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An exploration of the relationship between emotions and self-reported productivity over time

Moranda Lam

A research project submitted in partial fulfilment of the requirements for the degree of MA by coursework and Research Report in the field of Industrial Psychology in the Faculty of Humanities, University of the Witwatersrand, Johannesburg.

15 February 2010

Declaration

I hereby declare that this research report/thesis is my own, unaided work. It is being submitted in partial fulfilment for the degree of Master of Arts by Coursework and Research Report in the Field of Industrial Psychology at the University of the Witwatersrand, Johannesburg. It has not been submitted before for the purpose of any other degree or examination at any other University

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15 February 2010

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Abstract

For many years, the importance of emotions has been underestimated in the workplace. This is because the workplace was believed to be a space that did not accommodate the expression of emotions. However, towards the end of the twentieth century, researchers became more interested in the role of emotions in the workplace, since it is said that people do not always work in an objective manner based on cold cognitive conditions. As a result, it has led to the development of various models and theories, one of which is the happy-productive worker hypothesis. The current study is based on this model. However, the approach to understanding this hypothesis in the current study is slightly different from how it has been traditionally assessed. The current study expanded the happiness construct to explore whether there is a relationship between arousal, pleasantness and self-reported productivity over time. Results from the current study were found to support the happy productive worker hypothesis, as a significant relationship was found between pleasantness and self-reported productivity. However, this relationship was only significant in the absence of the arousal dimension. This, therefore, indicates that arousal plays an important role in understanding emotions in relation to self-reported productivity in the workplace.

Furthermore, a repeated measures approach was used to observe within subject effects to assess for potential patterns. The relationship between emotions and self-reported productivity was only significant at specifically 10H00 and 12H00 and not at 16H00 and 19H00. This may be due to the low response rate for the 16H00 and 19H00 questionnaires. In addition, only slight changes were found in the change of emotions and self-reported productivity as separate constructs over time. It is also important to note that the data used in the study was somewhat skewed due to the biased age and cultural groups of the sample. Thus, this violates the assumption of normality. Consequently, these effects may have impacted on the findings and applicability of the results to alternative contexts. Thus, more research in this field is required.

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Chapter 1
Introduction

For many years, the importance of emotions was underestimated in the workplace because the workplace was believed to be a space that did not tolerate the expression of emotions. However, it has since been acknowledged that individuals do bring their affective states, traits and emotions to work (Clements-Croome, 2000). This is because organisational members seldom carry out their work in an objective manner based on cold cognitive conditions. Organisational researchers have thus begun to take an interest in the effects of emotions in the workplace (Clements-Croome, 2000).

Since research on emotions became more popular and prominent in the twentieth century, researchers began to look at the relationship between emotions and various behavioural outcomes such as decision making processes (Isen & Means, 1983) and performance (Bell & Staw, 1989). One of the more popular studies on emotions is the investigation of the happy-productive worker hypothesis (Staw & Barsade, 1993). However, mixed results have been found to support or disapprove this hypothesis (Iffaldano & Muchinsky, 1985; George & Brief, 1992). Furthermore, the theoretical content underlying the two constructs are also unclear. Firstly, happiness is a rather confining term that is used to describe how an individual is feeling emotionally. It only depicts one particular emotional state. Therefore, using a broader construct may be more suitable to better understand the influence of emotions on the behavioural outcome, productivity. Secondly, productivity in the past has been very poorly defined and researchers have used various types of organisational outcomes to broadly define and measure the construct. Thus, the current study will use a more precise measure by means of a subjective evaluation of productivity. Furthermore, many of the studies which have examined the relationship between emotions and productivity have only assessed this relationship based on one moment. Since emotions are said to be highly susceptible to change, it was therefore important to assess the happy-productive worker hypothesis longitudinally to examine whether there are any patterns in this relationship over time.

Chapter 2
Literature review

2.1. Introduction

The literature review will explore various discrepancies and potential areas of development within the research on emotions and productivity in the workplace. This will include a general definitional clarification of each construct followed by a discussion of their respective roles specific to the workplace environment. Thereafter, various models and theories for both constructs will be discussed.

2.2. Emotions

Although the concept of emotions was first addressed by William James in 1884 (Gross & Munoz, 1995), research emphasising emotions only made substantial advances towards the end of the twentieth century. This progress provided a better understanding of the structure and roles of emotions in human behaviour (Lord & Kanfer, 2002).

Since William James first questioned "What is an emotion?" in 1884, until today, more then a century later, there does not seem to be a satisfactory answer. This is because emotion was seen to be a 'fuzzy category' with no clear boundaries of what can or cannot be considered to be an emotion and whether there are particular conditions from which an emotion can be experienced. Unlike terms such as 'bachelor' which may be precisely defined as an unmarried man, there is no one true definition of an emotion that would enable one to decide what is and what is not an emotion (Gross & Munoz, 1995). Attempts to clarify the underlying definition or characteristic of an emotion to better understand this concept have included explorations of the role of emotions within various models, theories of emotions and also differentiating emotions from other similar terms which are often used interchangeably. The following sections will consider some of the models and theories; however it is important to first differentiate the term 'emotions' from other similar terms.

2.2.1. Definition: affect, moods and emotions

The terms which are often confused and used interchangeably with emotions are affect and mood. Both moods and emotions fall under the general term of affect. Affect is a psychological state with the fundamental characteristic of possessing change (Weiss & Kurek, 2003). If one envisions a continuous stream of experiences, changes of some kind may be observed between the particular moments. These changes may be seen as an individual changing from one state to another. These states have the potential to vary in length of time. For instance, the pain from dropping a book on one's foot may last for a moment and anger may last for a few hours. As a result, regardless of how long it takes for people to change from one state to another and how long they maintain a particular state, states are nevertheless time bound constructs possessing the potential to change at any moment (Weiss & Kurek, 2003). Thus, if affect is defined as a state, the features that describe the nature of a state can therefore also be used to characterise affect. Consequently, moods and emotions are also considered to be states as they constitute the two forms of affect.

Taking into consideration the lack of definitional clarity between emotions and affect in past research, the studies on emotions and affect which will be referred to throughout this paper will therefore be considered as comparable or alike due to the structural complexity and characterisation of the affect construct. It was, however, important for the purpose of the current study to carefully define and distinguish between emotions and moods, as they are considered subcategories of affect and thus carry a different meaning.

There have been several definitions which have attempted to differentiate moods from emotions. However, there are two differentiations that are most appropriate to highlight for the context of this study. Weiss and Kurek (2003) suggest that moods are generally considered to be more dispersing affective states, deficient of a defining object and disjointed from specific objects or state of affairs. Emotions on the contrary, are believed to be affective states that are connected to particular objects or circumstances. In other words emotions are related or attached to some person, event or object.

A similar differentiation was found in the work of Izard (1993). Although Izard (1993) considers emotions to be a complex phenomenon, he emphasises the practical

component of emotions which has the ability to manifest in the form of a physical action, biasing of perceptions, or a feeling state. Emotions are said to be associated with a specific stimulus and occupy a shorter period in time while moods on the other hand are more enduring, diffused and less related to specific stimuli (Weiss & Kurek, 2003). Staw and Barsade (1993) further support this differentiation by recognising that emotions generally denote a strong reaction to a specific object or cause; in contrast, moods usually refer to a milder, more diffuse affective state that may not be directed towards a single attitudinal object. Weiss and Kurek (2003) provide examples that distinguish between the language of emotions and moods. For instance, "I'm feeling down" and "I'm feeling kind of perky" are considered statements which form part of the language of mood. On the other hand, "I'm feeling angry with my boss" and "I'm feeling guilty about missing my son's soccer game" are statements in the language of emotions. From these examples it can be seen that the reported emotions are linked to some sort of event, person or object that are absent from the mood statements. Consequently, when looking at emotions it is necessary to relate them to some specific person, object, behaviour or event.

2.2.2. Common theories on emotions

Over the years, there have been a number of theories and models developed in an attempt to gain a better understanding of the role of emotions in various contexts. Initially, it would be useful to consider theories that address the basic role and meaning of emotions as well as the fundamental units of the construct.

2.2.2.1. Basic emotions

One of the more prominent models within the field of emotions is the basic emotions structure. Over the years, researchers were struggling to decide which emotions to label as a basic emotion. This is because researchers tend to question the basis upon which one is willing to call an emotion 'basic' (Lord & Kanfer, 2002). Izard (1992) for example, proposes three criteria: basic emotions have innate and unique neural substrates, unique facial expressions and unique feeling states, while Ekman (1994) suggests further criteria that incorporate primate and automatic appraisal and distinct physiology. Thus, after thorough discussions and negotiations, researchers eventually came to a consensus that the range of emotions disperses from a universal set of nucleus emotions (Lord & Kanfer, 2002).

Having considered the different criteria to assess those emotions that qualify as a basic emotion, six emotions are repeatedly identified within this category. These emotions are happiness, surprise, fear, sadness, anger and disgust. Although many researchers agree that these six emotions are sufficient to form the basic emotion structure, the prototype theory, which is developed by Shaver, Schwartz, Kirson and O' Conner (1987), has critiqued that 'surprise' cannot be considered as a basic emotion. Shaver et al. (1987) felt that surprise does not clearly demonstrate a particular kind of feeling due to the varying applicability of this feeling to sudden situations. Despite this critique, however, these six basic emotions have since formed the fundamental units of the basic emotions structure.

After the establishment of the basic emotions, subsequent research used this structure as the core foundation to further build upon the concept of emotions. Of relevance to the current study is the prototype theory, which has been previously mentioned. According to Shaver et al. (1987), the basic emotions can be further subdivided into twenty-five subordinate categories. Each subcategory is distinguishable based on the intensity of the emotion, antecedents and/or context for which the emotion is expressed. Alternately, emotions can also simply be categorised as positive and negative emotions. These two categories would then form the two superordinate levels of emotions (Shaver et al., 1987). This classification into two superordinate levels is based on the proposition that affective states, despite the differences between moods and emotions, appear to fall along a bipolar dimension ranging from positive to negative. This continuum is referred to by terms such as 'valence', 'hedonic tone' or 'pleasantness'. Further examination has found that these affect states, whether positive or negative states, are sometimes aroused or quiescent. For that reason, an emotional arousal or activation dimension is perceived as relevant to complement the valence dimension (Lord & Kanfer, 2002). In contrast to this view, Bradburn (1969) found that positive and negative affective states do not lie on a bipolar dimension but rather stand as two separate dimensions. It is therefore important to clarify whether these dimensions should be treated as bipolar opposites or as two separate dimensions in order to understand and assess them correctly.

Thus, noting these two different views, attempts which have been made to clarify this incongruity will be discussed next. Firstly, this led to the development of the Positive Affect Negative Affect Schedule (PANAS) by Tellegen, Watson and Clark (1999). Further

developed from the PANAS, a geometric scale called the affect circumplex (Refer to Appendix A) can be used as an attempt to understand whether affective states comprise two separate dimensions or a single bipolar construct (Tellegan, et al., 1999). This affect circumplex was developed by Larsen and Diener (1992) and has the affect terms circumscribed in a particular order. The order and distance between the terms are arranged along the circumference according to the similarity in meaning between the affect terms. In such a structure, the location of the affect terms are determined by the main longitude and latitude which are at right angles to each other, each representing a dimension with a particular meaning. The latitude dimension represents the continuum between pleasant and unpleasant affect and the longitude dimension characterises activated versus inactivated affects.

Hence, based on the structure of the affect circumplex model by Larsen and Diener (1992), it is suggested that although a range of emotions can be experienced, they however need to be categorised on a circular continuum. This circular continuum nevertheless still relies on two main emotion dimensions, namely arousal and pleasantness. These two dimensions are measured on a bipolar scale. The extremes on the bipolar scales of each of the dimensions represent the positive and negative aspect of the particular emotion. Consequently, the affect circumplex supports the notion that positive and negative emotions are bipolar in nature.

Another illustration to show that positive and negative emotions fall on a bipolar continuum is demonstrated by one of the dimensions on the affect grid (Refer to Appendix B), which is pleasantness. This model uses the broader affect construct to understand emotions and is constructed by Russell, Weiss and Mendelsohn (1989). The affect grid was designed to record judgements about single instances of affect and is based on a similar concept to the affect circumplex. The feeling presented by a single facial gesture or a single word constitutes the judgements expressed. According to this model, the affective state that a person can experience is proposed to lie within two dimensions, which are represented on a perpendicular set of axes. The horizontal axes from left to right represent the pleasantness-unpleasantness dimension, where the vertical axes from top to bottom represent the arousal-sleepiness (Russell et al., 1989). Thus, this model comprises four quadrants. Each quadrant represents an inclination towards different emotions. Therefore, someone with high arousal and high pleasantness would tend towards a feeling of excitement, a person with high arousal

and low pleasantness would tend to be calm, individuals with low arousal and high pleasantness would lead to anxiety, and lastly, someone with low arousal and low pleasantness would tend towards depression.

When relating the affect grid to positive and negative emotions, pleasantness can be more closely associated to the positive and negative emotions. Emotional arousal, on the other hand has less clear boundaries to show whether high arousal is a positive or negative emotion. It would be dependent on the context or environment in which the person finds themselves. For example, an excited person can feel just as emotionally aroused as an angry person. But the excited person is more likely to be experiencing more positive emotions in that particular circumstance. A more blurred example is a person who is feeling eager. Whilst this emotion may involve high arousal, it would be dependent on the situation to determine whether it is a positive or negative emotion. For example, a person who is eager to find out whether they have been retrenched is likely to interpret this emotion as more negative than someone who is eager to find out about his or her salary increase.

As a result, pleasantness and arousal can be described as two dimensions of emotional affect. The current study will therefore look at emotions in line with the way emotions was conceptualised by Shaver et al. (1987) and Russel et al. (1989). Furthermore, it is acknowledged that pleasantness and arousal are not the only dimensions that can be used to describe and understand emotions yet is sufficient to only use these two in the current study. In addition it is necessary to note that according to Russel et al. (1989), these two dimensions are conceptually separate even if they happen to be correlated positively or negatively in certain situations. Yet, in the study of Estes and Adelman (2008), they found a consistent relationship between the arousal and pleasantness. This may be an indication that this relationship may be contextually and operationally influenced. Nevertheless, the affect grid is potentially suitable for a study that requires any judgments about affect or emotions of either a descriptive or subjective kind (Russell et al., 1989).

2.2.3. Emotions in the workplace

Despite the general theories on emotions, it was not until the end of the twentieth century that research on emotions gained its prominence in organisational literature. Only during the last decade of the twentieth century did researchers begin to pay attention to this topic. According

to Flam (1993), a serious analytical interest in emotion in general and in negative emotions in particular is almost missing in the studies of work and organisational life. Likewise, Ashforth and Humphrey (1995) commented that everyday emotions that are part of organisational routines have been surprisingly neglected, given that they saturate and are an inherent part of the workplace.

Domagalski (1999) suggested that this disregard for the emotional subtext of organisations was largely due to the longstanding emphasis on rationality and more deliberate modes of performance in organisations. Yet, even when attention was directed to the socio-emotional needs of employees, as was the case with the Hawthorne studies (Brief & Weiss, 2002), superiors were advised to maintain a controlled posture in order to effectively deal with the 'irrational' emotional episodes of the members of the workforce. As a result, employee emotions were considered negative and irrational. Emotions were considered something that had a need to be managed and controlled so that they would not interfere with rational organisational functioning (Stearns & Stearns, 1986). However, later investigations acknowledged that employees seldom carry out their tasks in an objective manner based on cold cognitive conditions. Consequently, organisational researchers have since begun to take an interest in the effect and role of emotions in the workplace (Clements-Croome, 2000). A few models have therefore been developed to explore at the role of emotions in the workplace.

