a number of different statistical relationships in the research at hand. Within the context of the framework, it was possible to explain the research findings of research question two and research questions three, i.e. that there was a relationship between computer anxiety and personality (neuroticism and openness to experience) and between personality (neuroticism) and the two organisational effectiveness variables (job satisfaction and intention to leave). However, the model was not successful in explaining research question one, due to the presence of an inverse relationship between the independent variable and dependent variable, i.e. that computer anxiety and intention to leave were negatively related to one another, rather than positively related. Furthermore, the model could not be applied to research question four, due to the fact that the research at hand indicated that none of the three personality dimensions moderated the relationship between computer anxiety and the organisational effectiveness variables.

Practical Implications

The implications of the results of the current research can be summarised as follows; Whilst the current research found the existence of a direct relationship between computer anxiety and intention to leave, two variables that had not been studied together before, the relationship was the inverse of what was expected at face value and as such, one cannot draw a finite conclusion about the true relationship between the two variables due to the possible existence of an unknown extraneous variable that seemingly affected the direction of the relationship. It is also evident that whilst there were in fact only weak relationships established between the computer anxiety and two of the dimensions of personality and between the personality dimension neuroticism and both of the organisational effectiveness variables, the direction of the results are consistent with previous research findings on personality and as such, serve the purpose of providing further support for the existence of the

various relationships discussed above. Finally, whilst there appeared to be relationships between computer anxiety and the dimensions of personality and between the dimensions and the outcome variables, the research at hand was not able to establish a statistically significant moderating relationship between the variables computer anxiety, personality and the two organisational effectiveness variables. Consequently based upon the research at hand, one cannot draw causal conclusions about personality as a moderator in the stress-outcome relationship.

Limitations

After completion of the research, there appear to be a number of limitations within the scope of the study.

A limitation of the study at hand relates to the nature and size of the sample used. The sample comprised of 223 individuals from three South African organisations. The issue arises over the fact that due to the difficultly inherent in finding organisations to participate in the study, the researcher had to settle for three organisations, all of which had a high technological focus. The first organisation was a private sector banking organisation, the second a large digital broadcasting company and the third was an organisation specialising in data management. The fact that the organisations had such a great technical focus could possibly explain the lack of computer anxiety experienced by a large proportion of individuals in the sample. This is evident in the fact that the majority of the individuals in the three of the organisations tended to report low levels of computer anxiety, with each organisation reporting a mean computer anxiety score of μ =1.73, μ =2.12 and μ =1.96 on the Computer Anxiety Rating Scale respectively (see Table 6). Furthermore, the mean computer anxiety score for the sample was μ = 2.02, on the Computer Anxiety Rating Scale (see Table 6). Such scores indicate that on average, individuals in the sample had answered that they had ‘a little’ computer anxiety on the Computer Anxiety Rating Scale. Responses on the scale ranged from ‘not at all’ to ‘very much’, i.e. ‘not at all’ which means that the individual has no

computer anxiety, whereas ‘very much’ means that they have extensive computer anxiety. Furthermore, it would appear that a very large proportion of individuals in the sample (86.30%) had received previous computer training and were aware of computer training programmes offered at their organisations (80.84%) (see Table 2).

A further limitation regarding the sample used in the research at hand relates to the size of the sample and the power of the moderation test. Whilst the researcher initially wished to attain a sample of 300 or more individuals, due to logistical and practical circumstances, only 223 individuals from three separate South African organisations were attained. The sample was sufficiently large enough to perform moderated multiple regression, however due to the sample being relatively small, the power of the moderation test was reduced.

Another possible reason that individuals tended to report low levels of computer anxiety may relate to the Computer Anxiety Rating Scale itself. The scale was created almost 20 years ago and asks questions, such as “using an automated bank teller machine (ATM)”, “resetting a digital clock after the electricity has been off” and “programming a microwave oven” (Rosen & Weil, 1992, p. 37). Whilst these may have been common causes of computer anxiety back in the late 1980’s and early 1990’s when the scale was created it can be argued that the individuals in the sample at hand who have a mean age of 33.13, have grown up in the computer age and as such, basic tasks such as these are inherent in one’s everyday life and are not considered to be anxiety causing (see Table 2). Thus, it can be argued that the CARS scale may not have been the most viable measure for assessing computer anxiety in the modern-day work environment.