2.2.3.1. Employee positive emotion and favourable outcome model

The employee positive emotion and favourable outcome model was not specifically developed to look at emotions in the workplace. However, the constructs used in this model can be applied to an organisational context and are relevant to the current study. The employee positive emotion and favourable outcomes model was developed by Staw, Sutton and Pelled (1994). Similar to the previous models discussed, this model also categorises emotions into the two broad positive and negative terms as previously discussed. This model suggests that positive emotions bring about favourable outcomes on the job through three possible intervening processes (Staw et al., 1994). The first process suggests that positive emotions have desirable effects on an individual independent of the person's relationship with others, including greater task activity, persistence, and enhanced cognitive functioning. The second process proposes that people with positive rather than negative emotions benefit

from more favourable responses by others. People with positive emotions are more successful at influencing others. They are more likable, and a halo effect may occur when warm or satisfied employees are rated favourably on other desirable attributes. The last process suggests that people with positive feelings react more favourably to others, which is reflected in greater altruism and cooperation with others (Staw et al., 1994). In essence, Staw et al. (1994) suggests that employees who travel through organisational life with a positive emotion will reap more favourable outcomes from their workplace in comparison to their more negative counterparts.

2.2.3.2. AET (Affective events theory) model

Having considered a few theories and models on emotions, the Affective Events Theory (AET) (Refer to appendix C) appears to be the most all-encompassing theory on emotions in the context of this current study (Weiss and Cropanzano, 1996). The AET is useful as it represents a fuller understanding of emotions in the workplace. Although Weiss and Cropanzano (1996) initially presented their model as an untested theory, and research was still in the early stages, results to date have been strongly supportive of the core ideas in the theory.

This theory is represented by a model which was developed by Weiss and Cropanzano (1996). In the AET, Weiss and Cropanzano (1996) argue that aspects of the work environment including environmental conditions, roles and job design initiate emotions in organisational settings. AET focuses on the structure, causes and consequences of affective experiences at work by examining the antecedents of employee' experiences of affective work events and the affective, attitudinal and behavioural reaction to these events. The antecedents of work constitute the affective events which are described colloquially as 'hassles and uplifts" that act systematically to determine affective states. In turn, these states lead to attitudinal and behavioural outcomes (Weiss & Cropanzano, 1996).

One of the more important outcomes of AET research is attempting to understand job satisfaction from a new perspective. For many years, researchers have been puzzled by consistent findings suggesting that job performance bears no relation to workers' feelings of satisfaction (Judge, Thoreson, Bono & Patton, 2001). Various organisational studies in the past have studied affective experiences not as affect itself but rather as related constructs

such as job satisfaction, psychological strain and burnout (Weiss & Kurek, 2003). Fewer studies have looked at affect in terms of emotions and moods in the workplace.

Although the regularly used constructs to measure to affect may potentially be influenced by affective experiences and are related conceptually, they are not the same as actual affective experiences. Job satisfaction, which is the most frequently used construct to measure affect is in fact often categorised as an attitude and not as an affective state (Staw & Barsade, 1993). As an attitude, job satisfaction is best conceptualised as an evaluation of one's job which is influenced in part by affective events that have occurred at work, as a source of error, and the mood whilst making the evaluation (Brief, Butcher & Roberson, 1995). Thus, job satisfaction generally encompasses a large cognitive component.

A further noted difference between job satisfaction and affective experiences is that job satisfaction is a fairly stable construct as compared to affect (Weiss & Kurek, 2003). Additionally, the AET makes it clear that a range of emotions are transient states rather than aspects of work life that remain constant for long periods of time. Employees at work may, in one moment, be overjoyed with a successful outcome and in the next moment, be disappointed and perhaps even angry when their boss does not appear to share their enthusiasm. Thus, job satisfaction is not a good measure of affect since affect is highly susceptible to change. Researchers today have argued that job satisfaction constitutes a set of attitudes towards work that do not necessarily include affective feelings (Weiss & Kurek, 2003). As a result, research that specifically addresses affective states such as emotions rather than substitutes for the outcome of these states is required.

Noting that emotions are susceptible to change on a moment to moment basis, the study conducted by Ashkanasy, Zerbe and Hartel (2002) suggested that it may be worth examining emotions as well as the relationship between emotions and productivity through inspecting 'within subjects' effects rather than only considering the differences and/or patterns between individuals. In agreement with this view, Stone, Shiffman and De Vries (1999) have looked at within subject effects of emotions. In their study, Stone et al. (1999) captured momentary affective states among employees using an ecological momentary assessment. Participants were signalled at random points on various days and asked to indicate their emotional sates. These states were measured using the pleasant versus

unpleasant and aroused versus sleepy dimensions as on the affect grid. These immediate affective states were collected over a two-week period.

In addition, the AET also describes how employee behaviours and attitudes are constantly changing as they encounter everyday hassles and uplifts in their workplace. In the AET, events related to emotions are seen to be a central aspect of understanding employee attitudes and behaviour. Ashkanasy et al. (2002) argued that it is the little things building up that determine how employees think and behave. They suggest that uplifting events, such as a complimentary comment by a superior, or a friendly and supportive act by a colleague following a negative occurrence such as a lost sale, can reverse the negative behavioural consequence that would normally be expected to emerge from the event (Ashkanasy et al., 2002).

Results from this study showed that individual affective experiences examined over time have distinctive patterns (Stone et al. 1999). Although patterns were observed, no distinct cycles were detected. Similar results were found in the study of Dickman (2002) and Egloff, Tausch, Kohlmann and Krohne (1995). Dickman (2002) found that arousal tends to increase throughout the day in the presence of some sort of manipulation such as smoking or caffeine intake. Egloff et al. (1995), furthermore, found that the positive moods increases from morning to evening. However, Stone et al. (1999) found that the average levels of positive and negative affects were found to differ among individual participants. The variability of the affect levels fluctuate in the intensity of the peaks and valleys and the time span for movement from one state to another (Stone et al., 1999). Fluctuations are, however, predictable and explainable by the mere aspect that individuals are exposed to different experiences. This suggests that emotions, being sensitive to any sort of stimuli, have a high susceptibility to change and fluctuation. The conclusion from their study was that affective experiences are state constructs that vary in direction, intensity, subjective experience and length of time.

In summary, emotions are often misinterpreted and used interchangeably with other constructs such as mood. However, the distinguishing factor, according to various researchers as previously discussed, is that emotions refer to the feelings that are experienced in conjunction with events that individuals experience (Weiss & Cropanzano, 1996). These feelings are also said to be susceptible to change on a moment to moment basis (Stone et al.,

1999). Thus, given the transitory nature of emotions, the construct can be observed and studied over time to trace potential patterns and within subject effects which may emerge. Emotions have also in the past been understood and measured using various related construct. However, it has often been conceptualised and described as two dimensions namely pleasantness and arousal (Russel et al., 1989). Thus, the current study will also approach the concept of emotions from this point of view.

Furthermore, according to Weiss and Cropanzano's (1996) AET model, emotions or aspects of affect in theory can be related to various behavioural outcomes such as decision making, performance, psychological stress, judgements and interpersonal behaviour (Lucas & Diener, 2003). Yet, the behavioural outcome, which the current study is most interested in testing, is productivity. The AET model also specifically suggests that there is some association between productivity with emotions (Weiss & Cropanzano, 1996). Thus various behavioural outcomes could have been chosen, but based on the proposed relationship by the AET, and with productivity being one of the more important behavioural outcomes in the workplace, the current study will therefore inspect this suggested relationship.

2.3. Productivity

Since the 1930s there has been a great deal of interest in the relationship between employee well-being and productivity (Zelenski, Murphy & Jenkins, 2008). Hersey (1932) reported a positive relationship between daily emotions and performance, whereas Kornhauser and Sharp (1932) reported that worker attitudes (more cognitive assessments of emotions) were not related to productivity. Establishing whether or not emotions in the workplace promote productivity has important implications for management and strategies for workplace improvements. Thus, understanding the role of productivity in the workplace is important and the current study will look at the relationship between productivity and emotions. As a result, to get a better understanding of this construct, the definition of productivity will first be considered. This will be followed by an examination of the Triple P model and an explanation of how it can be assessed. Thereafter, there will be a brief look at previous studies on workplace productivity.

2.3.1. Definition

Productivity, like emotions, is a complex construct which is often poorly differentiated from its neighbouring terms. The earliest appearance of the term ‘productivity’ was used by Quesnay (1766) (as cited in Tangen, 2004). Subsequent to its first appearance two centuries ago, the term productivity has since been applied and explored in many different circumstances and at various levels of aggregation. However, similar to emotions, productivity is also often confused with its neighbouring terms. There is therefore a need to clarify the theoretical and operational definition of the construct. This can be achieved through the use of the triple P model (Tangen, 2004) which will be discussed next.

2.3.2. Triple P model

An effort to clarify this definitional confusion has been found in the triple P model (Tangen, 2004) (Refer to appendix D). The schematic representation of the triple P model can be used to distinguish between the following commonly confused terms: productivity, performance, effectiveness, efficiency and profitability (Tangen, 2004). This model allows the main differences between the terms to be clearly discernable.

Briefly looking at the triple P model, effectiveness and efficiency seem to shadow the whole model. In essence, effectiveness can be defined as doing the right things, whereas efficiency is described as doing things right (Sink & Tuttle, 1989). However, neither of these constructs is appropriate for the current study.

Looking more specifically at the heart of the model, the outer perimeter forms the performance factor. Performance is the umbrella term for excellence and includes profitability and productivity as well as other non-cost factors such as quality, speed, dependability, delivery and flexibility. In relation to performance, productivity and profitability are more specific concepts related to the input-output ratio. Performance encompasses a broader term, which covers both overall economic and operational aspects. Slack, Chambers and Johnston (2001) nevertheless suggest that the performances that each organisation strives to achieve are very case specific. Due to the overly generalised definition of performance, measurements of performance may be unclear or unspecific as to which

aspect of performance one is measuring, even though at times only one facet is of particular interest.

Forming the middle perimeter of the triple P model is the construct of profitability. It cannot be denied that productivity and profitability are interdependent; however, they do not always go hand in hand (West, 1999). In general terms, profitability appears to be the goal for the success and growth for any given business, which can strictly be defined as the ratio between cost and revenue or assets versus liabilities (West, 1999). Profitability focuses on the monetary input-output relationship which influences the price factors such as price recovery. Consequently, profitability does not address the direct issues of interest in this study and thus will not be considered further here.

Lastly, productivity forms the central part of the triple P-model. Tangen (2004) suggests that productivity is a multi-dimensional term, for which the definition may vary depending on the context in which it is used. Despite the range of definitions used to describe productivity, there appears to be common underlying characteristics that are embraced by the term. The features tend to follow the classic definition of productivity, which is described as the ratio of the quantity and quality of units produced to the labour per unit of time (Bolton & Drew, 1991).

The triple P model clarifies the definition of productivity and allows for a better understanding of the differences and similarities with its confounding neighbouring terms. It is, however, difficult to measure productivity using the method explained in the model, especially due to the wide range of occupations which will be incorporated into the current study. According to Koss and Lewis (1993), the way productivity is defined and interpreted depends on the context in which it is used. As a result, when comparing work outputs using objective evaluations, it is necessary to consider the occupation as well as the level in the organisation in which the employee is working. This can then raise questions about the meaningfulness of productivity assessments.

For instance, jobs that have productivity levels that can be defined using only the quantity of service or products delivered on a daily basis, assessments of productivity can be easily evaluated by a third person such as a superior or colleague. However, in many other occupations, results of work input are often only observed on a longer term basis. In those

circumstances, work output may be results of inputs accumulated over many days rather than a one day input-output routine (Kupers, 1998). For a salesman, the number of products/services sold daily may predict their daily productivity which can be easily assessed by a third person. On the other hand, occupations such as architects, auditors and attorneys operate on longer term input-output system where the fruits of their input are usually only observed over a few or many days, if not longer. Furthermore, their outputs may not be tangible.

Therefore, to objectively assess the daily productivity levels of those who operate on the longer term input-output system would be inappropriate (Kupers, 1998). Thus for the purpose of the current study, self-reported productivity measures were considered to be more useful as daily productivity was measured over a period of time. It is important to note that previous research has mostly utilised superior or management evaluations in terms of performance and productivity levels. Thus, it was interesting to change the perspective to consider subjective evaluations. This is because an individual may have different views from their superiors or colleagues about how productive they have been. This is especially true in occupations where results of their work cannot be discretely counted. Furthermore, it is assumed that employees themselves are clearer about what they have and have not been doing, which contributes to how productive they see themselves (Vora, 1992).

According to Broman's (2004) definition, productivity can also be examined by considering the relationship between the actual and potential output of a process. For the purpose of the current study, the application of this concept seems reasonable, since the gap between actual and potential productivity levels can be evaluated or judged by the individual as well as by others. The current study will be using self evaluations. Therefore, the higher the reported actual productivity level, the closer the individual feels to achieving their optimum potential. The potential or optimum productivity level that the individual relates to their actual productivity level is, however, only in relation to that given instance. This is because the individual is only reporting their actual productivity level in relation to the potential optimum level they are working at in the given or immediate environment. They may feel that their potential to work at an even higher productivity level could increase if all the necessary resources are available or if they were working in a different environment. For example, an employee such as a receptionist working in an organisation on an open day may be very distracted by the visitors walking in and out and constantly asking questions. On that

particular day, the receptionist may not be as productive as every other average day at work but she may still be working as productively as she could, given the circumstances. As a result, this concept allows for contextual flexibility.

2.3.3. Studies on productivity

Having considered the definition of productivity, this section will now look at some previous studies which on productivity. The links between productivity and human well being are of interest to many kinds of social contexts. Argyle (2001) points out that there are mixed or inconsistent evidence to show that cognitive states affect worker productivity. For instance, work by Wright and Staw (1999) examines connections between worker affect and supervisors' ratings of workers. Depending on the affect measure, the authors find interesting but mixed results. Amabile, Barsade, Meuller and Staw (2005) uncovers evidence that happiness appears to provoke greater creativity. Lastly, Paterson, Warr and West (2004) detect influences of emotion and affect upon productivity while Sanna, Turley and Mark (1996) suggests that those individuals who are experiencing a negative emotion put forth the most effort.

There is an analytical literature by economists that it examines the interconnections between psychological forces (in particular, biased perception) and human productivity. The research done by Benabou and Tirole (2003) focuses on the interactions between self-deception, malleability of memory, and ability and effort. The authors consider the possibility that self-confidence enhances the motivation to act, which in essence can be related to the idea that there can be a connection between affect and productivity.

Therefore, there are various psychological traits that can be combined in very complex ways to predict productivity. However, across the various traits typically required of employees, emotions may be one of the more important factors in understanding productivity as employees are said to seldom carry out work activities in an objective and cold cognitive conditions (Clements-Croome, 2000).

2.4. Emotions and self-reported productivity

Having gained a better understanding of both the constructs, this section will now delve more deeply into the proposed relationship between emotions and productivity as suggested by the AET. One of the more popular theory which illustrate this suggested relationship by the AET is the happy productive worker hypothesis (Staw & Barsade, 1993).

2.4.1. Happy productive worker hypothesis issues

Managers and researchers have long believed that the happy worker is a productive one (Staw & Barsade, 1993). Various welfare and human resource programmes have been based on the happy productive worker hypothesis. These programmes were attempts made by management to reduce labour conflict and improve production rates (Wright & Staw, 1999). Despite considerable research on the subject, uncertainty remains today as to whether happier workers are indeed more productive (Wright & Cropanzano, 2004). Researchers have suggested that inconsistent findings linking happiness and productivity may be due to inconsistent measurement. Most often in studies of happiness and productivity, happiness has also been operationalised as job satisfaction (Brief & Weiss, 2002). However, job satisfaction may not be an effective proxy for happiness as previously discussed.

In recent years, researchers began to conduct more careful analyses of existing studies. They developed new paradigms for testing the relationship and modified the original job satisfaction-productivity hypothesis. For example, Judge et al. (2001) suggested that the meta-analysis of Iffaldano and Muchinsky (1985), which found an average correlation of .17 between satisfaction and performance, underestimated the true correlation. In their updated meta-analysis, Judge et al. (2001), found a higher correlation of .30. Both these correlations are, however, weak and on the low side of average. Other researchers have suggested that positive affect and positive emotions are more likely to make workers more productive than job satisfaction (George & Brief, 1992).

In relation to the happy productive worker model, emphasis is only placed upon the effect of happiness on productivity. This may be problematic as it only emphasises one of many possible emotions. This is not to say that it is not a good predictor, as Oswald, Proto and Sgroi (2008) found a positive relationship between happiness and productivity.

However, it is seen to be limiting to explain productivity in relation to other emotions, such as anger. It is only able to relate emotions to productivity in terms of how happy a person is feeling and not with any other emotion. As a result, the explanation on the emotional side of the hypothesis is rather narrow and confined. This is supported by Lucas and Diener (2003) who state that after a careful analysis of the nature of emotions, it is seen that emotions can play a much more complicated role. It depends on the way people approach the world and the specific actions people take in response to the events. Frijda (1999), for example, views emotions as more than just a feeling of pleasantness or pain combined with an appraisal of an object or event as good or bad. He argues that emotions have three additional components, namely action readiness (readiness for changes in behaviour towards the environment), autonomic arousal and cognitive activity changes. Although each of these components is elicited in reaction to some stimulus, they also prepare people to deal with the stimulus in a specific way. Fear and anger, for example, have distinct patterns of action, autonomic arousal, and cognitive activity changes. People will act very differently towards an unpleasant stimulus depending on whether they feel fear or anger. In essence, Frijda (1999) suggest that human behaviour is related not only to how pleasant people feel but also by their level of emotional arousal.

When applying the emotions theory, as discussed in the previous section to the happy productive worker hypothesis, happiness can only be considered in relation to high pleasantness. This is because high or low emotional arousal does not necessarily give a clear indication of whether the person is happy. Yet, a study conducted by Dickman (2002) found that peak levels of productivity were largely motoric in nature, indicating that arousal was positively correlated to productivity. Therefore, both arousal and pleasantness is suggested to be positively related to productivity.

2.5. Implications of previous research

A constraint identified in many emotions and productivity research is that participants are often limited to those in managerial positions. This is because researchers felt that the work of managers is relatively unstructured and is highly subjected to influence by the person occupying the role (Staw & Barsade, 1993). Though this may be true, not all employees at levels lower then management are nowadays working in what use to be called “machine paced” or highly routine roles. This is especially true due to the vast technological

advancement in the workplace. In many occupations such as a draftsman in an architectural firm or a trainee accountant in an accounting firm, employees are working in positions which are lower than managerial positions, but have the flexibility to complete their work in a given time. In addition to their flexibility they also have access to resources such as the internet to help them complete their tasks on time and more efficiently. Consequently, this study did not limit participants to only employees from specific organisational levels. All levels of employees were invited provided they fulfilled certain criteria which will be discussed in the next chapter.

Lastly, it is also worth noting that the majority of the research in this area has been conducted in other countries. In South Africa, this is a considerably under researched area. Thus, it would be interesting to explore whether the relationship can be influenced by the context or environment one is in.

2.6. Summary

In summary, this research is relevant on a number of levels. The purpose of this study lies further than only reintroducing the importance of emotions into the workplace. The main focus of the current study is therefore to re-examine the happy productive worker theory by broadening the happiness construct and look at the relationship between emotions and self-reported productivity. The need to re-examine this relationship is also supported by the previous misunderstanding and/or of constructs as well as the employee positive emotion favourable outcome model, which in the current study would be increased self-reported productivity (Staw et al., 1994). Furthermore, due to contextual factors, it made sense to assess the association between emotions and productivity using subjective measures, where productivity was rated in relation to the optimum level.

In addition, Ashkanasy et al. (2002) highlighted the need to consider within subject effects. Thus, the current study examined the patterns of emotions and self-reported productivity over time through a repeated measures design. This allowed for the assessment of within subject effects in terms of both emotion and productivity constructs. The relationship between emotions and self-reported productivity was also examined over time. By this it is meant that this relationship will be examined cross-sectionally at different times of the day over a period of time. However, this is not to suggest that it was anticipated that

there would be a difference in this relationship at the various times of the day, but rather to use it as a means to trace patterns of this relationship as well as emotions and self-reported productivity as their own constructs over time.

Furthermore, it has been heavily emphasised that emotions are related to the events in which individuals are exposed to. As suggested by the AET model, emotions change in relation to the hassles and uplifts a person is exposed to (Ashkanasy et al., 2002). Thus, it makes sense to also examine the relationship between emotions and their immediate events to understand the context in which emotions are experienced.

2.7. Research Questions

The following research questions stem from the rationale explained in this section and will be addressed in the results and discussion chapters.

- Is there a relationship between reported events and emotions?
- Is there a relationship between emotions and self-reported productivity?
  - Is there a relationship between arousal and self-reported productivity?
  - Is there a relationship between pleasantness and self-reported productivity?
  - Is there a relationship between the interaction of arousal and pleasantness with self-reported productivity?
- Are there any changes or patterns of emotions over time?
- Are there any changes or patterns of self-reported productivity over time?
- Is there a pattern in the relationship between emotions and self-reported productivity over time?

Chapter 3
Methodology

3.1. Introduction

The previous chapter discussed the literature on emotions and productivity. In this chapter the methodology of the research will be discussed. This will include an explanation of the research design, the procedure that was undertaken in order to carry out the research, the participants that formed part of the research, how the data was collected, how the data was analysed and finally, various ethical considerations pertaining to the research.

3.2. Research design

This research was carried out quantitatively and took the form of a longitudinal non-experimental research design.

3.3. Procedure

The current study formed part of a larger project where three other researchers also examined the role of emotions in the workplace. However, each researcher explored emotions in relation to a different construct. In light of this, each researcher nevertheless recruited participants that would be pooled together to form a larger sample. Therefore, all participants were required to complete questionnaires designed to measure their emotional states as well as the four additional constructs that are specific to each researcher.

The criterion to decide whether individuals could participate in the study was that had to have access to their e-mail. This is because participants were required to complete some questionnaires during the day and some in the evening through accessing their email. This will be further explained in the next section. As a result, for the purpose of this study, the sample was limited to working adults.

Since the current study forms part of a larger research project, an integration of the questionnaires from each researcher was first compiled. Necessary questions from every researcher of the larger research were put together for each of the particular questionnaires. The integrated questionnaires were constructed in such a way as to create a better flow to

facilitate a good understanding of the questions and to ensure that there were no repetitive questions. As a result, five separate questionnaires were compiled. The first questionnaire (Refer to appendix E) compiled was the biographical questionnaire used to collect demographic information. The other four questionnaires (Refer to appendix F-I) consisted of specific questions that were intended to answer the main research questions of interest to the current study as well as those of the other researchers. All four of these questionnaires were self-report surveys.

After the assembly of the final questionnaires, a distribution schedule (Refer to appendix J) was constructed. The distribution schedule incorporated the formulation of the particular days and times on which the particular questionnaires were to be sent out to participants. Participants were expected to complete questionnaires as soon as possible. It was decided to carry out the study over a three-week period. During these three weeks only two or three days of the five working days throughout each week were used to collect data. The selected days were patterned in this way to evenly spread the days of data collection between weeks. Times were set according to an estimation of the general working hours across organisations.

As such, the first questionnaire (Refer to appendix F) was set for 10H00. This is because a time lapse was required for the participants to be able to answer various questions in the first questionnaire. For example, since the study partially aims to assess the level of productivity of the participant as well as the particular event that may be attributed to the reported productivity and emotional levels, these can only be evaluated provided participants have already spent some time at work, for experiences or events to take place. This is based on the assumption that by 10H00, participants have already been at work for some time.

The second questionnaire (Refer to appendix G) was set to be around lunchtime and the third (Refer to appendix H) just before day end. These two questionnaires were set at these times in order to provide sufficient time for potential variations in responses from the previous questionnaires. The last questionnaire (Refer to appendix I) was set for 19H00 to examine the emotions and self-reported productivity levels of participants who brought work home.

Once the questionnaires and schedule were put together, questionnaires were posted onto a web-based data collection database, Survey Monkey. From here onwards, the study can be said to be divided into two stages. The first stage refers to the sampling process as well as to the session where demographic data was gathered together with the collection of participant's consent. The second stage is the period whereby the core data of the study was collected. Further details of each stage will be discussed next.

3.3.1. Stage one

After the compilation of the questionnaires, the sample was recruited via a snowballing technique. The recruitment began with the use of personal contacts. Given that this study forms part of a bigger project, each of the researchers involved in the study aimed to recruit approximately 15 participants based on the criteria that they had to have access to their email throughout the day. Thereafter, each researcher from the larger project met individually with each of their recruited participants to explain the purpose and requirements for administering the questionnaires. Information such as the longitudinal nature of the study and the expected participation was explained. Furthermore, a participant information sheet (Refer to appendix K) and the distribution schedule were also provided to participants during this session, where the details of the study were more vividly explained and consent to participation in the study was requested.

Once permission was granted, participants were sent an email that contained a link which would redirect them to Survey Monkey where they would be able to complete the initial survey (Biographical questionnaire). Incorporated in this survey was also an example of the questionnaires that the participants could expect to be receiving in the following weeks. This trial allowed the participants to familiarise themselves with how to answer the questions; any queries that they may have had in that regard may be clarified before the actual data collection begins. Based on this trial, it was seen that the self-report questionnaires took no more than five minutes for participants to complete. Participants were also requested to respond as soon as possible, from when the emails were received.

Responses to this initial survey were recorded and returned electronically to the Survey Monkey database. Upon completion of this survey, the email addresses of the participants were captured onto Survey Monkey and each participant was then allocated a

reference number. This allowed the researcher to ensure anonymity of the participants as the personal details of the participants from this set of data was deleted by an independent person. The same procedure was carried out for future questionnaires. This reference number was then used for all further correspondence. Once all participants completed the initial survey, it was then possible to progress to stage two of the study.

3.3.2. Stage two

Stage two of the study is defined by a three-week period where the four self-reported questionnaires were sent out according to the above discussed distribution schedule. These questionnaires were repeatedly distributed to the participants at the specified times throughout the three weeks. Each questionnaire was completed after automatically generated emails were sent out to each participant. These automatically generated emails served as notifications to remind the participants when to complete the questionnaires. Also, the email contained a link or web address to redirect the participant to the site to complete the questionnaire. All data collected in the three weeks, as previously stated, were recorded on the Survey Monkey database with anonymity guaranteed. Thereafter, email was the primary source of communication with participants throughout this period.

Recorded responses for all the participants that were gathered separately by each researcher were then combined and used for data analysis and conclusions were made. When all the participants were put together the total sample came to 64 participants. Though 64 participants were recruited, due to the longitudinal nature of the study, not all participants completed all the questionnaires that were scheduled or sent through. Consequently only participants who completed four or more questionnaires were included in the study. As a result, the final sample amounted to 49. Although it is not ideal to include those participants who only completed four questionnaires, this amount was sufficient to look at the variability of the constructs over time (at least a day), given the difficulties experienced in the sampling and data collection process. Thus, this option appeared to have been the most pragmatic solution.

3.4. Sample

Looking at table 1, the final sample consisted of 49 participants of which 21 were females and 28 were males. On average, 14 observations were recorded for each participant. Participants who were included in the sample had to have completed a minimum of two questionnaires. The maximum questionnaires that could have been completed are 32 questionnaires.

The mean age of the sample was 27.14 with a standard deviation of *S*=7.94. The participants' ages ranged between 21 and 62, which was relatively young, with 63 percent of them younger than the mean age. The sample was therefore skewed and does not fulfil the assumption of normality.

In terms of race, 22 participants were White, seven were Black, two were Coloured and 19 were Asian. Thus, the majority of the sample were White and Asian participants. It should also be noted that 76 percent of the sample was English speaking and as such, language barriers shouldn't have posed any problems to the results of the current study. Although not everyone had English as their first language, each participant was still literate enough to understand the language and subsequently answer the questionnaires.

Twenty five percent of participants had completed secondary education while 74 percent also had some tertiary education. Only one participant (2%) held an education level below matric. Twelve participants (24.5%) matriculated and did not further their education. 73.5 percent of the participants went on to further obtain a diploma (12.3%), degree (59.2%t) or some other form of higher education (2%).

Lastly, the majority (86 %) of the participants were single *(n*=43). This can be related back to the age range of the sample. Seeing as the sample was relatively young, it is reasonable to find that majority were single or not yet married.

Table 1. Descriptive statistics of the sample

Variable	Category	Frequency	Cumulative Frequency	Percentage	Cumulative Percentage
Gender	Female	21	21	42.86	42.86
	Male	28	49	57.14	100
Race	White	22	22	44.90	44.90
	Black	7	29	14.29	59.19
	Coloured	2	31	4.08	63.27
	Asian	19	49	38.78	100
Age	21	1	1	2.04	2.04
	22	5	6	10.2	12.24
	23	5	11	10.2	22.45
	24	9	20	18.37	40.82
	25	12	32	24.49	65.31
	27	6	38	12.24	77.55
	28	3	41	6.12	83.67
	29	1	42	2.04	85.71
	30	1	43	2.04	87.76
	31	1	44	2.04	89.8
	33	1	45	2.04	91.84
	34	1	46	2.04	93.88
	39	1	47	2.04	95.92
	59	1	48	2.04	97.96
	62	1	49	2.04	100
Marital	Single	43	43	87.76	87.76
Status	In a relationship	2	45	4.08	91.84
	Married	4	49	8.16	100

3.5. Instruments

Demographic details were collected in order to summarise the sample. A short biographical blank was distributed to each participant to collect this information. The kinds of questions used to summarise the data were, ‘What gender are you?” and “How old are you?”. These questions are sufficiently general so as to ensure the anonymity of participants.

Emotions were assessed by means of the affect grid (Refer to appendix B), developed by Russel et al. (1989). The affect grid is composed of two dimensions. The horizontal axis represents the pleasant-unpleasant dimension and the vertical axis measures the level of arousal. Each of the above dimensions was measured on a nine point scale. This would then form a grid containing 81 blocks. Participants were required to report their emotional state by rating how pleasant they feel on the x-axis and their level of arousal on the y-axis on the grid.

Due to the structure of this scale, item analysis and assessment of internal consistency are, of course, impossible with a single-item scale. Assessment of the reliability of the affect grid was therefore determined indirectly through an interjudge reliability assessment by the developers of the scale. Validity of the scale was therefore determined by the upper bound of the reliability value. It is difficult to calculate the reliability of the affect grid, especially for the self-reporting purposes, because firstly the assessment of interjudge reliability would require that a second judge have access to the subject's mental state, which is impossible. Secondly, a test-retest estimate of reliability, although possible, would be inappropriate for any scale, including the affect grid, that measures states that can change quickly. As a result, the interjudge reliability assessment revealed an estimated reliability of .91 and .81 for the pleasantness and arousal dimensions respectively (Russel et al., 1989).

Productivity was measured using a single item, self-reported questionnaire. This one item was derived from a study conducted by Wyon, Tham, Croxford and Oreszczyn (2000). The original item was used to rate how well employees felt that they have worked during the day in relation to their full capacity on a scale of 0-100 percent. The context in which this item was developed examined the effects of health on self-estimated productivity. Although this item was developed for a somewhat different purpose it could still be used for the current study, as the daily productivity level of employees was also compared to their full capacity.

The main difference was that instead of assessing productivity in relation to health-related factors, the current study examined self-reported productivity in relation to emotions.

In addition to the emotion and self-report productivity scales that were used, other related questions were also asked. These questions involved exploring the possible factors that may contribute to the reported emotional state and self-reported productivity. The purpose of these questions were to investigate whether there is a relationship between reported events and emotions as the theories suggests. Thus the question, "Please specify a particular event, person, object or any other aspect of work that may be attributed to the reported emotion or vice versa" was asked in each questionnaire.

3.6. Analysis

To examine the relationship between emotions and self-reported productivity, a linear model, which is able to accommodate the longitudinal design, was required. In particular, the design had a repeated measures structure in that there were multiple measurements for each individual. However, as the time period did not reflect interventions or treatment effects, the model assumed an autoregressive correlational structure. This assumes that observations for the same person that are closer together in time will be more similar then those further apart.