The final limitation relates to the existence of predominantly weak relationships between the independent and dependent variables in the study. Due to social-desirability and the fear of the negative consequences associated with filling out a questionnaire, it is not uncommon in research for

individuals to under-report on variables that they consider to have a negative connotation (Arnold, Feldman & Purbhoo, 1985). In examining the responses on the completed questionnaires, it was evident that a number of the participants in the sample organisations tended to cross out their original answers on questions relating to their level of computer anxiety and intention to leave. This is indicative of the fact that individuals in the sample may have under-reported their true levels of computer anxiety and their intention to leave their job. It can be argued that these individuals may have felt that they would jeopardize their job in some way by being truthful, or that they would discredit their organisation.

Directions for future research

Future research directions are suggested in a number of different areas; (a) nature of the sample, (b) inclusion of the personality dimensions consciousness and agreeableness, (c) inclusion of the other two dimensions of technostress proposed by Rosen and Weil (1992).

In future, it is suggested that a larger sample comprised of a broader range of different organisations be included in the research. Different sample organisations would be beneficial to determine whether one would get alternative results to those found in the study at hand. Furthermore, in future, one should include the other two dimensions of personality which were excluded due to time and practical constraints (conscientiousness and agreeableness), in order to see if they will have any impact on the outcome of research. Finally, future researchers should also consider looking at the other two dimensions of technostress identified by Rosen and Weil (1992), that being; negative thoughts about computers and negative attitudes towards computers. In doing so, one will be able to get a broader understanding of technostress, rather than just one aspect of it.

Reference List

Aguinis, H. (1995). Statistical power problems with moderated multiple regression in management research. *Journal of Management*, *21*, 1141-1158.

Ahmad, U.N.U., Amin, S.M., & Ismail, W.K.W. (2009). The impact of technostress on organisational commitment among Malaysian academic libraries. *Singapore Journal of Library and Information Management*, *38*, 103-123.

Anthony, L.M., Clarke, M.C., & Anderson, S.J. (2000). Technophobia and personality subtypes in a sample of South African university students. *Computers in Human Behaviour*, *16*, 31-44.

Arnold, H.J., Feldman, D.C., & Purbhoo, M. (1985). The role of social-desirability response bias in turnover research. *The Academy of Management Journal*, *28*, 955-966.

Arvey, R.D., McCall, B.P., Bouchard Jr, T.J., Taubman, P., & Cavanaugh, M.A. (1994). Genetic influences on job satisfaction and work values. *Personality and Individual Differences*, *17,* 21-33.

Bakker, A.B., Van der Zee, K.I., Ledwig, K.A., & Dollard, M.F. (2006). The relationship between the 'Big-Five' personality factors and burnout: A study among volunteer counsellors. *The Journal of Social Psychology, 146,* 31-50.

Barrick, M.R., & Mount, M.K. (1996). Effects of impression management and self-deception on the predictive validity of personality constructs. *Journal of Applied Psychology, 3*, 261-272.

Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.

Bozionelos, N. (2001). The relationship of instrumental and expressive traits with computer anxiety. *Personality and Individual Differences*, *31*, 955-973.

Campbell, J. P. (1977). On the nature of organizational effectiveness. In P. S. Goodman, P.S & Pennings, J.M. (Eds*.), New Perspectives on Organizational Effectiveness* (pp. 13-55). California, U.S.A.: Jossey-Bass Publishers.

Ceyhan, E. (2006). Computer anxiety in teacher trainees in the framework of personality variables. *Computers in Human Behavior*, *22*, 207-220.

Cho, S., Johanson, M.M., & Guchait, P. (2009). Employees intent to leave: A comparison of determinants of intent to leave versus intent to stay. *International Journal of Hospitality Management*, *28*, 374-381.

Coomber, B., & Barriball, K.L. (2006). Impact of job satisfaction components on intent to leave and turnover for hospital-based nurses: A review of the research literature. *International Journal of Nursing Studies*, *44*, 297-314.

Cooper, C.L., P.J. Dewe., & O'Driscoll, M. (2001) *Stress and work organizations: A review and critique of theory, research and applications*. California: Sage.

Costa P.T., & McCrae R.R. (1992).*Revised NEO Personality Inventory (NEO PI-R) and the NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.

Cox, C.L.,& Ferguson, E. (1991). Individual differences, stress and coping. In C.L. Cooper & R. Payne (Eds.). *Personality and stress: Individual differences in the stress process*. Chichester, U.K.: John Wiley & Sons.

Cox, T. (1978). *Stress*. Macmillan Press: London.

Duraisingam, V., Pidd, K. & Roche, A.M. (2009). The impact of work stress and job satisfaction on turnover intentions: A study of Australian specialist alcohol and other drug workers. *Drugs: Education, Prevention and Policy*, *16*, 217–231.

Foulkrod, K.H., Field, C., & Brown, C.V.R. (2010). Trauma surgeon personality and job satisfaction**:** Results from a national survey. *American Surgeon*, *76*, 422-427.

Freund, A. (2005). Commitment and job satisfaction as predictors of turnover intentions among welfare workers. *Administration in Social Work*, *29*, 5-21.

Gallivan, M. (2003). Examining gender differences in IT professionals' perceptions of job stress in response to technological change. *Proceedings of the ACM SIGMIS Conference Philadelphia:* 10 – 23.

Hellman, C.M. (1997). Job satisfaction and intent to leave. *The Journal of Social Psychology*, *57*, 677-689.

Hopper, M.L. (2009). Communication satisfaction, job satisfaction, organisational commitment and intention to leave. Unpublished master's thesis. University of Waikato, New Zealand.

Howell, D.C. (2004). *Fundamental Statistics for the Behavioural Sciences (5th ed.).* United States of America: Thomson Brooks/Cole.

Janisse, J.J. (2002). An analysis of the information technology (IT) attitudes, cognitions, and anxieties of corporate leaders at the Phillips Plastics Corporation. Unpublished master's thesis. University of Wisconsin-Stout, United States of America.

Jex, S.M., & Gudanowski, D.M. (1992). Efficacy beliefs and work stress: An exploratory study*. Journal of Organizational Behavior*, *13*, 509-517.

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research (2nd ed.).* New York.: Guilford.

Judge, T.A., Heller, D., & Mount, M.K. (2002). Five-factor model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology*, *87*, 530-541.

Judge, T.A., Higgins, C.A., Thoresen, C.J., & Barrick, M.R. (1999). The Big Five personality traits, general mental ability, and career success across the life span. *Personnel Psychology*, *52*, 621-652.

Katz, Y.J., & Offir, B. (1991). The relationship between personality and computer related attitudes of Israeli teachers*, Education and Computing*, *7*, 249-252.

Kenny, D.A. (2009). *Moderation.* Retrieved March 31, 2010 from http://davidakenny.net/cm/moderation.html.

Korukonda, A.R. (2005). Personality, individual characteristics, and predisposition to technophobia: Some answers, questions and points to ponder about. *Information Sciences*, *170*, 309-328.

Lee, R.S (1970). Social attitudes and the computer revolution. *The Public Opinion Quarterly*, *34*, 1, 53-59

Lee, T.W., & Mowday, R.T. (1987). Voluntarily Leaving an Organization: An Empirical Investigation of Steers and Mowday's Model of Turnover. The Academy of Management Journal, 30, 721-743.

Lounsbury, J. W., Moffitt, L., Gibson, L.W., Drost, A.W., & Stevens, M. (2007). An investigation to job and career satisfaction of information technology professionals. *Journal of Information Technology*, *00*, 1-10.

Malim, T., Birch, A. Hayward, S., & Wadeley, A. (1998). *Introductory Psychology*. Palgrave Macmillian.

Mark, G.M. and Smith, A.P. (2008). Stress models: A review and suggested new direction. *Occupational health psychology: European perspectives on research, education, and practice*, *3*, 11-144.

Miller, H.A., Mire, S., & Kim, B. (2009). Predictors of job satisfaction among police officers: Does personality matter. *Journal of Criminal Justice*, *37*, 419-426.

O'Driscoll, M. P., & Beehr, T. A. (1994). Supervisor behaviours, role stressors and uncertainty as predictors of personal outcomes for subordinates. *Journal of Organizational Behavior, 15,* 141-155.