The analysis for the current study was done through an extension of a regression equation. This extension is called the Hierarchical Linear Model (HLM) which was designed by Bryk and Raudenbush (1992). The HLM provides a conceptual and statistical mechanism for investigating and drawing conclusions regarding the influence of phenomena at different levels of analysis (Hofmann, 1997). The HLM was designed to alleviate the inferential problems associated with using statistical techniques that view hierarchical data on a single level (Kreft, De Leeuw & Van der Leeden, 1994). One of the primary advantages of hierarchical models is that they allow one to simultaneously investigate relationships within a particular hierarchical level, as well as relationships between or across hierarchical levels. In order to model both within and between level relationships, one needs to simultaneously estimate two models: one that models relationships within each of the lower level units, and a second that models how these relationships within units vary between units. This type of two-level modelling approach strictly defines the hierarchical linear model.

This model was chosen over the ordinary least squares (OLS) regression because of the issues around independent observations. According to Osborn (2000), hierarchical or nested data tend to be more homogonous than when data for each person are independently measured from a larger selection. In the current study, homogeneity is evident particularly because observations are collected repeatedly with the same individuals, and are thus not fully independent.

Most analytic techniques, like the OLS, hold independence of observations as a primary assumption (Osborn, 2000). Osborn (2000) suggests that since this assumption is not met in hierarchical data sets, using an analysis like the Ordinary Least Squares regression, would result in standard errors that are far too small. As a result, this in turn will result in a greater probability of rejecting the null hypothesis. Since the HLM does not hold independence of observations as an assumption, it would therefore serve as the best statistical technique to use.

There are a number of properties of the current study that motivate the use of the HLM. As previously mentioned, the current study uses a repeated-measures approach. Since the current study is repeatedly collecting information from the same subjects, the information will therefore become hierarchical in nature. Consequently, the analysis for this type of data would be commonly approached through the HLM and Repeated Measures ANOVA. However, unlike a typical Repeated Measures ANOVA, the current study is not interested in repeated measures in different conditions. Rather, the primary focus of the current study is on multiple readings of the same information. Thus, the HLM appears to be more appropriate than a Repeated Measures ANOVA.

Due to the repeated measures structure the current study relates variables at different levels. At one level, differences are observed between people. At the second level, differences are observed within subjects by means of the multiple observations collected over time. The purpose of the HLM is to analyse hierarchical data on two levels. And since the current study aims to analyse emotions on the levels of people and observations, the HLM would be more statistically appropriate.

Furthermore, the random effects are also estimated for each subject in the HLM (Verbeke & Molenberghs, 2000). This was therefore a suitable analysis to use because it did

not limit a set interval between the observations in a within subjects design over time; this is characteristic of this study especially with the delay questionnaire distributions experienced during data collection.

From the above, it is therefore evident that the HLM was the most suitable analytical technique to fulfil the purpose of the current study. It should be noted, however, that the content and processes of the model are complex. Thus, assistance was obtained in conducting and interpreting the analysis of the study.

Over and above the HLM, additional analyses were also conducted. Simple correlation and t-tests were done to consider the relevance and potential effects of the demographic information. The HLM as well as the other analyses were completed using a computerised statistical program called SAS (version 9.2). SAS (version 9.2) analysed the data using the Proc Mixed procedure which essentially is SAS' (version 9.2) implementation of the HLM.

3.7. Ethics

The presence of any unethical issues in a research process was considered unprincipled to continue with the study until all the issues had been resolved. All actions taken in the current study were carefully monitored to ensure that they were within ethical boundaries. For ethical reasons, extra care was taken to ensure confidentiality. After the completion of the research study, a summary of the results was given to the participants. For ethical reasons, confidentiality was assured, as no individual results were reported. Due to the use of the snowballing technique, permission was also obtained from the snowballed participants for all the other researchers from the larger project to access their information from the questionnaires. Furthermore, data from the study will be kept for two years before it will be destroyed.

In addition, minimal risk was posed towards participants; research was only carried through with the participants who provided informed consent and no deceptive techniques were used. Also, an information sheet was provided to participants before their decision to participate was requested. The information sheet indicated the exact intentions of the

research, as well as all the other necessary details, to the participants. Lastly, participants were also informed of their right to withdraw from the study at any point.

3.8. Summary

The current study involved a complex quantitative methodology utilising a repeated measures design which involved data collection across different times of day and different days of the week over a three-week time period. The sample was collected through a snowballing technique via the four researchers from the larger project. Various ethical issues that were relevant to the research were addressed.

Chapter 4
Results

4.1. Introduction

In order to assess whether emotions are related to self-reported productivity over time, the primary analysis used was a time series analysis. Due to the repeated measures design of the current study, the data was analysed using the HLM and repeated measures ANOVA. These analyses allowed for the measures the differences 'within' subjects through the multiple observations collected over time. In addition, t-tests, correlations and nonparametric tests were also performed. Summarised results for these tests are illustrated below.

4.2. Demographics in relation to emotions and self-reported productivity

It is useful to firstly examine whether any of the demographical characteristics may in some ways be related to the main variables in the current study. In view of the fact that the majority of the demographic variables are nominal data, one way ANOVAs were conducted to assess whether there is a difference in arousal, pleasantness and self-reported productivity levels between the different demographical groups. Results for the analysis are shown in table 2.

Table 2. One way ANOVA: difference between the demographic groups and their level of arousal, pleasantness and self-reported productivity

Variable	**Effect**	**DF**	***F*-value**	***P*-value**
Gender	Arousal	1	.71	.40
Race	Arousal	4	3.31	.02*
Marital Status	Arousal	2	10.93	<.0001*
Gender	Pleasantness	1	.06	.80
Race	Pleasantness	4	11.01	<.0001*
Marital Status	Pleasantness	2	5.44	.004*
Gender	Self-reported Productivity	1	8.32	.004*
Race	Self-reported Productivity	4	9.66	<.0001*
Marital Status	Self-reported Productivity	2	3.02	.05*

*$p < 0.05$

From table 2 it can be seen that there is a significant difference in the level of arousal and pleasantness across the racial groups and between those who do and don't have partners or spouses. In terms of self-reported productivity, there appears to be a significant difference in the self-reported productivity level between gender, racial groups as well as different marital status groups.

4.3. Is there a relationship between reported events and emotions?

With regards to the main variables of the study as previously mentioned in the literature review, the nature of emotions is characterised by its relation to some event. This is what distinguishes it from moods. Consequently, the current study tested this assumption by categorising the reported events into either some or no event attributed by the reported emotions according to the participant's subjective view.

Table 3. Two sample t-test for emotions and self-reported productivity level between the presence or absence of a significant event.

Variable	**DF**	***T*-value**	***P*-value**
Self-reported Productivity	1124.80	-.80	.42
Arousal	1126	.71	.48
Pleasantness	1126	1.64	.10

*$p < .05$

Due to the diverse responses to this question, it was decided to categorise the events in terms of some or no event as opposed to person and object related events as discussed previously (Staw & Barsade, 1993). A two sample t-test was therefore used to test whether there was a difference between those who reported some and those who reported no event that can be related to their emotion or self-reported productivity level. However, as shown in table 3, there is no significant difference in the emotional and self-reported productivity levels between those who do and don't relate these factors to some event.

4.4. Emotion and self-reported productivity

To understand the relationship between emotions and self-reported productivity, the analysis was divided into three parts. Firstly, the relationship between the two emotion constructs, arousal and pleasantness was looked at individually in relation to self-reported productivity; then, the relationship between the interaction of both the emotions constructs and self-reported productivity was considered. Thereafter, the patterns for the changes in emotions and self-reported productivity as well as the relationship between the two constructs over time will be considered. The following research questions will be addressed in this section:

- *Is there a relationship between emotions and self-reported productivity?*
  - *Is there a relationship between arousal and self-reported productivity?*
  - *Is there a relationship between pleasantness and self-reported productivity?*
  - *Is there a relationship between the interaction of arousal and pleasantness with self-reported productivity?*

4.4.1. Is there a relationship between arousal and self-reported productivity?

A simple correlation was performed to assess whether there was an overall relationship between emotions and self-reported productivity. Results shown in table 4 indicate that there was a significant relationship between arousal and self-reported productivity. The relationship found between arousal and self-reported productivity is positive but weak. An almost significant relationship was found between pleasantness and self-reported productivity.

Table 4. Correlation between emotions and self-reported productivity

Variable	**DF**	**Corr. Coeff. (r)**	***F*-value**	***P*-value**
Arousal	1075	.18	14.34	.0002*
Pleasantness	1075	.06	3.76	.05

*$p < .05$

4.4.2. Is there a relationship between pleasantness and self-reported productivity?

Furthermore, in table 4, it is seen that there is a positive but weak relationship (r = .06) was found between pleasantness and self-reported productivity.

4.4.3. Is there a relationship between the interaction between arousal and pleasantness and self-reported productivity?

Though the emotions constructs were measured separately, it would nevertheless be interesting to test the effect of emotions on self-reported productivity as one construct. The interaction between arousal and pleasantness is key to the understanding of emotions in this study. Therefore, the effect of the interaction between arousal and affect on self-reported productivity was assessed by means of a multiple. The results are presented in table 5. As such, a simple correlation was performed to assess the relationship between self-reported productivity and the interaction between arousal and pleasantness. As a result, it is found that there is an almost significant relationship between self-reported productivity and the interaction between arousal and pleasantness.

Table 5. Multiple regression to assess relationship between interaction of arousal and pleasantness with self-reported productivity

Variable	**DF**	***F*-value**	***P*-value**
Arousal *Pleasantness	1073	3.66	.06

*$p < .05$

4.4.4. Test for multicollinearity.

It was unclear why no significant relationship was found in the overall relationship between pleasantness and self-reported productivity, as there was a significant relationship between arousal and not with the interaction between arousal and pleasantness. It was therefore useful to test whether there was an occurrence of multicollinearity where arousal may be related to pleasantness by using a simple correlation. A correlation was therefore used to test for this.

Table 6. Effects of multicollinearity

Variable	**Estimate**	***F*-value**	***P*-value**
Arousal*Pleasantness	.32	123.73	*<.0001
Pleasantness*Self-reported Productivity	.62	9.78	*<.002

*$p < .05$

Results from the correlation shown in table 6 indeed indicate that there was a significant positive relationship between arousal and pleasantness. Thus, when excluding arousal from the analysis, a significantly strong positive relationship between pleasantness and self-reported productivity was found.

4.5. Longitudinal results

Having examined the cross-sectional relationship between emotions and self-reported productivity, the following sections will now consider the within subject effects and the patterns of each construct over time. To introduce the longitudinal design of this part of the study, the change in emotions and self-reported productivity over time will first be considered followed by a more detailed exploration of relationship between constructs at the different times of the day. Thus, this section will address the following three research questions:

- *Are there any changes or patterns of emotion over time?*
- *Are there any changes or patterns of self-reported productivity over time?*
- *Is there a pattern in the relationship between emotions and self-reported productivity over time?*

4.5.1. Patterns in emotions and self-reported productivity over time

To assess this, the average arousal, pleasantness and self-reported productivity levels were graphed to examine the potential for any type of pattern. The graphs for each variable are illustrated in figures 1 to 6. The change in each variable was examined from a broad weekly overview to more specific times of the day.

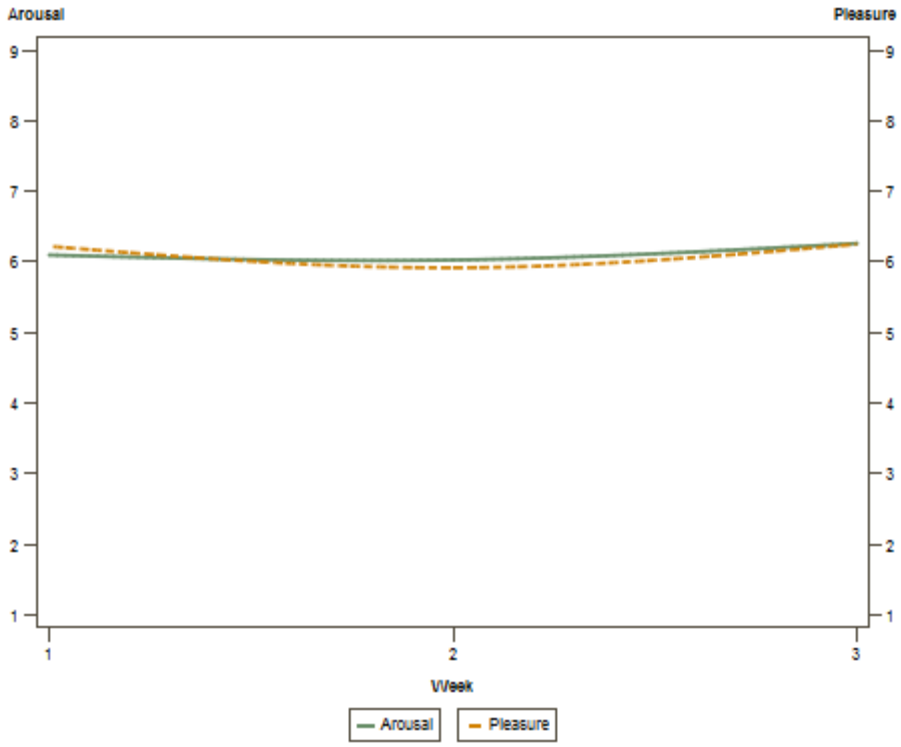

Figure 1. Change in emotions (arousal and pleasantness) over three weeks

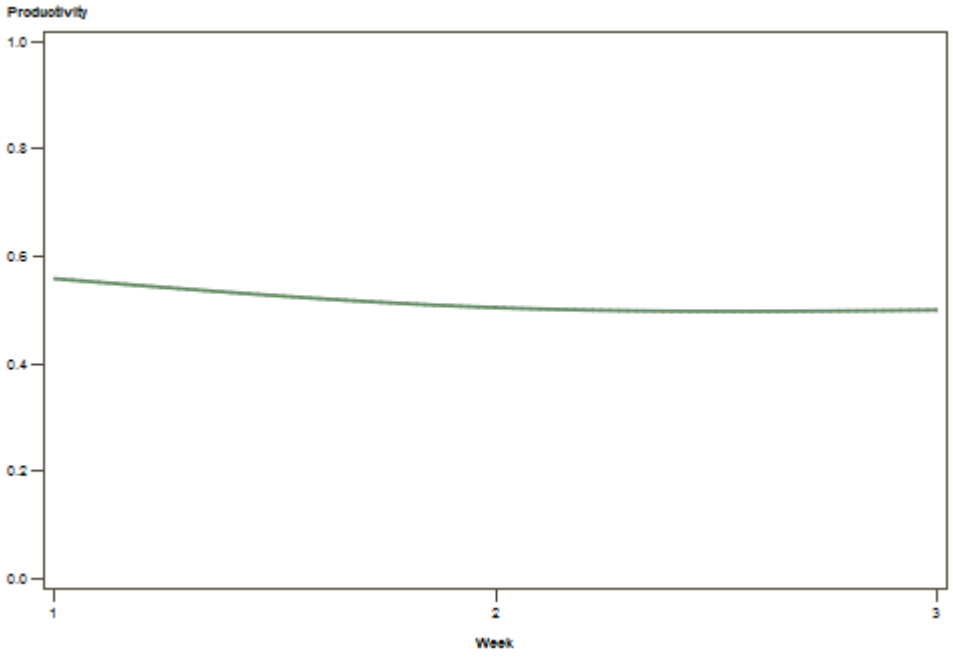

Figure 2. Change in self-reported productivity level over three weeks

Figure 1 and figure 2 show that there is little change in both emotions constructs as well as self-reported productivity over the three weeks. All three constructs virtually stay at a consistent level with little change throughout the weeks.