O'Driscoll, M.P., Randall, D.M. (1999). Perceived organizational support, satisfaction with rewards, and employee job involvement and organizational commitment. *Applied Psychology: An International Review*, *48*, 197-209.

Parayitam, S., Desai, K.J., Desai, M.S., & Eason, M.K. (2010). Computer attitude as a moderator in the relationship between computer anxiety, satisfaction and stress. *Computers in Human Behavior*, *26*, 345-352.

Rice. L., & Markey, P. M. (2009). The role of extraversion and neuroticism in influencing anxiety following computer-mediated interactions. *Personality and Individual Differences, 46,* 35-39.

Riley, D. (2006). Turnover intentions: The mediation effects of job satisfaction, affective commitment and continuance commitment. Unpublished master's thesis, University of Waikato, New Zealand.

Robbins, S.P. (1990). Organization Theory: Structure, Design, and Applications. Prentice-Hall Inc: United States of America.

Rosen, L.D., & Weil, M.M. (1992). *Measuring Technophobia. A manual for the administration and scoring of three instruments: Computer Anxiety Rating Scale (Form C), General Attitudes Toward Computers Scale (Form C) and Computer Thoughts Survey* (Form C). California: Computerphobia Reduction Program

Rothmann, S. (2008). Job satisfaction, occupational stress, burnout and work engagement as components of work-related wellbeing. *SA Journal of Industrial Psychology*, *34*, 11-16.

Salgado, J.F. (2002). The Big Five personality dimensions and counterproductive behaviours. *International Journal of Selection and Assessment*, *10*, 117-125.

Sami, L.K., & Pangannaiah, N.B. (2006) Technostress: A literature survey on the effect of information technology on library users. *Library Review*, *55*, 429-439.

Sheskin, D.J. (2004). *Handbook of Parametric and Nonparametric Statistical Procedures (3rd ed.)*. United States of America: Chapman & Hall/CRC.

Spector, P.E. (1997). *Job Satisfaction*. United States of America: Sage Publishers Ltd.

Spector, P.E., Dwyer, D.J., & Jex, S.M. Relation of job stressors to affective, health and performance outcomes: A comparison of multiple data sources. *Journal of Applied Psychology*, *73*, 11-19.

Steptoe, A. (1991). Psychological coping, individual differences and physiological stress responses. . In C.L. Cooper & R. Payne (Eds.). *Personality and stress: individual differences in the stress process*. Chichester, U.K.: John Wiley & Sons.

Sullivan, L.E. (2009). *The SAGE Glossary of the Social and Behavioral Sciences*. United States of America: Sage Publications Inc.

Timmerman, T.A. (2006). Predicting turnover with broad and narrow personality traits*. International Journal of Selection and Assessment*, *14*, 392-399.

Tokar, D.M., & Subich, L.M. (1997). Relative contributions of congruence and personality dimensions to job satisfaction. *Journal of Vocational Behavior*, *50*, 482-491.

Vogel, F.R. (2007). *Stress in the workplace: The phenomenon, some key correlates and problem solving approaches*. Unpublished doctoral thesis, University of Pretoria, Pretoria, South Africa.

Wang, K., Shu, Q., & Tu, Q. (2008). Technostress under different organizational environments: An empirical investigation. *Computers in Human Behavior*, *24*, 3002-3013.

Weil, M.M., & Rosen, L.D. (1997). *Coping with technology @work @home @play. United States of America:* John Wiley and Sons Inc.

Worrell, F.C., & Cross Jr, W.E. (2004). The reliability and validity of Big Five Inventory scores With African American college students. *Journal of Multicultural Counselling and Development, 32*, 18-32.

Zimmerman, R.D. (2008). Understanding the impact of personality traits on individual's turnover decisions: A meta-analytic path model. *Personnel Psychology*, *61*, 309-348.

Appendix A: Participant Information Letter



UNIVERSITY
OF THE
WITWATERSRAND,
JOHANNESBURG

School of Human and Community Development
Private Bag 3, Wits 2050,
Johannesburg, South Africa
Tel: (011) 717-4500
Fax: (011) 717-4559

Dear Sir/Madam,

My name is Warren Beder, and I am conducting research for the purposes of obtaining a Masters degree in Organisational Psychology at the University of the Witwatersrand. The aim of this study is to examine the impact of computer-related computer anxiety on organisational effectiveness whilst taking into account the moderating effect of personality. Computer anxiety is becoming more and more of a common feature in modern day society, thus it is necessary to understand its impact upon organisational effectiveness. I would like to invite you to take part in this study.

Participation in this research will involve completing the attached questionnaire. The questionnaire will take approximately 30-40 minutes to complete. Participants will be given a week long period in which to complete the questionnaire. Participation is voluntary, and no employee will be advantaged or disadvantaged in any way for choosing to complete or not complete the questionnaire. While questions are asked about your personal circumstances, no identifying information, such as your name or I.D. number, is asked for, and as such you will remain anonymous. Your completed questionnaire will not be seen by any person in this organisation at any time, and will only be processed by myself (the researcher). Your responses will

only be looked at in relation to all other responses. Feedback that will be given to the organisation will be in the form of group responses. A summary of the results of the study will be made available on the notice board of your Human Resource department. Furthermore, participants can request feedback directly from the researcher on completion of the study. There are no anticipated risks or benefits associated with participation in this study.

If you choose to participate in the study please complete the attached questionnaire as carefully and honestly as possible. Once you have answered the questions, place the questionnaire in the envelope provided and deposit it in the designated box. This will ensure that no one will have access to the completed questionnaires, and will ensure your complete confidentiality. Returning of the questionnaire will be considered consent to participate in the study.

Your participation in this study would be greatly appreciated. This research will contribute both to a larger body of knowledge on computer anxiety, personality and organisational effectiveness.

Kind Regards

Warren Beder

Email: warren.beder@gmail.com
Contact Telephone Number - (011) 717 4500

Appendix B: Letter requesting access to Organisation



UNIVERSITY
OF THE
WITWATERSRAND,
JOHANNESBURG

School of Human and Community Development
Private Bag 3, Wits 2050,
Johannesburg, South Africa
Tel: (011) 717-4500
Fax: (011) 717-4559

Dear Sir/Madam,

My name is Warren Beder, and I am conducting research for the purposes of obtaining a Masters degree in Organisational Psychology at the University of the Witwatersrand. The aim of this study is to examine the impact of computer anxiety on employee wellbeing whilst taking into account the moderating effect of personality. Computer Anxiety is becoming more and more of a common feature in modern day society, thus it is necessary to understand its impact upon organisational effectiveness. I would like to request permission to conduct my research at your organisation.

The research would require the distribution of a questionnaire to all individuals in an available department/division of your organisation. Participation is voluntary and no employee will be advantaged or disadvantaged in any way for choosing to complete or not complete the questionnaire. The questionnaire will take approximately 30-40 minutes to complete. Employees will be given a week long period to complete the questionnaire in their own personal time. The questionnaire is completely anonymous thus no identifying information, such as an employee's name or I.D. number is asked for. In order to protect the rights of both your organisation as well as your employees, the

completed questionnaire will not be seen by any person in your organisation at any time, and will only be processed by myself (the researcher). At no point will the name of your organisation be disclosed in the scope of my research. A summary of the results will be made available to your organisation on completion of the research. In order to protect the participants, results will only reflect group scores rather than individual scores. There are no anticipated risks or benefits associated with this study.
This research will contribute both to a larger body of knowledge on computer anxiety personality and organisational effectiveness.

Kind Regards

Warren Beder

Email: bederw@gmail.com
Contact Telephone Number for Researcher - 0795114226
Contact Telephone Number for Supervisor – (011) 717 4250

Appendix C: Computer Anxiety, Personality and Organisational Effectiveness Survey

Thank you for participating in this study. This questionnaire should take about 10-20 minutes to complete. Please read the following instructions before continuing with the survey.

Description: The purpose of this research is to examine the relationship between computer anxiety and organisational effectiveness, whilst taking into account the moderating effect of personality

Computer Anxiety can be understood as being the negative impact of technology on the attitudes, thoughts, behaviours, or body physiology of an individual (Weil and Rosen, 1997).