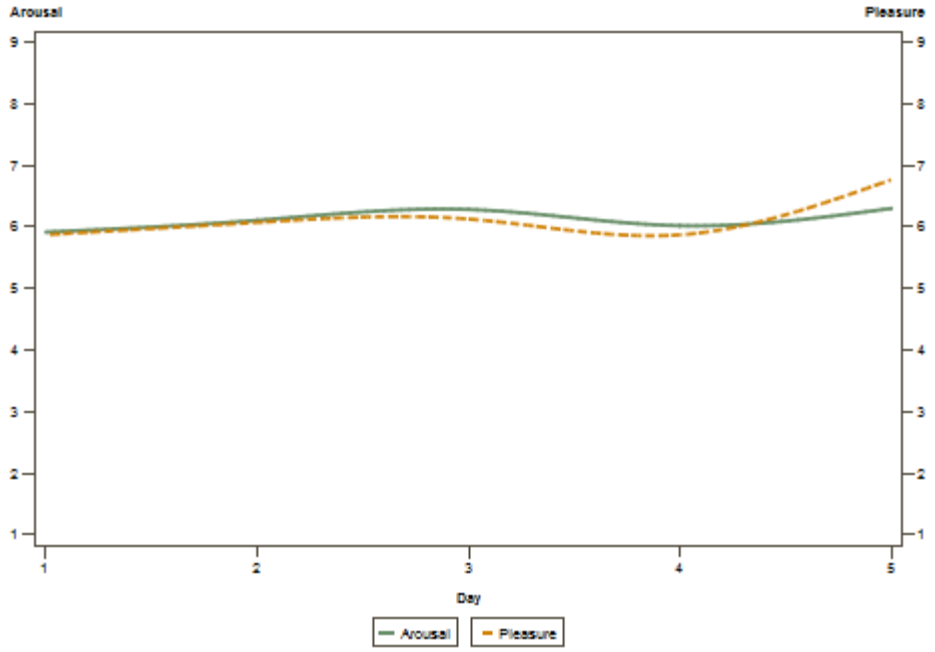

Figure 3. Change in emotions (arousal and pleasantness) on a daily basis

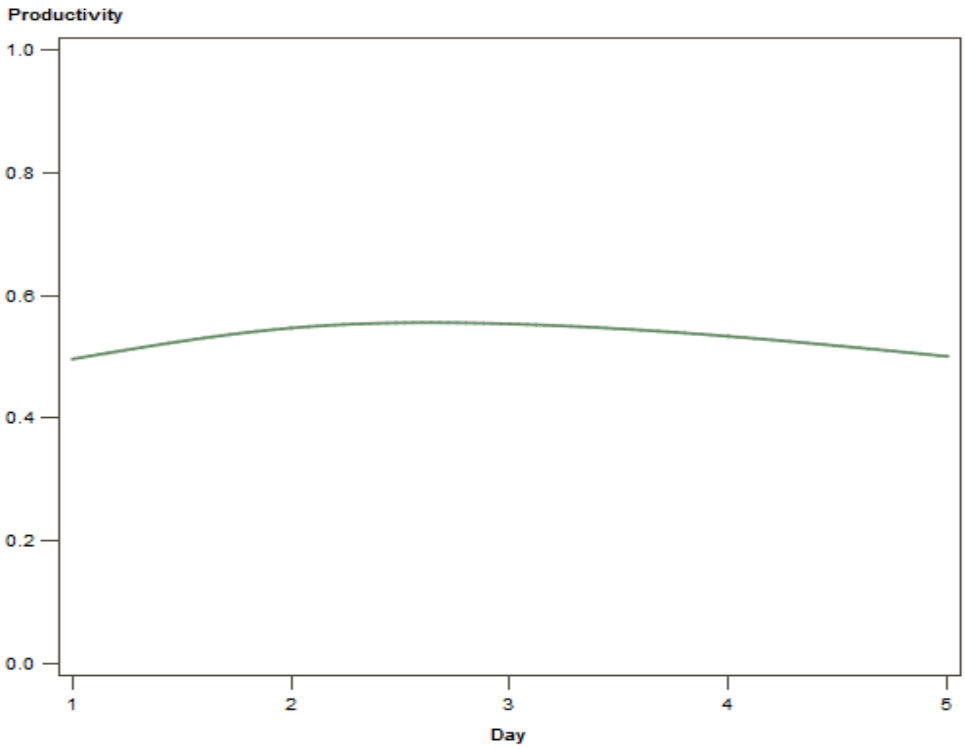

Figure 4. Change in self-reported productivity level on a daily basis

Figure 3 and figure 4 also show that arousal, pleasantness and self-reported productivity hardly change on a daily basis. Although there appears to be some change in arousal and pleasantness in the last few days as seen in figure 3, the difference between the

highest and lowest level is less than one interval apart. Consequently, self-reported productivity, arousal and pleasantness appear to remain somewhat steady over a weekly and daily basis.

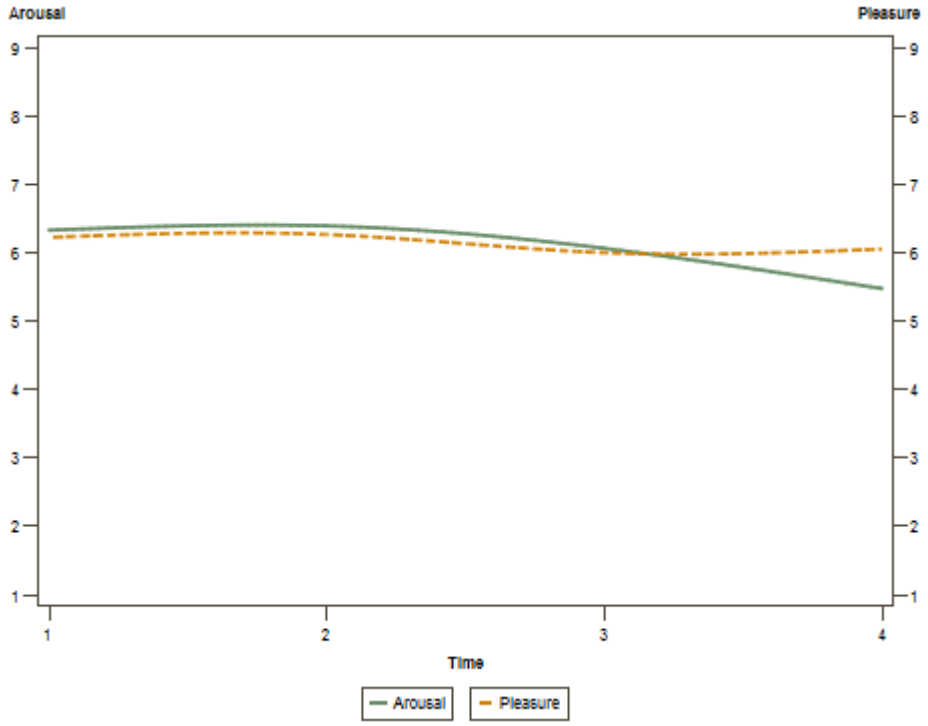

Figure 5. Change in emotions (arousal and pleasantness) throughout the day

* T1 = 10H00, *T2* = 12H00, T3 = 16H00, *T4* = 19H00

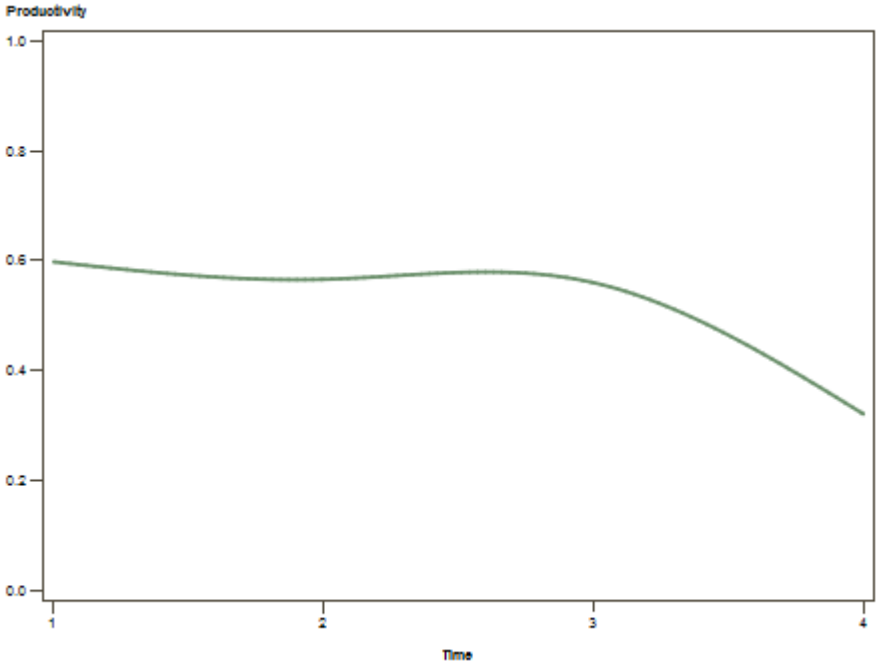

Figure 6. Change in self-reported productivity level throughout the day

* T1 = 10H00, *T2* = 12H00, T3 = 16H00, *T4* = 19H00

Figure 5 shows that arousal and pleasantness levels appear to stay somewhat the same throughout the day. Similar to Figure 3, even though arousal appears to decrease slightly towards the end of the day, the difference is also within a small range. The same can be said with pleasantness where a slight increase is observed as seen on the daily graph. The self-reported productivity level on the other hand appears to significantly decrease towards the end of the day as shown in figure 6. But this measure was taken after working hours and is therefore to be expected.

4.5.2. Is there a pattern in the relationship between emotions and self-reported productivity over time?

After considering the relationships between emotions and self-reported productivity, this relationship was re-examined longitudinally or over time as an attempt to identify patterns. Thus, correlations were used to measure the relationship at the different times of the day separately rather than looking at the overall relationship which was done in the earlier section. Considering that there was a more visible change throughout the day, as shown in figures 5 and 6, this relationship is therefore only re-examined using this time frame. Results for this analysis are shown in table 7.

Table 7 shows how the relationship between self-reported productivity and emotions change throughout the day. This analysis is not the same as that in figure 4 and figure 5. Results from figures 4 and 5 show how each of the arousal, pleasantness and self-reported productivity constructs individually change throughout the day. Table 7, on the other hand, shows how the relationship between arousal and self-reported productivity and pleasantness and self-reported productivity change throughout the day.

Table 7. Relationship between self-reported productivity and arousal and self-reported productivity and pleasantness throughout the day.

Variable	Time	Estimate	DF	*F*-value	*P*-value
Arousal*Time			1072	4.24	.006*
Arousal	10H00	.03	274	-430	<.0001*
Arousal	12H00	.03	48	19.70	<.0001*
Arousal	16H00	.004	204	-0.41	.69
Arousal	19H00	.001	170	.20	.85
Pleasantness*Time			1072	5.05	.002*
Pleasantness	10H00	.02	274	3.04	.003*
Pleasantness	12H00	.02	291	2.45	.02*
Pleasantness	16H00	.008	204	.80	.42
Pleasantness	19H00	-.02	170	-1.61	.11

*p<.05

As tabulated, the relationship between both emotion constructs and self-reported productivity significantly changes throughout the day. The strength of the relationship between arousal and self-reported productivity decreases as the day proceeds. Further, the relationship between arousal and self-reported productivity was only significant at 10H00 and 12H00.

In terms of the relationship between pleasantness and self-reported productivity, similar results are found. The relationship between pleasantness and self-reported productivity also changes throughout the day. From 10H00 to 16H00, there is a decrease in the strength of the relationship while at 19H00 there appears once again to be an increase but in the opposite direction. Again, only a significant relationship was found at 10H00 and 12H00 between pleasantness and self-reported productivity.

It is important to note that the degrees of freedom differ for each finding because not all participants filled in all questionnaires, thus the response rate at each time is different.

Thus, similar findings were found between both emotions constructs and self-reported productivity. Both relationships significantly changed throughout the day. However, only at 10H00 and 12H00 was arousal and self-reported productivity and pleasantness and self-reported productivity the strongest and significantly related to one another.

4.5.3. Re-examining the relationship between emotions and self-reported productivity at 10H00 and 12H00

Subsequent to only finding significant relationships between the two emotion constructs and self-reported productivity at 10H00 and 12H00, it makes sense to re-examine these relationships within the context of these two times. By doing so, effects at 16H00 and 19H00 would be excluded from the interaction. Consequently, the overall relationship between arousal and self-reported productivity as well as pleasantness and self-reported productivity was tested at 10H00 and 12H00. The interaction between time and arousal and time and pleasantness was also tested in relation to self-reported productivity. Results for these re-examined relationships can be found in table 8.

Table 8. Relationship between emotions and self-reported productivity at 10H00 and 12H00 only

Variable	**Estimate**	**DF**	***F*-value**	***P*-value**
Arousal	.03	614	5.54	*<.0001
Pleasantness	.02	614	4.03	*<.0001
Arousal*Time	.001	613	.14	.89
Pleasantness*Time	.003	613	.33	.74

*$p < 0.05$

As seen in table 8, a significant relationship can still be found between arousal and self-reported productivity (F_{614}= 5.54; p<.0001). Here, a significant relationship is also found between pleasantness and self-reported productivity, which was previously found to be insignificant (F_{1075}= 3.76; p=.05) when 16H00 and 19H00 questionnaires were included.

4.6. Summary

The following results were found in this chapter:

Demographics in relation to emotions and self-reported productivity

- Individuals from different racial and marital status groups show a significant difference in levels of arousal, pleasantness and self-reported productivity.
- In addition, there is a significant difference in self-reported productivity levels between males and females.

Emotions in relation to reported events

- There is no significant difference in the emotional and self-reported productivity levels between those who do and don't relate these factors to some event.

Emotions in relation to self-reported productivity

- The significant relationship found between arousal and self-reported productivity is positive but weak.
- A positive but weak relationship was found between pleasantness and self-reported productivity.
- There is an almost significant relationship between self-reported productivity and the interaction between arousal and pleasantness.
- There was a significant positive relationship between arousal and pleasantness. Thus, when excluding arousal from the analysis, a significantly strong positive relationship between pleasantness and self-reported productivity was found.

Emotions and self-reported productivity over time

- There is little change in both emotions constructs as well as self-reported productivity over the three weeks.
- Arousal, pleasantness and self-reported productivity hardly change on a daily basis.
- Arousal and pleasantness levels appear to stay somewhat the same throughout the day
- Self-reported productivity level on the other hand appears to significantly decrease towards the end of the day

- The strength of the relationship between arousal and self-reported productivity decreases as the day proceeds. The relationship between arousal and self-reported productivity was only significant at 10H00 and 12H00.
- The relationship between pleasantness and self-reported productivity also changes throughout the day. Again, only a significant relationship was found at 10H00 and 12H00 between pleasantness and self-reported productivity and not at 16H00 and 19H00.
- Both relationships between arousal and self-reported productivity and pleasantness and self-reported significantly changed throughout the day. However, only at 10H00 and 12H00 was arousal and self-reported productivity and pleasantness and self-reported productivity the strongest and significantly related to one another.
- When re-examining the relationship at 10H00 and 12H00 excluding the results at 16H00 and 19H00, a significant relationship can still be found between arousal and self-reported productivity. Here, a significant relationship is also found between pleasantness and self-reported productivity, which was previously found to be insignificant when 16H00 and 19H00 questionnaires were included.

Chapter 5
Discussion

5.1. Introduction

The previous chapters have addressed the literature on the topic of emotions and productivity in the workplace, the methodology used and a presentation of the results from the study. This chapter will discuss the results found in the study in relation to the literature on emotions and productivity. The discussion of the results will be presented under the research questions listed in the first chapter. Thereafter limitations of the study and recommendations for future research will be discussed.

5.2. Demographics in relation to emotions and self-reported productivity

There have been various significant results found in relation to arousal, pleasantness as well as self-reported productivity such as with age, race, marital status and different gender groups. Significant differences in levels of arousal, pleasantness and self-reported productivity was found between the different racial and marital status groups. In addition, there is also a difference in self-reported productivity between males and females. These findings may play an important role in understanding emotions and self-reported productivity in the workplace. However, these findings diverge from the main focus of the study yet are important for future researchers to expand upon.