Benefits and Risks: Your participation in this study will help contribute to a greater understanding of the relationship between computer anxiety, personality and organisational effectiveness. There are no risks or benefits associated with this research.

Voluntary Participation: Your participation in this project is voluntary.

Confidentiality: All information will be recorded anonymously. ***No individual respondents will be identified, this is an anonymous questionnaire.***

Procedure: The instrument will be administered to employees by the researcher. Employees will be given a specified period in which to fill out the questionnaire. After completion, employees are asked to seal the questionnaire using the sticker provided and deposit it into the designated box.

Informed Consent: I have read the above description, including the nature and purpose of the study, the benefits, confidentiality statement, and the right to withdraw from the study at any time prior to the completion of this questionnaire. The researcher has answered my questions regarding the study, and I believe I understand what is involved. My participation indicates that I freely agree to participate in this study.

Please provide the following background information:

1. Age: _____
2. Sex: ☐ Male ☐ Female
3. Marital Status: ☐ Married ☐ Single ☐ Divorced
4. Years as member of the organisation: _____
5. Have you ever had any formal computer training? (Describe) _____
   _____
   _____
6. Does your organisation offer formal computer training? (Describe) _____
   _____
   _____

BIOGRAPHICAL QUESTIONAIRE:

The items in this questionnaire are related to one's use of computers. For each item, place a cross in the box that is most applicable to oneself.

1	Do you use the internet?

Yes | No

If yes, how many hours a week do you spend on this task?

1 to 5 | 6 to 10 | 10 to 15 | 16-20 | 20 +

How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)

1 | 2 | 3 | 4 | 5

2	Do you use email?

Yes | No

If yes, how many hours a week do you spend on this task?

1 to 5 | 6 to 10 | 10 to 15 | 16-20 | 20 +

How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)

1 | 2 | 3 | 4 | 5

3	Do you use an email client on your mobile phone?

Yes | No

If yes, how many hours a week do you spend on this task?

1 to 5 | 6 to 10 | 10 to 15 | 16-20 | 20 +

How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)

1 | 2 | 3 | 4 | 5

4	Do you use Skype or any other Voice Over Intenet Protocol (VOIP)

Yes | No

If yes, how many hours a week do you spend on this task?

1 to 5 | 6 to 10 | 10 to 15 | 16-20 | 20 +

How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)

1 | 2 | 3 | 4 | 5

5	Do you use your computer for entertainment purposes?

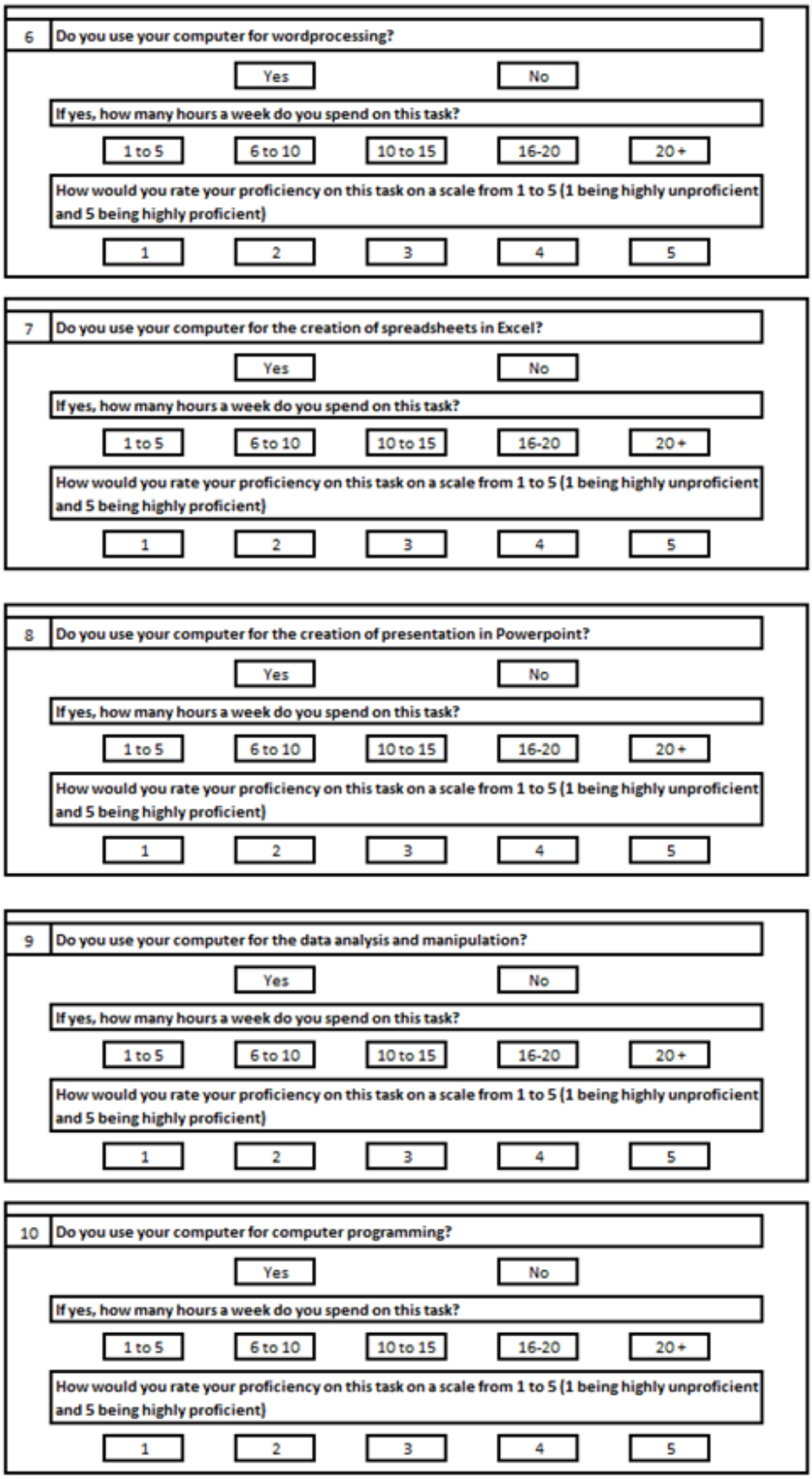
Yes | No

If yes, how many hours a week do you spend on this task?

1 to 5 | 6 to 10 | 10 to 15 | 16-20 | 20 +

How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)

1 | 2 | 3 | 4 | 5


6
Do you use your computer for wordprocessing?
Yes
No
If yes, how many hours a week do you spend on this task?
1 to 5
6 to 10
10 to 15
16-20
20+
How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)
1
2
3
4
5
7
Do you use your computer for the creation of spreadsheets in Excel?
Yes
No
If yes, how many hours a week do you spend on this task?
1 to 5
6 to 10
10 to 15
16-20
20+
How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)
1
2
3
4
5
8
Do you use your computer for the creation of presentation in Powerpoint?
Yes
No
If yes, how many hours a week do you spend on this task?
1 to 5
6 to 10
10 to 15
16-20
20+
How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)
1
2
3
4
5
9
Do you use your computer for the data analysis and manipulation?
Yes
No
If yes, how many hours a week do you spend on this task?
1 to 5
6 to 10
10 to 15
16-20
20+
How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)
1
2
3
4
5
10
Do you use your computer for computer programming?
Yes
No
If yes, how many hours a week do you spend on this task?
1 to 5
6 to 10
10 to 15
16-20
20+
How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)
1
2
3
4
5

11	Do you use your computer for editing photos, video or audio?									
		Yes				No				
	If yes, how many hours a week do you spend on this task?									
	1 to 5		6 to 10		10 to 15		16-20		20 +	
	How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)									
	1		2		3		4		5	

12	Do you use social networking websites?									
		Yes				No				
	If yes, how many hours a week do you spend on this task?									
	1 to 5		6 to 10		10 to 15		16-20		20 +	
	How would you rate your proficiency on this task on a scale from 1 to 5 (1 being highly unproficient and 5 being highly proficient)									
	1		2		3		4		5	