5.3. Is there a relationship between reported events and emotions?

Moving onto the core of the research, in past studies researchers have strongly argued that what differentiates emotions from moods is the relationship to some sort of event (Staw & Barsade, 1993). Results from the current study have, however, found no relationship between emotions and the described events that may have attributed to the reported emotions as suggested by the model. Table 6 suggests that there is no difference in arousal, pleasantness and self-reported productivity level between those who reported a significant event and those who didn't. Consequently, results from the current study do not support the suggested association, by the AET model (Weiss & Cropanzano, 1996) as well as other research which

supports this hypothesis, between emotions and the proposed events which are attached to them (Ashkanasy et al., 2002; Staw & Barsade, 1993).

From one point of view, this result can be explained by there being no particularly interesting event reported on the days of data collection. Associated events (see appendix L) were nothing out of the ordinary. Examples of reported events include “I made some tea”, “Just got out of a meeting” and, “Developing concepts for ad campaigns”. In general, every day appeared to be a typical day at work. As such, because there is nothing particularly interesting happening at work, people may have found it difficult to associate the typical work events with their reported emotion and productivity levels.

Alternately, this finding may suggest that there is something unusual about the data. This is because many studies in the past have established and supported this relationship (Lord & Kanfer, 2002; Ashkanasy et al., 2002). A possible reason for this finding is because participants used diverse ways to describe the events and these events were in no way categorised. There may be various ways in which to categorise these events, one of which may to establish whether these events positively or negatively impacted on their reported emotion. It may have assisted the researcher to find out whether positive events are related to positive emotions and vice versa, as proposed by Lord and Kanfer (2002). This is also supported by the AET model which suggests that events are categorised according to hassles or uplifting events (Ashkanasy et al., 2002). This essentially denotes a positive or negative event.

5.4. Emotions and self-reported productivity

The main research questions of the current study will now be discussed. As mentioned in the results section, the examination of the relationship between emotions and self-reported productivity was divided into three parts. Thus, this chapter will follow a similar format discussing the results found in relation to existing literature.

5.4.1. Relationship between emotions (arousal and pleasantness) and self-reported productivity

Research questions to be addressed in this section:

- *Is there a relationship between arousal and self-reported productivity?*
- *Is there a relationship between pleasantness and self-reported productivity?*
- *Is there a relationship between the interaction between arousal and pleasantness and self-reported productivity?*

Results in the current study found a significant and positive relationship between arousal and self-reported productivity as well as between pleasantness and self-reported productivity (Table 3). However, the relationship between pleasantness and self-reported productivity was only found significant after a test for multicollinearity between arousal and pleasantness. Thus, arousal and pleasantness was found to be significantly related to each other in the current study.

According to the affective events theory (Weiss & Cropanzano, 1996) as well as the favourable outcome model, positive emotions lead to some increased behavioural or favourable outcome (Staw et al., 1994), such as productivity. This study therefore does support this hypothesis. Although a high and low score on the arousal dimension is not indicative of a positive emotion, a high pleasantness rating on the other hand can be interpreted as a positive emotion. As a result, the more pleasant a person feels the more productive they tend to be. Thus, a person who experiences more positive emotions could potentially lead to an increased level of the favourable outcome, which is productivity (Staw et al., 1994).

In relation to the happy-productive worker hypothesis, as previously mentioned, due to the confined representation of emotions in the traditional happy-productive hypothesis, pleasantness and arousal were used as measures of emotions rather than just happiness to test the hypothesis. Consequently, the current study considered the relationship between emotions (arousal and pleasantness) and self-reported productivity. However, only the relationship between pleasantness and self-reported productivity can specifically be used to compare and be applied to the suggested relationship in the model. This is because pleasantness is also more closely and/or directly associated with happiness than arousal. Consequently, with

pleasantness having a significant and positive relationship with self-reported productivity, the results from the current study can be seen to support the findings of Oswald et al. (2008) as well as the happy-productive worker hypothesis (Staw & Barsade, 1993) indicating that an increased level of happiness can raise productivity levels.

In addition, the correlation found between pleasantness and self-reported productivity was .62. This value is higher than the correlation value of .30 found in the study of Judge et al. (2001), which used job satisfaction and performance as the measuring constructs to test the happy productive worker hypothesis. This therefore indicates that, like many researchers have suggested, it is important to carefully clarify the meanings of concepts and constructs before using them as measures for constructs other than that of its own (George & Brief, 1992).

In terms of arousal, it has been found that a person tends to be more productive when they are feeling more emotionally aroused. This, therefore, supports the findings of Dickman (2002), even though there was no manipulation, where they also found a positive relationship between arousal and productivity. Dickman (2002) found that peak levels of productivity are largely motoric in nature. This finding also makes sense as the bipolar opposite of arousal is sleepiness. This finding seems reasonable because when a person is sleepy he/she is less likely to have the energy to do as much work as when they were more aroused. Again, it needs to be emphasised that neither high nor low emotional arousal is discretely indicative of a positive emotion. This is because the interpretation of a reported level of arousal is contextually influenced. For example, a person who is enthusiastic and a person who is furious can be equally aroused but the emotion of the enthusiastic individual would be considered as a positive emotion (Russel et al., 1989).

Looking at the relationship between self-reported productivity and the interaction between the two emotions constructs, emotions is not found to be related to self-reported productivity. Thus, when considering the emotion construct as a whole it does not support the findings of the AET model (Weiss & Cropanzano, 1996) as well as the positive emotion favourable outcome model (Staw et al., 1994). However, this can be explained by the significant relationship found between arousal and pleasantness. This is because when looking more specifically at each of the emotions constructs individually, pleasantness and arousal were both found to be significantly related to self-reported productivity which would

then support the AET (Weiss & Cropanzano, 1996), favourable outcome model (Staw et al., 1994) as well as the happy productive worker hypothesis (Staw & Barsade, 1993).

Thus, combining these results this can be seen as an indication that though pleasantness is important in understanding the relationship between emotions and self-reported productivity, arousal plays a more important role. This therefore also supports the view of Frijda (1999) who found that human behaviour is related not only to how pleasant people feel but also by their level of emotional arousal. In addition, it also supports Lucas and Diener's (2003) recommendation that emotions do play a more complicated role than only looking at happiness in relation to self-reported productivity. Russel et al. (1989) also suggested that arousal and pleasantness may be related in certain circumstances. Russel et al. (1989) states that although arousal and pleasantness are considered conceptually separate, they may at times be positively or negatively correlated depending on the circumstance in which it is used.

In addition, although arousal and pleasantness are theoretically different constructs, they are also in some ways related. Firstly, they both fall under the broader constructs of emotions and affect. Secondly, whether this relationship is positive or negative it is determined by the environment and task a person is exposed to. As previously mentioned, a person who is highly aroused does not necessarily indicate a sense of pleasantness or happiness. However, a positive relationship found here may be explained by the majority of responses in the current study reporting a high arousal level as well as a high pleasantness level and vice versa. Therefore, people would tend to either feel close to excited or depressed rather than calm or anxious as described by the affect grid (Russel et al., 1989).

In reality, however, it is important to note that although a positive relationship between arousal and pleasantness was found, it may not always necessarily be this accurate; sometimes they may be negatively related as well. This may also be the reason why there was an almost significant relationship found between pleasantness and self-reported productivity in the initial analysis. It may be because pleasantness and arousal are correlated. As such, people who feel emotionally aroused tend to feel more pleasant than those who are less aroused or tired and vice versa. Therefore, this somewhat supports Estes and Adelman's (2008) findings that emotional arousal and valence or pleasantness is consistently related as a significant relationship between arousal and pleasantness was found throughout the day.

5.5. Longitudinal results

Following the format in the results chapter, this section will start off discussing the longitudinal results by looking at the patterns of emotions and self-reported productivity over time followed by a more detailed discussion of the patterns in relationship between the two over time in terms of the HLM.

Research questions to be addressed in this section

- *Are there any changes or patterns of emotion over time?*
- *Are there any changes or patterns of self-reported productivity over time?*
- *Is there a pattern in the relationship between emotions and self-reported productivity over time?*

5.5.1. Patterns in emotions and self-reported productivity over time

As previously mentioned, it was Ashkanasy et al. (2002) that suggested the need to examine within subject effects. Thus, the change in emotions and self-reported productivity, as separate constructs, over time was also examined. Yet, it is worth noting that Ashkanasy et al. (2002) observed the within subject effects for emotions across days and not throughout the day. The current study, however, considered the change in emotions and self-reported productivity across weeks, days and throughout the day. The purpose of tracing these patterns over the different time periods is to get a broader picture of the trends and hone in to get a closer view of exactly where or when the variations took place.

From figures 1 to 4, it can be seen that there is little change in arousal, pleasantness and self-reported productivity across the weeks and days at work. Firstly, to look at the trend of how emotions and self-reported productivity level changes over a weekly basis, there appears to be no significant difference in arousal, pleasantness and self-reported productivity levels. In fact, all three constructs appear to be quite steady forming a somewhat straight line. This may be because the activities the employees are involved in appear to be somewhat routine. This can be supported by the events described in relation to each reported emotion being more general activities such as making tea or attending meetings (Refer to appendix L). A similar pattern was found across the different days of collection.

In terms of the change throughout the day, there were only slight changes - a slight decrease in level of arousal and self-reported productivity and also a slight fluctuation in pleasantness. Though this change is visible, the difference between the highest and lowest score is small. Furthermore, the difference between the times that are closer together is also small, e.g. the difference from 10H00 and 12H00 is just as small as the difference from 12H00 to 16H00 and from 16H00 to 19H00. This finding cannot give a clear indication of whether to support the results in the study of Ashkanasy et al. (2002) and Stone et al. (1999) where they found that emotions are susceptible to change on a moment to moment basis Even though arousal and pleasantness showed little change throughout the day, it does not imply that they are not susceptible to change. The slight deviation may be a result of a lack of stimulating or major events occurring.

The slow decrease found with arousal and self-reported productivity throughout the working day (Refer to figure 5 and 6) is also a reasonable finding as one can expect a person to become more tired after a days work and thus feel sleepier or tired towards the end of the day and also less productive. However, this decrease in arousal contradicts the findings of Dickman (2002) who found an increase in arousal throughout the day. This may be due to the absence of manipulation which was used in their study. On the other hand, the change in self-reported productivity level somewhat supports the findings of Dickman (2002). Dickman (2002) found that there was a "post lunch dip" in productivity levels. Though there was a decrease in self-reported productivity levels in the current study, it was only a slight change and cannot be classified as a "dip" or drastic change. This may be attributed to the last questionnaire being sent through at 19H00, when most people have already left work or the office and therefore feel more relaxed and less productive in terms of the tasks they have to complete.

Furthermore, when comparing the results found in the work of Stone et al. (1999) to the current study, much difference is found. It was expected that some fluctuation would occur across and throughout the days of data collection as found in the results of Stone et al.'s (1999). A possible reason for the difference in results between Stone et al. (1999) and the current study is that in their study, their sample was restricted to participants who were at management level. At management level, employees tend to become more involved with tasks that require flexible problem solving abilities. As such, they may often find themselves in stimulating yet challenging and more complex tasks. Results from participating in such

activities may motivate opportunities for arousal and self-reported productivity to change. The sample from the current study, however, consists of employees from various occupations and organisational levels, most of which are below management level. As such, they may be involved in less stimulating jobs and perhaps even somewhat routine tasks. Consequent to this, they may be less likely to experience an as dramatic change in emotions across and throughout the day(s).

On the other hand, the pleasantness dimension is found to decrease towards midday and then slightly increase again towards the end of the day (Refer to figure 5). Seeing that high pleasantness can be classified as a positive affective state or emotion, this finding therefore contradicts the results in the study of Egloff et al. (1995). Egloff et al. (1995) found that positive moods increase from morning to evening. Although results from the current study show that levels of pleasantness slightly decreases during the day and then increases again towards the end of the day, the pleasantness level at the end of the day is still lower than the level in the morning. As a result, a tentative explanation for this may be that employee starts off the day feeling moderately pleasant and as the day goes by s/he becomes more involved with their work and therefore becomes less concerned about how pleasant they are feeling. This may be because people generally take less notice of when things are going smoothly and are more attentive when something goes wrong or when something extraordinary occurs.

Towards the end of the day, employees may be looking forward to the end of the day, causing the rise. This anticipation may have led to the increased level of pleasantness. Though there is a slight variation in pleasantness experienced throughout the day, the change is also a small difference. Consequently, the above discussion with regards to Stone et al.'s (1999) finding is also applicable to the pleasantness dimension. People may tend to feel more pleasant when they are involved in more stimulating activities than those who are working with more routine tasks. This would however require further investigation in future research.

5.5.2. Is there a pattern in the relationship between emotions and self-reported productivity over time?

Looking at the AET model but in the work context, Ashkanasy et al. (2002) proposed the need to look at within people effects. This is because previous research has found a

relationship between emotions and productivity on a moment to moment basis but not over a period of time (Ashkanasy et al., 2002). This method also provides a unique approach to reconsider the happy-productive worker hypothesis. The happy-productive worker model was used as the basis for the current study. As previously mentioned, due to the confined representation of emotions in the traditional happy-productive hypothesis (Judge et al., 2001), pleasantness and arousal were used as measures of emotions rather than merely measures of happiness to test the hypothesis. Consequently, the current study considered the relationship between emotions (arousal and pleasantness) and self-reported productivity over time.

When looking at the happy-productive worker hypothesis longitudinally in terms of using emotional arousal and pleasantness, there appears to be a somewhat stable relationship across the three weeks and days. Yet when looking more closely, there appears to be some change in the relationship throughout the day. More specifically, the relationship between arousal and self-reported productivity and pleasantness and self-reported productivity becomes weaker towards the end of the day (Table 4). Results from table 4 show that only at 10H00 and 12H00 was the relationship between arousal and self-reported productivity and between pleasantness and self-reported productivity significantly related to each other. The relationship becomes insignificant at 16H00 and 19H00 for both relationships throughout the day. This finding is somewhat different to the results in the study of Ashkanasy et al. (2002), as they found that emotions and productivity was related on a moment to moment basis. This is because the relationship found at 10H00 and 12H00 links to the findings of Ashkanasy et al. (2002). However, the insignificant results at 16H00 and 19H00 do not support this finding. The reason for this may be that the response rates during these two times were lower than that at 10H00 and 12H00. Thus, it may have affected the sample size and in essence the significance of the results.

This confounding finding suggests that there may be certain conditions or aspects in the work environment that results in a significant relationship between the two emotion constructs and productivity during the morning. This particular facet is however missing during the afternoon and evening resulting in the insignificant relationship. Looking at some of the potential reasons for this finding, firstly, there was a generally low response rate for the last two questionnaires at 16H00 and 19H00. As a result, this would have affected the statistical power of the results found at these two times. The low response rate may be

attributed to the participants possibly having already left work or being ready to leave. As a result, how they are feeling emotionally would have little to do with how productive they are because they may not be doing any work, as it has already passed working hours. Secondly, employees may feel fresh in the morning which may assist them to work more productively (hence the positive relationship). As the day goes by, people may generally become tired yet there may still be a certain amount of work which need to be completed before they can leave the office. Therefore, although employees may be working productively they may not necessarily be feeling emotionally aroused. Alternately, towards the end of the day, though people are feeling tired they may also be feeling excited to go home. On the other hand, they may not be working productively because they are not necessarily concentrating as hard as earlier in the day as they are now looking forward to going home.

This result, however, is only based on the data from the current study. It is important to acknowledge that due to the unstable participation rate in the current study throughout the days of data collection, the strength and sufficiency of the data used. Therefore, if there was a greater participation rate especially at 16H00 and 19H00, a significant relationship may have been found and the results of the study would have been more compelling.