13	How often do you use the following tasks in the performance of your job?							
	a) The Internet		Never		Seldomly		Frequently	
	b) Email		Never		Seldomly		Frequently	
	c) Email Client on your cellphone		Never		Seldomly		Frequently	
	d) Skype/Voice Over IP		Never		Seldomly		Frequently	
	e) Entertainment		Never		Seldomly		Frequently	
	f) Word Processing		Never		Seldomly		Frequently	
	g) Creation of spreadsheets		Never		Seldomly		Frequently	
	h) Creation of Powerpoint slides		Never		Seldomly		Frequently	
	i) Data analysis/manipulation		Never		Seldomly		Frequently	
	j) Computer programming		Never		Seldomly		Frequently	
	k) Editing photos, video or audio		Never		Seldomly		Frequently	
	l) Social networking websites		Never		Seldomly		Frequently	

COMPUTER ANXIETY RATING SCALE:

The items in this questionnaire refer to things and experiences that may cause anxiety or apprehension. For each item, place a cross under the column that describes how anxious (nervous) each one would make you at this point in your life.

	COMPUTER ANXIETY RATING SCALE	Not at All	A Little	A Fair Amount	Much	Very Much
1	Thinking about taking a course in a computer language					
2	Taking a test using a computer scoring sheet					
3	Applying for a job that requires some computer training					
4	Sitting in front of a home computer					
5	Watching a movie about an intelligent computer					
6	Looking at a computer printout					
7	Getting "error messages" from the computer					
8	Using an automated bank teller machine (ATM)					
9	Visiting a computer centre/store					
10	Being unable to receive information because the "computer is down"					
11	Learning to write computer programs					
12	Thinking about buying a new PC					
13	Erasing or deleting material from a computer file					
14	Taking a class about the use of computers					
15	Re-setting a digital clock after the electricity has been off					
16	Learning computer terminology					
17	Reading a computer manual					
18	Watching someone work on a PC					
19	Programming a microwave oven					
20	Learning how a computer works					

THE BIG FIVE PERSONALITY INVENTORY

The items in this questionnaire refer to features of one's personality. For each item, place a cross under the column that is most applicable to oneself.

	THE BIG FIVE PERSONALITY INVENTORY (BFI)	Disagree Strongly	Disagree a Little	Neutral	Agree a Little	Agree Strongly
1	I am talkative					
2	I'm depressed/blue					
3	I am original and come up with new ideas					
4	I am reserved					
5	I am relaxed and handle stress well					
6	I am curious about many different things					
7	I'm full of energy					
8	I can be tense					
9	I am ingenious and a deep thinker					
10	I generate alot of enthusiasm					
11	I worry alot					
12	I have an active imagination					
13	I tend to be quiet					
14	I am emotionally stable and not easily upset					
15	I am inventive					
16	I have an assertive personality					
17	I can be moody					
18	I value artistic and aesthetic experiences					
19	I am sometimes shy and inhibited					
20	I remain calm in tense situations					
21	I prefer work that is routine					
22	I am outgoing and sociable					
23	I get nervous easily					
24	I like to reflect and play with ideas					
25	I have few artistic interests					
26	I am sophisticated in art, music and literature					

JOB SATISFACTION SCALE:

The items in this questionnaire refer to the satisfaction one experiences in their job. For each item, place a cross under the column that is most applicable to oneself.

	JOB SATISFACTION SCALE	Very Dissatisfied	Moderately Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Moderately Satisfied	Very Satisfied
1	Financial rewards (pay, other benefits)							
2	Job security							
3	My workload							
4	Opportunities for promotion							
5	Relationship with co-workers							
6	The way my boss handles his/her subordinates							
7	Physical working conditions							
8	Variety in my work							
9	The competence of my supervisor							
10	The amount of challenge in my job							
11	Support from others							
12	Opportunities to pursue my skills and abilities							
13	The praise I get from doing a good job							
14	The amount of freedom to decide how to do my work							
15	The way organisational policies are put into practice							
16	My job as a whole							

INTENTION TO LEAVE SCALE

The items in this questionnaire are related to one's intention to leave one's job. For each item, place a cross under the column that is most applicable to oneself.

	INTENTION TO LEAVE SCALE	Strongly Disagree	Rarely	Sometimes	Often	Very Often	All the time
1	Thoughts about quitting my job cross my mind						
2	I intend to look for a new job within the next 12 months						
3	It is likely that I will actively look for a new job outside this firm						