5.5.3. Re-examining the relationship between emotions and self-reported productivity at 10H00 and 12H00

Since the strongest relationship was found at 10H00 and 12H00, the relationship between emotions and self-reported productivity was re-examined at these times only. A significant and also slightly stronger relationship was found between arousal and pleasantness with self-reported productivity when excluding questionnaires completed at 16H00 and 19H00 (Table 7). This indicates that the relationship between emotions and self-reported productivity may have been significant should there be a higher response rate. This would therefore indicate that arousal and pleasantness can be used as predictors of self-reported productivity despite the insignificant relationship found in the afternoon and evening. Consequently, when only observing effects at 10H00 and 12H00, results support the happy-productive worker hypothesis because here, pleasantness is significantly related to self-reported productivity.

5.6. Summary

In summary, the main results in the current study can be said to somewhat support previous findings of the happy-productive worker hypothesis where a happier worker can be described as more productive (Staw & Barsade, 1993). However, due to low response rates at 16H00 and 19H00, the relationship between emotions and self-reported productivity was only significant at 10H00 and 12H00. Nevertheless, this indicates that the relationship does change throughout the day. However, it is important to note that pleasantness was only found to be significant in the absence of emotional arousal. Yet, arousal was significantly related to self-reported productivity alone as well as in the interaction with pleasantness. This indicates that arousal plays a key role in determining perceptions of productivity.

Chapter 6
Limitations and implications for future research

As with any research there are always limitations. Acknowledging these limitations will allow for future researchers who are interested in the field to develop on these areas and possibly make improvements. Even though some of the problems were beyond the control of the researcher, future researchers should make provision for the potential of a reoccurrence of the same problems. Furthermore, they can plan on how to deal with them more efficiently when they arise.

- The first limitation of the study is that the sample is skewed and biased in terms of the various demographic variables such as age and racial groups. In any given study, it is ideal to have a normal data set. As such, results achieved from this data have limited the generalisability to represent the population.

- Secondly, the sample size is rather small and skewed. This would also impact on the power of the statistic or results and its applicability to other contexts. It would therefore be beneficial for the quality of future studies to gather a larger and more representative sample. This may revive the assumption of normality of the data and also allow the results of the study to be more widely applicable to other contexts, which in essence will enhance the ecological validity of the study. Having said that, the results found in the study may be slightly weak but nevertheless still usable.

- In terms of data collection, various problems were unfortunately encountered during this period, mainly due to technical difficulties that were experienced with the Survey Monkey server. Some of these difficulties included questionnaires that didn't go through, arriving late at the recipient and excluding participants from email list. Despite the attempts to compromise the problems experienced, response rates nevertheless fluctuated throughout the period of data collection.

  To compensate for the problems experienced, various other measures were used in an attempt to prevent potentially more serious issues from occurring. Some of the efforts made to overcome these barriers include extending the days of data collection,

keeping a closer eye to see if scheduled questionnaires were sent out punctually and frequently following up with participants on their progress and seeing into the problems that they had. Despite the attempts to make up for problems, some of the issues were beyond the control of the researcher. Thus, future researchers who wish to replicate this study should be aware of these difficulties which can potentially occur and make precautions to deal with such issues should they occur.

- Since questionnaires were sent out at 16H00 and 19H00, this appeared to problematic in terms of response rate. This is because some participants were likely to have left work already. Lowered response rates also would have decreased the power of the results as well as the patterns found. Therefore, future research should be more cautious about when to schedule questionnaires to minimise the risk of a decrease in responses.

- Lastly, the affect grid and productivity measure may have been slightly less reliable than a multiple item questionnaire. Although these measures were selected to accommodate the longitudinal nature of the study, the reliability of the measure is still questionable. This is however not to say that the measures used did not measure what was intended to measure. It is rather a suggestion for future researchers to consider a development of a multiple item measure that will also be suitable to use for a longitudinal study.

Chapter 7
Conclusion

Though the importance of emotions in the workplace has in the past been underestimated and has only gained prominence in the late twentieth century, the current study has again supported the notion that emotions cannot be isolated from an organisational environment. As in many theories and models, emotions have been suggested to be related to various organisational behavioural outcomes. Yet in the current study, self-reported productivity has specifically been considered. The choice to assess this behavioural outcome was inspired by the AET and happy productive worker hypothesis. However, only using happiness to understand an individual's self-reported productivity level appeared to be rather limiting. Thus, the current study aimed to better understand this relationship by expanding the emotional construct through the use of emotional arousal and pleasantness as measures of this construct.

A significant relationship was found between emotional arousal and self-reported productivity as well as between emotional pleasantness and self-reported productivity. However, when considering the relationship between arousal and self-reported productivity and pleasantness and self-reported productivity simultaneously, only a significant relationship was found between arousal and self-reported productivity. Yet, when assessed individually, a significant relationship was also found between the pleasantness and self-reported productivity. However, the relationship between pleasantness is related to self-reported productivity is only significant in the absence of arousal. Thus, this is an indication that arousal is key to understanding emotions in relation to self-reported productivity in the workplace. Nevertheless, it can be concluded that the more aroused an individual is feeling the more productive s/he tends to be. Similarly, the more pleasant a person feels the more likely s/he is to be productive. Therefore, the current study can be seen to support the happy productive worker hypothesis, as happiness is more closely related to pleasantness (Staw & Barsade, 1993). This may also suggest that people who experience positive emotions tend to be more productive than those who experience negative emotions, which supports the employee positive emotion favourable outcome model (Staw et al., 1994). However, this is only based on the significant relationship between pleasantness and self-reported productivity as high or low arousal is not specifically indicative for positive or negative emotions because it is highly contextually determined.

Furthermore, a unique aspect of the current study was to assess potential patterns in the relationship between emotions and self-reported productivity through the use of a repeated measures design. The relationship did change depending on the time of day with only the 10H00 and 12H00 time periods producing significant results.

The patterns for the two emotional constructs as well as self-reported productivity were also measured and it was found that there was little change or deviation in the level of emotional arousal and pleasantness. This may be attributed to the lack of stimulating events which occurred in the workplace. Although no significant relationship was found between reported events and emotions, a large amount of studies in the past have suggested otherwise. Nevertheless, referring back to the patterns in change of emotional arousal, pleasantness and self-reported productivity, arousal and self-reported productivity slightly decreased towards the end of the day, which can be expected as individuals become more tired towards the end of a days work thus resulting in a decreased level of arousal and self-reported productivity. On the other hand, pleasantness was seen to slightly increase which may be explained by individuals looking forward to going home.

Consequently, the current study has built upon existing literature on the role of emotions in the workplace by examining the happy productive worker hypothesis through the expansion of the happiness construct. However, there were various methodological shortcomings were encountered. These can be used to prompt future researchers of such issues and to assist them to provide better insight into this field of research.

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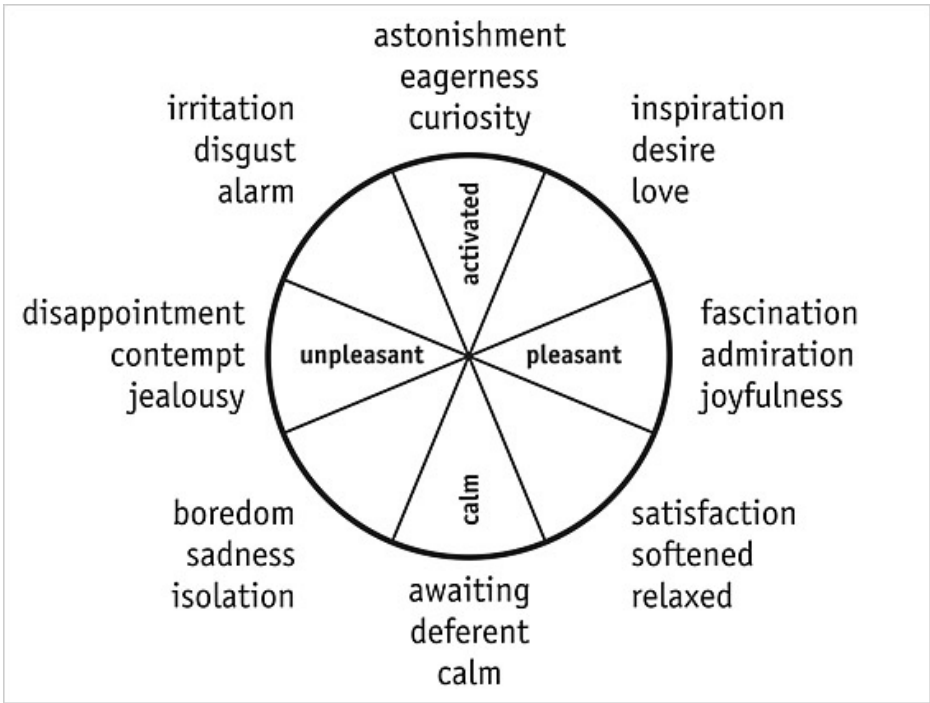
Appendices

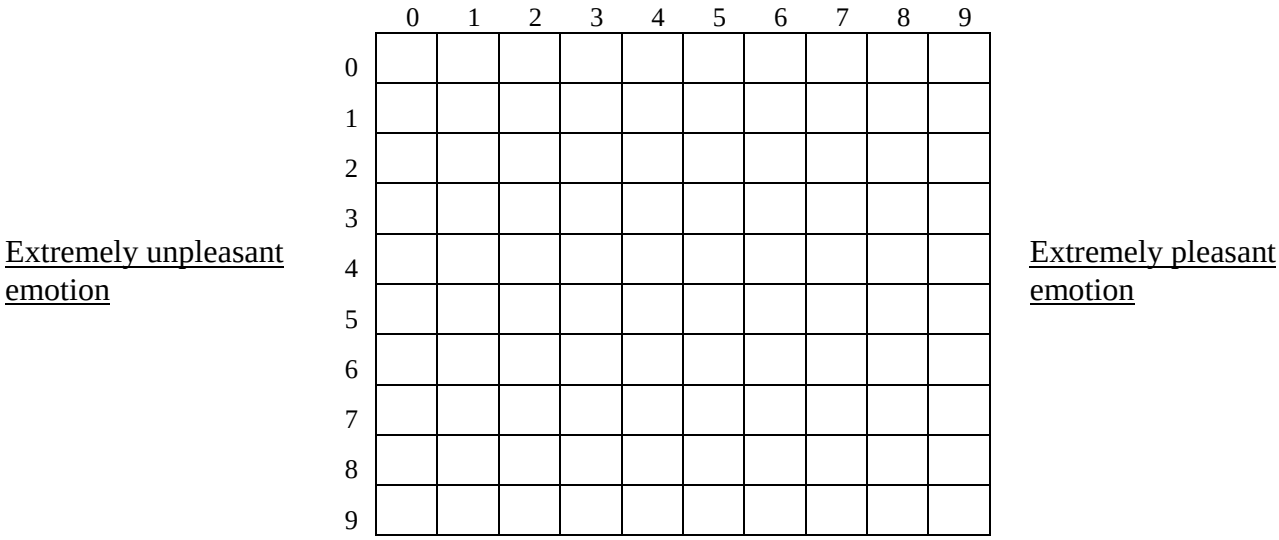
Appendix A: Affect circumplex



Larsen and Diener, (1992).

Appendix B: Affect grid

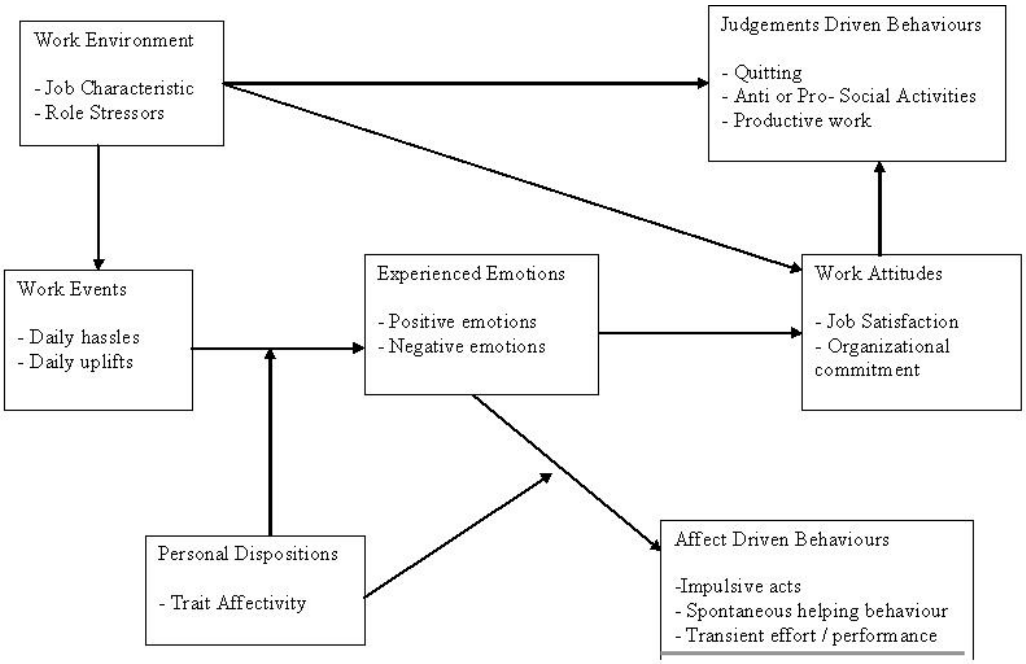
Extremely high arousal



Extreme sleepiness

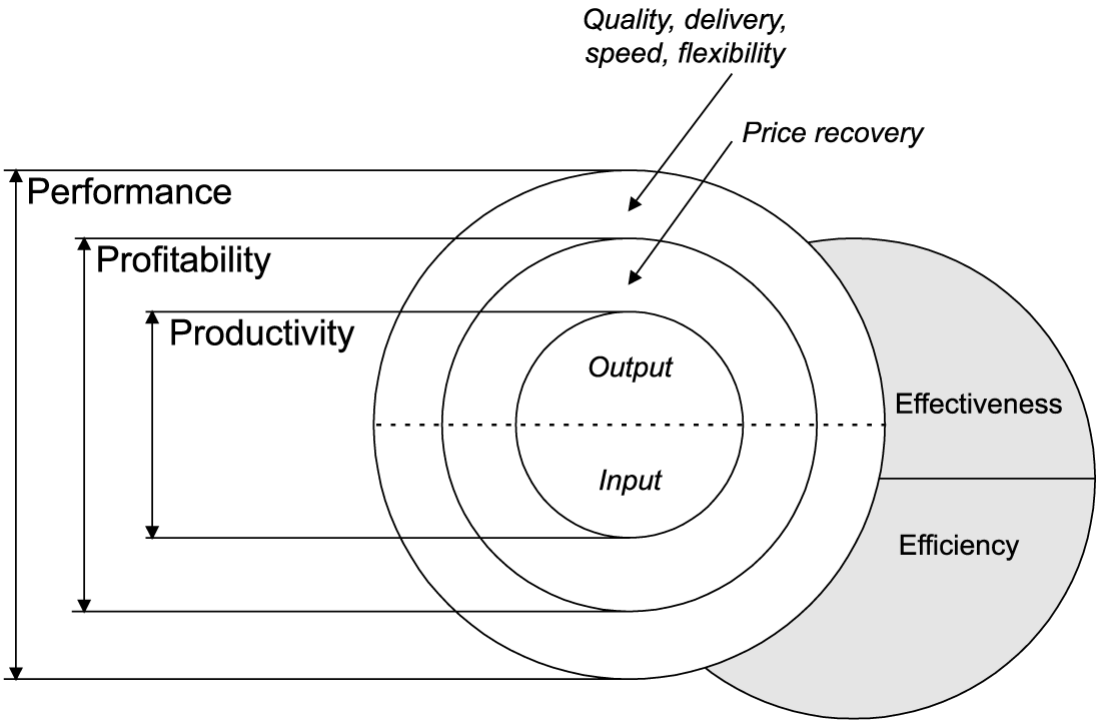
Russel, Weiss and Mendelsohn, (1989).

Appendix C: Affective events theory model



Weiss and Cropanzano, (1996).

Appendix D: Triple P model



Tangen, (2004).

Appendix E: Biographical questionnaire

By completing this questionnaire I consent to participating in a study of emotions in relation to self-reported productivity by Moranda Lam. I understand that:

• Participation is voluntary.

• No information that may identify me will be included in the research report, and my responses will remain confidential.

PLEASE ANSWER ALL THE QUESTIONS: Details are required for descriptive purposes only and anonymity is guaranteed.

1. Age ☐

2. Gender male/ female

3. What race are you?

_____

4. What is your home language?

_____

5. What is your current marital status?

_____

6. Do you have children? If Yes, how many?

_____

7. What is your highest level of education?

☐ Grade 10- Grade 11 ☐ Matric ☐ Diploma ☐ Degree

Other (specify):

_____

8. What is your occupation?

_____

9. At what position are you working at?

_____

Appendix F: Questionnaire 1

Please fill in the following questionnaire and return responses as soon as possible.

Date: _____

Time: _____

1) Are you at work

   Yes/ No

2) How many hours sleep did you get last night?

< 8 hours 6-8 hours 4-6 hours < 6 hours

3) How are you feeling emotionally?
   Using the Affect Grid, please mark relevant grid.

4) Has anything happened in the last 24 hours that may have affected how you are feeling?

   Yes/No

5) If yes, please specify briefly

_____

_____

Appendix G: Questionnaire 2

Please fill in the following questionnaire and return responses as soon as possible.

Date: _____

Time: _____

1) How are you feeling emotionally?

   Using the Affect Grid, please mark relevant emotion.

2) Was there a particular event, person or object that contributed to the reported emotion?

   _____

3) Has anything happened since the last time you completed a questionnaire that may have affected your emotion?

   Yes/ No

   If yes, please specify:

   _____

4) How tired are you?

☐ extremely ☐ fairly ☐ not tired ☐ energetic

5) Please describe briefly what you were doing just before you completed the questionnaire?

_____

Appendix H: Questionnaire 3

Please fill in the following questionnaire and return responses as soon as possible.

Date: _____

Time: _____

1) Are you working?

Yes/ No

2) How tired are you?

☐ extremely ☐ fairly ☐ not tired ☐ energetic

3) Has anything happened since the last time you completed a questionnaire that may have affected your emotion?

Yes/ No

If yes, please specify:

_____

4) How are you feeling emotionally?

Using the Affect Grid, please mark relevant emotion.

5) Was there a particular event, person, object or any other aspect of work that contributed to the reported emotion?

_____

6) On a scale of 0-100 percent rate how well you have been working today in relation to your full capacity.-

_____

7) Was there a particular event, person, object or any other aspect of work that contributed to the reported productivity level?

_____

_____

Appendix I: Questionnaire 4

Please fill in the following questionnaire and return responses as soon as possible.

1) Are you working now? Yes/ No

2) How are you feeling emotionally now?
   Using the Affect Grid, please mark relevant emotion.

3) Please specify briefly a particular event, person, object that may be attributed to the reported emotion since the last time you completed the questionnaire?

   _____

   _____

4) Are you displaying this emotion to others? Yes/No

   If not, please specify the relevant emotions you are exhibiting using the second affect grid.

5) How busy are you in relation to the work you bought home?

   Not busy ☐ Fairly busy ☐ Busy ☐ Extremely busy ☐

   Overloaded ☐

6) On a scale of 0-100 percent, rate how well you have been working in relation to the work you bought home?

   _____

7) Please specify a particular event, person or object that may be attributed to the reported productivity level?

_____

_____

8) On a scale of 0-100 percent, rate how well you have been working today in relation to your full capacity?

_____

Appendix J: Data collection schedule

	Day	Time 1	Time 2	Time 3	Time 4
Week 1	Mon	10H00	12H00	16H00	19H00
	Wed	10H00	12H00	16H00	19H00
	Fri	10H00	12H00	16H00	19H00
Week 2	Tues	10H00	12H00	16H00	19H00
	Thurs	10H00	12H00	16H00	19H00
Week 3	Mon	10H00	12H00	16H00	19H00
	Wed	10H00	12H00	16H00	19H00
	Fri	10H00	12H00	16H00	19H00

Appendix K: Participant information sheet

SCHOOL OF HUMAN & COMMUNITY DEVELOPMENT
UNIVERSITY OF THE WITWATERSRAND
Private Bag 3, WITS, 2050
Tel: (011) 717 4500 Fax: (011) 717 4559

Dear Sir/Madam

My name is Moranda Lam, and I am conducting research for the purposes of obtaining a Masters degree at the University of the Witwatersrand. The focus of my study is on the relationship between emotions and self-reported productivity.

In the past the importance of emotions has been underestimated in the workplace. However towards the end of the twentieth century, researcher became increasingly interested in its role. As a result more and more theorists began to establish relationships between aspects of emotions and behavioural outcomes. One of the more important outcomes they looked at was productivity, which is also of interest in this study. There have been studies which suggest that a happy worker is a productive one as well as a productive worker being a happy employee. However this research, does not aim to prove these findings, instead the objective of this study is to examine whether emotions and productivity have an impact on each other over time.

This study is a great opportunity to understand processes that we all experience in our daily lives that most people may not be aware of. Given this, I would like to invite you to participate in this research study to examine the role of emotions in the workplace. Criteria for participants are working adults who have regular access to e-mail.

Participation in this research will require you to have immediate access to email. A number of questionnaires will be sent through to each participant at specified times. Responses will need to be as immediate as possible because the aim is to measure the emotion being felt at the moment. Each questionnaire will take no longer than five minutes to complete. The study will be conducted over a period of three weeks, at various intervals. Participation in this study is completely voluntary. No one will be advantaged or disadvantaged in any way

should they choose to complete the questionnaire or not. No identifying information such as the name, ID number or place of work is required, hence anonymity is guaranteed. This research is not intended to investigate any specific individuals or organisations, but rather to establish general patterns of emotions at work. In addition, the completed questionnaires will only be seen by me and my supervisor, and responses will be kept confidential.

If you fulfil the criteria for participation in this study and are willing to participate please complete the following questionnaire. Completion of the questionnaire will be regarded as consent to participate in the study. Participants will be allocated a reference number on return of the first set of questionnaires. Reference numbers will need to be stated on questionnaires. All identification will be through reference numbers to ensure anonymity. Completed questionnaires will be placed in a box in your organization. Feedback on the study will be made available for any participant that requests it, in the form of a one page summary.

Your participation in this study would be greatly appreciated. Should you have any queries, please do not hesitate to contact either myself, or my supervisor, Karen Milner.

Kind Regards
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Appendix L: Example of events in relation to reported emotions (first 100 responses)

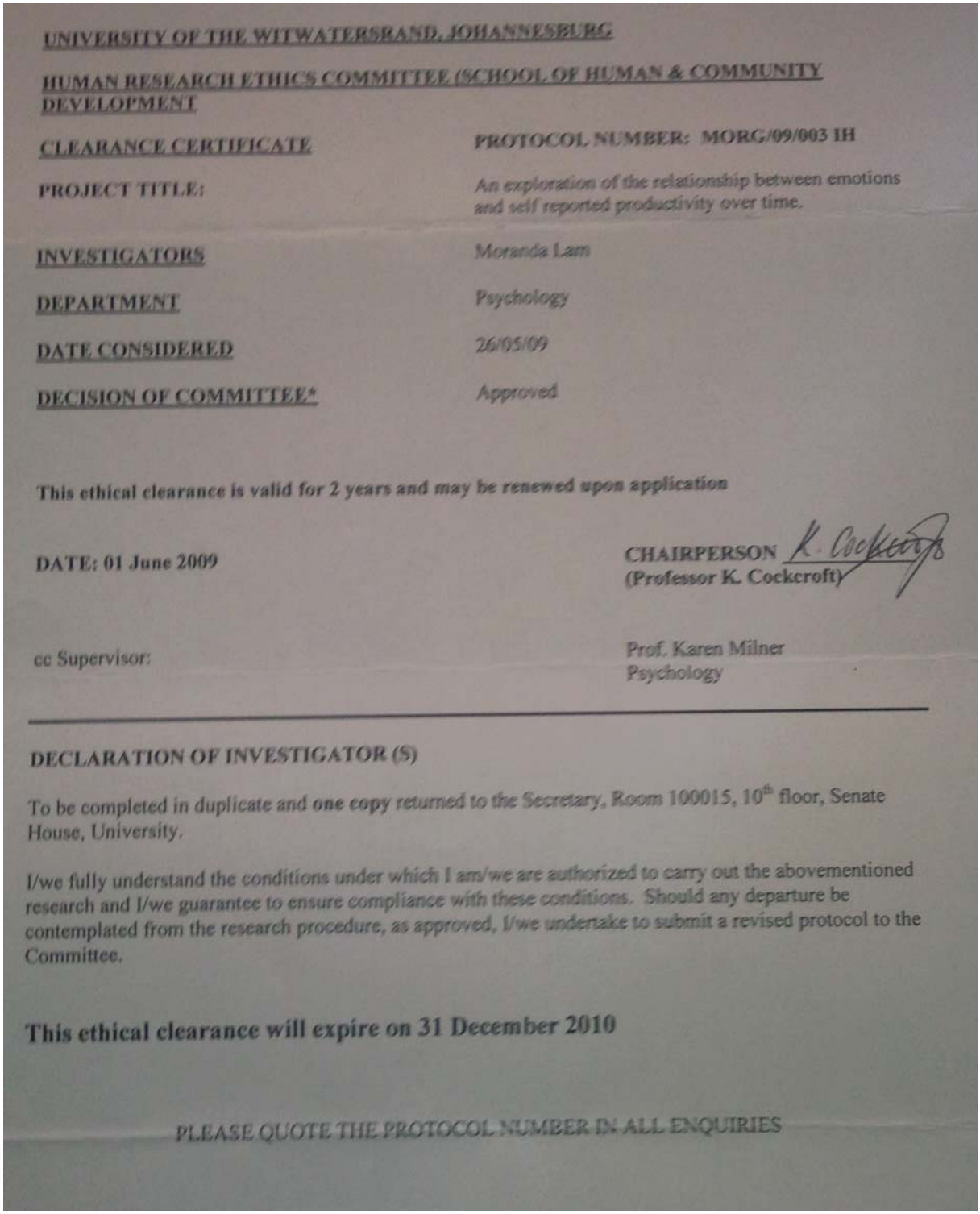
- I have been running around solving and assisting teachers' problems with their internet.
- I was assisting a teacher with internet connection onto our server for security.
- I took an old computer apart.
- The teachers and reception desk is capturing marks for the term end reports.
- Been monitoring the teachers printing the marks.
- I just been installing software on the music computer.
- Was suppose to have a meeting with the security company to discuss the cctv system but they did not arrive.
- I was taking this big server cabinet apart and helping a lady with her computer.
- Forgot my student card at home and need it today. When I think about it, it dampens my mood.
- Nothing much.
- Discover its better doing something yourself, instead of depending on others.
- Nothing in particular.
- None.
- Access card to office was blocked.
- None.
- Fire drill at 10 this morning.
- None.
- Bank rejected my credit card application.
- Nothing in particular.
- Mainly the same client, briefing all their campaigns late. It's just not acceptable.
- Had a meeting with client to discuss a possible radio sponsorship as well as finalise a print campaign.
- It's just been one of those days. Don't feel very productive at this stage although I have lots to do.
- It was quite a morning. Had to take public transport as my car is being repaired
- The shit has hit the fan. Client is unhappy about certain things and she has now copied my boss in on the email.
- Nothing significant. Slow morning.
- I attempted to find a different route to work. It didn't work.

- Stuck in traffic for longer than usual.
- No work what so ever. Relaxing.
- Lots of work. Boring work.
- Took a long time to wake up. Little jobs coming that I don't need with deadlines.
- I am not feeling 100% well today. No major significant events occurred.
- No significant events occurred.
- None.
- None.
- None.
- I heard that there is a production problem that my colleague could not attend to, so I had to help.
- I had to take another route to work as the construction on the road caused too much traffic.
- Breakfast with my colleagues was cancelled because my pregnant colleague was having pains.
- Had a meeting where I got a bit of recognition for work I was doing. Had morning tea.
- Took a different route to work because of the traffic lights were out at Wemmer Pan.
- Had a meeting without my team mates so I had to talk on their behalf. Had morning tea.
- Traffic to work was awful. Had a daily progress meeting.
- Had a progress meeting. Been getting a lot of queries.
- I feel frustrated and irritated with my co-workers.
- I had an argument with my boyfriend.
- It was my boyfriend's birthday. I woke up and made him breakfast in bed at 4 am, he was not very enthusiastic.
- Have to finish drawings that weren't done yesterday.
- Had to go out to site and check some things.
- Did not go to work. Took the day off to go to Decorex.
- Not anything I can recall. It was a normal day, everything went well and timing was perfect
- Nothing significant happened this morning. A usual morning.
- We went to watch a video that informed us about the latest happening in the company and it was very boring.
- I was late for work, overslept so I have lots of work to do and e-mails to respond to.
- Haven't been at work for the pass two days and not feeling well so I'm tired and sleepy.
- Not much happening.

- Not much. I was just late for work.
- Was called by a music/arts promoter for a Heritage Day gig for my band; called a Departments of Arts
- Just woke up.
- Scheduled a meeting.
- I'm at a new job so trying to organize catch phrases and names for a new product.
- We are moving to a new building at the place I'm working at, on Friday morning.
- I've come to work, I arrived later than usual. It's a quieter start to the day, which is a really good thing.
- I am busy proof reading my company's new book.
- Had a chat with friends and were sharing some work experiences.
- I was conducting research, and made a few phone calls for personal follow-up.
- I am finishing up my on-line research.
- None. Was completing some work.
- None. I was working.
- I was concentrated on my work.
- Completing my last bit of work.
- My supervisor had requested me to follow up on certain issues.
- Meeting with Nashua.
- Went to meeting.
- I worked till 9. Just came back from a client visit. It went alright.
- I am still searching for positions that I need this weekend and have come up short thus far.
- I ate breakfast!:) Work, going alright at the moment, got a steady flow of what I should be doing.
- Nothing much. I came to work and worked.
- Nothing much. Had an interview.
- I have had an interview. And I just found out that this is the last week of the Survey! Haha. Jokes.
- I took my car to get it serviced.
- Woke up on time...
- Nothing to speak of.
- Dispute with co-worker over something trivial.

- Work as usual.
- Nothing special.
- Received a sad mail regarding the death of an old friend.
- I interviewed two excellent candidates and invoiced a client for a really nice placement.
- Interviewed a good calibre candidate and then had a good client visit.
- A client has come back to me with a good offer and my candidate has verbally accepted.
- Another offer pending for a secretarial placement.
- I went to visit a client and had a really good reception.
- Nothing really. I have been phoning clients and following up on information I sent them.
- Nothing significant really. I am calling candidates and following up on their interviews and CVs.
- Very stressed as the manger and seniors are coming to review.
- Started working earlier and accomplished a lot.
- None.
- None.
- None.
- The deadline is today.
- Water out so had to shower at gym. Had to stop by new house to get painting going

Appendix M: Ethics clearance certificate



UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

HUMAN RESEARCH ETHICS COMMITTEE (SCHOOL OF HUMAN & COMMUNITY DEVELOPMENT

CLEARANCE CERTIFICATE	PROTOCOL NUMBER: MORG/09/003 IH
PROJECT TITLE:	An exploration of the relationship between emotions and self reported productivity over time.
INVESTIGATORS	Moranda Lam
DEPARTMENT	Psychology
DATE CONSIDERED	26/05/09
DECISION OF COMMITTEE*	Approved

This ethical clearance is valid for 2 years and may be renewed upon application

DATE: 01 June 2009

CHAIRPERSON K. Cockcroft
(Professor K. Cockcroft)

cc Supervisor: Prof. Karen Milner
Psychology

DECLARATION OF INVESTIGATOR (S)

To be completed in duplicate and **one copy** returned to the Secretary, Room 100015, 10th floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure be contemplated from the research procedure, as approved, I/we undertake to submit a revised protocol to the Committee.

This ethical clearance will expire on 31 December 2010

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES