Exploring emotion experiences and the regulation thereof within virtual teams in the information technology industry

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COMMENTS

The following remarks on the methodology are important beforehand:

- The editorial style as well as the references referred to in this mini-dissertation followed the format prescribed by the publication manual (6th ed.) of the American Psychological Association (APA). In addition, guidelines provided by the South African Journal of Industrial Psychology (SAJIP) were followed in writing the three chapters. This practice is aligned with the policy of the Programme in Industrial Psychology at the North-West University (Potchefstroom Campus) that all scientific documents use the APA style as from January 1999.

- Chapter 2 of this mini-dissertation is submitted in the form of a research article. The editorial style specified by the South African Journal of Industrial Psychology's (SAJIP) guidelines for qualitative research were followed, but the construction of tables was done according to the APA guidelines.

- Due to the richness of the findings, the discussion in chapter 2 is quite extensive. For the purpose of the research design, each theme is discussed in-depth to ensure the lived experiences is articulated clearly. The research findings will be divided into shorter articles before submission for publication.

DECLARATION

I, Maryke Fouché, hereby declare that this mini-dissertation entitled "Exploring emotion experiences and the regulation thereof within virtual teams in the information technology industry" is my own work and that the views and opinions expressed in this work are those of the author as well as the relevant literature references as shown in the references.

I further declare that the content of this research will not be handed in for any other qualification at any other tertiary institution.

M. Fouché

November 2016

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"Kommunikasie sonder fisiese teenwoordigheid is onmoontlik, alles vergroot en uit verband, omdat daar net woorde is, sonder gesigsuitdrukking of die aanraking van 'n hand." Ingrid Jonker in 'n brief aan André P. Brink in die 1960's.

I would like to recognise and thank the following:

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- All the other mentors and lecturers that have crossed my path, I am truly standing strong on the shoulders of giants.

DECLARATION OF LANGUAGE EDITING

WHOM IT MAY CONCERN

I hereby declare that I am a qualified Language Practitioner and obtained a Masters Artium degree in Language Practice at the University of the Free State in 2010.

I also declare that I edited the dissertation done by Ms M Fouchè during October 2016.

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SUMMARY

Topic: Exploring emotion experiences and the regulation thereof within virtual teams in the information technology industry

Keywords: virtual teams, emotion experiences, emotion regulation, affect and IT industry

The rise of globalisation with the introduction of technology into society and organisations in particular, has made it possible for modern day organisations to expand their services beyond the boundaries of the organisation, geographical location and time zones into the broader market place. These expansions necessitate the employment of virtual teams, which brings both skills and expertise together needed for specific project requirements. Virtual teams mainly collaborate through the use of technology mediated communication tools such as electronic mail and teleconferencing.

Organisations see them as beneficial to use especially in spheres that require intensive knowledge processing and design, such as software developing companies, which form part of the information technology industry. Although organisations see these teams as beneficial, numerous challenges are created when face–to-face interaction is replaced with technology mediated interaction. One such challenge could be the experience of emotions and the regulation of these emotions, as emotions intensify with virtual communication. Regulation of emotions also seems to suffer, as the non-verbal cues which enable emotion understanding are, as a matter of fact, missing. The objective of this research was thus to explore and describe the emotion experiences of virtual team members, as well as the emotion regulation thereof.

This phenomenological research followed a qualitative approach and made use of purposive sampling. The sample consisted out of eleven ($n = 11$) software engineers who form part of virtual teams employed in an IT organisation. Data gathering consisted out of semi-structured in- depth interviews, which was tape recorded, transcribed and analysed through thematic and content analysis. The findings included four emotion events namely, communication, team characteristics, job characteristics and work outcomes which had been identified. The findings yielded eight clusters of emotion experiences, which included frustration; impatience, irritation and anger; anxiety, nervousness, stress and caution; uncertainty, confusion and helplessness;

incompetence, inadequacy and embarrassment; disappointment, despondency and discouragement; relief, accomplishment and pride; and glad, happiness, satisfaction and surprise. Six emotion regulation strategies were found and were identified as cognitive change, attention reorientation, situation modification, response modulation, situation selection and learned behaviour. The emotion event themes aligned with three levels of functioning in an organisation, individual, group and organisational level, which could be related to certain outcomes of negative events in the virtual teams.

It is important to note that the study was not without limitations. The sample was not representative of the multicultural South African population and consequently no evidence for cultural and gender differences in emotion experiences and regulation could be provided. Furthermore, the teams in their entirety were not interviewed, and findings could also not be unified to the entire virtual team. It was possible to make various recommendations which emanated from the findings.

Future research could firstly make use of a larger, more diverse sample to inform quantitative hypotheses to confirm and validate these findings, in order to generalise the findings to virtual teams in the IT industry as a whole. Secondly, researchers could investigate ways in which individual virtual competence can be included in a competency model specifically designed for virtual teams. Thirdly, training programmes aimed at training virtual team leaders in emotion management and cross-cultural skills should be researched and developed. Lastly this research sparked interest into the continuation of exploring the effect the virtual team phenomenon have on members' emotions and emotion regulation.

OPSOMMING

Onderwerp: Verkenning van emosie-ervaringe en die regulering daarvan binne virtuele spanne in die inligtingstegnologie industrie

Sleutelwoorde: virtuele spanne, emosie-ervaringe, emosionele regulering, affek, en IT industrie

Die toename van globalisering, tesame met die bekendstelling van tegnologie in die samelewing en organisasies in besonder, het dit moontlik gemaak vir die hedendaagse organisasies om hul dienste uit te brei na die breër mark deur buite die grense van die organisasie, geografiese ligging en tydsones te kan werk. Hierdie uitbreidings het die gebruik van virtuele spanne genoodsaak, wat beide die vaardighede en kundigheid het wat nodig is vir die spesifieke behoeftes van sekere projekte. Virtuele spanne werk hoofsaaklik saam deur gebruik te maak van tegnologies-gemedieerde kommunikasie-instrumente soos elektroniese pos en telefoonkonferensies.

Organisasies ag hierdie spanne as voordelig, veral in gebiede wat intensiewe kennisverwerking en -ontwerp vereis, soos sagteware-ontwikkelingsmaatskappye, wat deel vorm van die inligtingstegnologie-industrie. Hoewel organisasies hierdie spanne as voordelig ag, is daar wel talle uitdagings wat geskep word wanneer aangesig tot aangesig interaksie vervang word met tegnologies-gemedieerde interaksie. Een so 'n uitdaging kan die ervaring van emosies en die regulering van hierdie emosies wees, omdat die ervaring van emosies meer intens word met virtuele kommunikasie. Die regulering van emosies blyk ook om in hierdie spanne te ly omdat die nie-verbale aanwysings wat emosie-begrip in staat stel, ontbreek. Die doel van hierdie navorsing is dus om die emosie-ervarings van virtuele spanlede asook die regulering daarvan te verken en te beskryf.

Hierdie fenomenologiese navorsing het 'n kwalitatiewe benadering gevolg en het gebruik gemaak van doelgerigte steekproeftrekking. Die steekproef het bestaan uit elf (n=11) sagteware- ingenieurs wat deel was van virtuele spanne wat in 'n IT-organisasie werk. Data-insameling het bestaan uit semi-gestruktureerde in-diepte onderhoude, wat opgeneem is op 'n bandopnemer, getranskribeer en geanaliseer is deur tematiese en inhoudsanalise. Die bevindinge sluit vier emosie-gebeure in naamlik kommunikasie, eienskappe van die span, werkseienskappe en werksuitkomste. Die bevindings het agt groepe emosie-ervarings opgelewer wat die volgende

insluit: frustrasie; ongeduld, irritasie en woede; angs, senuweeagtigheid, stres en versigtigheid; onsekerheid, verwarring en hulpeloosheid; onbevoegdheid, ontoereikendheid en verleentheid; teleurstelling, moedeloosheid en ontmoediging; verligting, vervulling en trots; en bly, gelukkig, tevredenheid en verrassing. Ses emosionele reguleringstrategieë is gevind en is geïdentifiseer as kognitiewe verandering, aandagheroriëntering, situasieverandering, reaksiemodulasie, situasieseleksie en aangeleerde gedrag. Die emosie-gebeure tema was teenwoordig op die drie vlakke van funksionering in 'n organisasie, nl. individuele vlak; groepvlak en organisatoriese vlak, wat ook kan verband hou met sekere uitkomste van negatiewe gebeure in die virtuele spanne.

Dit is belangrik om daarop te let dat die studie nie sonder beperkings is nie. Die steekproef is nie verteenwoordigend van die multikulturele Suid-Afrikaanse bevolking nie en gevolglik kon geen bewyse vir kulturele en geslagsverskille in emosie-ervarings en regulering voorsien word nie. Verder was die spanne in hul geheel nie deel van die onderhoude nie, en bevindinge kan dus moontlik nie verteenwoordigend wees van die hele virtuele span nie. Dit was moontlik om verskeie aanbevelings te maak wat uit die bevindinge gespruit het.

Toekomstige navorsing kan in die eerste plek gebruik maak van 'n groter, meer diverse steekproef om kwantitatiewe hipoteses in te lig om sodoende hierdie bevindings te bekragtig en te bevestig, en om hierdie bevindings tot virtuele spanne in die IT-bedryf as 'n geheel te veralgemeen. In die tweede plek kan navorsers maniere ondersoek waarop individuele virtuele bevoegdheid ingesluit kan word in 'n bevoegdheidsertifikaat model wat spesifiek ontwerp is vir virtuele spanne. Derdens moet opleidingsprogramme nagevors en ontwikkel word wat gemik is op die opleiding van virtuele spanleiers in emosie-bestuur en kruiskulturele vaardighede. Laastens het hierdie navorsing belangstelling gekweek in die voortsetting van die ondersoek van die effek wat die virtuele span verskynsel op die emosies van lede en die regulering van emosies het.

CHAPTER 1

INTRODUCTION

Introduction

This mini-dissertation focuses on exploring the emotion experiences amongst virtual team members in the information technology industry. The emotion regulation strategies these team members employ are also explored. This chapter consists out of a problem statement and a discussion of the research and specific objectives. Furthermore, the research approach and research design are explained. Following the latter is a summary of this chapter.

1.1. Problem statement

Since the introduction of technology to the business arena, a significant number of changes for the organisation followed. As a result of these changes, the global business arena has become flexible and unconfined, which led to organisations employing virtual teams (Meuthel, Gehrlein, & Hoegl, 2012; Peters & Manz, 2007; Soto, 2011). Virtual teams transcend traditional face-to- face communication strategies, as well as the boundaries of the organisation. This has brought a new phenomenon to the modern day business arena: doing business successfully across the borders of the country. In such a context, team members are likely to be from different backgrounds and cultures, which poses a challenge in terms of communication and reactions to the communication (Bergiel, Bergiel, & Balsmeier, 2008; Soto, 2011). More often than not, members will be situated in different countries across different time zones, which automatically creates a challenge in terms of meeting times. In comparison to normal face-to-face teams, virtual teams also need to work together towards a common goal without allowing time or dispersion to affect the achievement of this goal (DeOrtentiis, Summers, Ammeter, Douglas, & Ferris, 2013). The use of electronic mail (e-mail), telephone calls and video conferencing as communication tools (Schweitzer & Duxbury, 2010), may create a possibility for misunderstandings due to differences in emotion experiences (Byron & Baldridge, 2007; Chhay & Kleiner, 2013).

Barsade and Gibson (2012) demonstrated that emotions play an important role in normal face-to-face teams by influencing relational ties and contributing or inhibiting team development and effectiveness. Virtual teams may have social and emotional effects on the members, which may hinder performances of the team (Glikson & Erez, 2013). Johnson, Bettenhausen, and Gibbons

(2009) argued that technology, such as the internet or computers, may influence the affective state of members within the team, which will influence outcomes such as team member affective commitment and task effectiveness. Given the fact that virtual teams lack non-verbal cues that are available to face-to-face teams, it can be expected that members may experience affective events which will elicit more dynamic and complex emotion experiences among members with differing emotions (Ayoko, Konrad, & Boyle, 2012). Zofi (2012) additionally argued that challenges are magnified because non-verbal cues that enable emotion understanding are missing.

Boss and Sims (2008) stated that individuals will regulate their emotions to behave and respond in certain ways, given the type of emotional cue they pick up on. Regulation of emotions notably forms the most important approach in any given setting, because it directly determines the way in which one will respond, as well as one's behaviour. By regulating emotions, the individual may actually be altering the emotion experience to achieve a desired outcome (Lopes, Salovey, Cote, & Beers, 2005). If an individual is unable to count on body language and facial expressions to read a colleague's responses, detecting and resolving emotion experiences becomes more challenging. Furthermore, Cheshin, Rafaeli, and Bos (2011) showed that text based emotions affect the feelings of other virtual team members. The conclusion can thus be drawn that the rapid changes in the modern day business arena may have a serious effect on the functioning of virtual teams, as it will contribute to unique emotion experiences and other methods of processing or regulating such emotions and emotion experiences.

Conversely, research is still insufficient as to explore emotion experiences and the regulation thereof in virtual teams. Although extensive research has been done on the critical factors (e.g. virtuality of teams, configuration of teams, team membership complexity and cultural differences) pertaining to virtual teams (Gibson, Huang, Kirkman, and Shapiro, 2014; Maynard, Mathieu, Rapp, and Gilson, 2012; Schweitzer and Duxbury, 2010; Turel and Zhang, 2010), no single study exists that adequately explores the emotion experiences and regulation thereof in virtual teams. A few years ago, Bergiel et al. (2008) estimated that almost a quarter of a billion employees are already working on-line globally. This sudden increase makes it all the more important in today's business arena to study the emotion experiences and regulation thereof in

virtual teams. This may enhance one's understanding of affect in virtual teams which will possibly mitigate weaknesses in order to enhance team outputs (Maynard et al., 2012).

Emotion in the workplace can be an immediate cause for an employee's reactions, which will in turn affect the attitude and behaviour of this employee, as proposed by the affective events theory (Weiss & Cropanzano, 1996). The affective events theory argues for emotion events to be investigated in the workplace. This theory emphasises that events in the workplace influence distinctive emotion experiences, which in turn cause unique emotion reactions and regulations (Scherer, 2005) that can have subsequent outcomes. According to Sheppes, Scheibe, Suri, and Gross (2011), the emotion regulation choices individuals make in different emotional contexts, is an unanswered question. To accumulate a more progressive understanding of emotions, one has to gain the ability to correctly perceive facial expressions, as well as the tone of voice in others (Boss & Sims, 2008). However, this notion of Boss and Sims (2008) cannot be applied in the virtual team setting.

When given the nature of virtual teams and their geographical dispersion, it is seldom possible for these team members to perceive one another's facial expressions and emotions. One individual's discrete emotion may influence another's mood, which can be without any awareness of causality and can emerge in a more vague and undefined mood (Cheshin et al., 2011). In order for virtual teams to prosper in terms of productivity and cohesiveness, Ayoko and Callan (2010) suggested that emotion experiences need to be managed, but more importantly the emotional reactions members have towards these events. In addition to the experience of emotions, individuals also tend to express them to others (Van Kleef, Homan, & Chesin, 2012).

After a review of the literature by Van Kleef et al. (2012), it seems important to study the emotion experiences of employees and the regulation thereof when one considers the amount of time they spend at work. However, the theoretical framework to guide this research within the virtual team environment is still lacking. In an effort to gain understanding of the emotion experiences and regulation within a virtual team setting, this study explores the emotions these members experience, as well as how they manage or regulate these experiences. Taking into consideration the background of the problem, emotion experiences and emotion regulation is conceptualised according to the literature, as well as a review of virtual teams.

Emotion can be characterised as an affective state that stems from a specific stimulus. Present in every emotion experience is a subjective feeling that is of short duration which only exists due to a supporting elicitor, and will cease as soon as this elicitor has been eliminated (Russell, 2009). An emotion experience describes the intricate process of this emotion in response to a stimulator (Scherer, 2005). Scherer (2005) distinguished between several characteristics of an emotion experience. It is caused by an event which must be a major concern for the individual. The relevance of the event is determined by a complex and rapid evaluation process and different emotions can be produced by a sequence of increasing stimulus evaluations. When focussing on emotion and the regulation thereof, the work of (Gross, 1998, 2002; 2014) will be investigated.

The way in which one responds towards certain perceived challenges and opportunities causes emotions which are influenced by a series of behavioural, experiential and physiological response tendencies (Gross, 2002). The regulation of these responses, according to Gross (2002) is one of the many obstacles one has to overcome in life. When studying the regulation of emotions, one will find that it is the manner in which individuals influence the emotions they experience, when they occur and how they experience and express them (Gross, 1998). Gross (2002) progressed by stating that emotion regulation also comprises of changes in the way one's response components are reliant when the emotion unfolds. Boss and Sims (2008) stated that individuals will behave and respond in certain ways, given the type of emotional cue they pick up on. This research of Boss and Sims (2008), however, did not take into account that regulation of emotion experiences must also take place in settings like virtual teams where the emotion cues are not always readily available.

In the processing of emotional information, the regulation thereof forms notably the most important approach in any given social setting, because it directly determines the way in which one will respond, as well as one's behaviour (Boss & Sims, 2008). Manzoor and Treur (2013), in addition, stated that the way in which an individual's emotions are regulated, determines to a large extent the intensity of the development of emotions in an individual, and this may then be projected onto other individuals. For example, when an individual's emotions are successfully regulated, he/she may not find it difficult to keep a straight face in a given upsetting situation,

which will then hinder any contagion. When facing adversity or challenges, it is important for an individual to have flexible choices of emotion regulation strategies (Gross, 2014). Certain trials and tribulations in a day-to-day life may require individuals to regulate their emotions differently (Sheppes et al., 2011). Individuals may have an intuitive ability to regulate their emotions to fit these day-to-day circumstances (Gross, 2014). Yet, the typical tribulations and day-to-day circumstances that lead to emotion experiences in virtual teams are still unknown.

Baralou and Mcinnes (2013) argued that emotion has a fundamental part to play in the virtuality of relations, performing a temporal role in moving team members as they communicate interpersonal stances. Emotion can be an embodied communicative process that is associated with the unfolding social relations between an individual and others. Baralou and Mcinnes (2013) furthermore argued that the unique nature of a virtual team will most likely involve the rhetorical production of emotional experiences, because virtual communication can cause the interaction between members to be quite emotional.

Virtual teams are widely conceptualised and no preferred definition exists. Gibson, Gibbs, Stanko, Tesluk, and Cohen (2011) stated that one concrete concept that includes all conceptualisation exists, which is the degree of dependence team members have on electronic communication. Schweitzer and Duxbury (2010) stated that it is first of all still a team that works together with a common purpose in mind. This team should employ different forms of technological communication, like e-mail and video conferencing, and should be working in different locations, sometimes even in different time zones. Employees from different organisations may also be included in the specific team. Gibson et al. (2014) noted that electronic-based communication may aid group processes, because teams develop effective communication techniques. However, Johnson et al. (2009) found that a lack of social cues that create friendships at work negatively affect the team member's attachment to the team, which might be a concern for the organisation in terms of absenteeism. These team members may also experience lower levels of positive moods and affective commitment. Even though virtual teams may contribute to a rise in productivity, organisations still struggle to harness their full potential and Ayoko, et al. (2012) felt that this may be ascribed to an inability to effectively manage the behaviours of virtual team members.

The management of virtual teams has proved to be a daunting task, which compelled researchers to focus on factors which may benefit the organisation and improve the cohesiveness of the team (Maynard et al., 2012). The organisational structure of the virtual team is a critical point in understanding the dynamics of a specific team, as the degree of virtuality may impact the team. The general objective of this study is to explore the emotion experiences and regulation thereof for virtual team members in the Information Technology (IT) industry.

When looking at the IT industry, one will find that IT development has contributed to a recreation of work settings for employees. An IT work setting or environment seems to be characterised by a distributed, networked organisation that is knowledge intensive which increasingly offers resources to the outside (Bjørn-Andersen & Raymond, 2014). Global IT organisations like HP, Accenture and IBM offer knowledge-intensive, innovative services to other organisations. Smaller organisations that may only take over or assist a specific department in the outside organisation, for instance the HR function or the claims function (Lacity & Wilcocks, 2012) also exist. These types of smaller organisations function completely virtual with limited or non-existing face-to-face meetings. This emphasises the complete lack of non-verbal cues and widens the gap for emotions to be interpreted incorrectly and left unresolved. This study explores the effect these non-verbal cues may have on the emotions these members experience and regulate.

In conclusion, virtual teams seem to steadily become part of the modern day business arena with individuals communicating across traditional organisational boundaries. One of the most important aspects of individual functioning are emotion, as it is closely associated with behaviour, which could in turn influence performance. This necessitates the regulation of these emotions to prevent any potential influence on performance. This is however difficult in virtual team settings, where members have limited opportunities to meet face-to-face, which undoubtedly creates challenges for fellow team members to interpret and understand each other's emotions.

Against this background, the following research questions can be formulated:

1.2. <u>Research questions</u>

- How are virtual teams, emotion events, emotion experiences, and emotion regulation conceptualised in the literature?
- What are the emotion events that employees experience within virtual teams?
- What are the emotions that employees experience in a virtual team?
- How are emotion events and emotions regulated in a virtual team?
- What recommendations can be made for future studies regarding emotion experiences and the regulation thereof in virtual teams?

1.3. <u>Expected contribution of the study</u>

1.3.1. Contribution for the individual

Little attention is given in South African research to the emotions virtual team members experience. This study will explore how virtual team members regulate their emotion experiences in dynamic conditions. This research might assist virtual team members to understand their emotions in these conditions.

1.3.2. Contribution for the organisation

This study may offer a clear view of possible challenges and difficulties involved in a virtual team, regarding the emotions these members experience. The organisation may gain more information on how virtual team members operate emotionally and how they can regulate the emotion experiences more successfully. In addition, it could impact on the management of virtual teams.

1.3.3. Contribution towards the I/O Psychology literature

There is a significant gap in the literature regarding virtual teams and the emotions these members experience in their work, more so in the South African context. This study will thus add to the limited knowledge base of emotions and emotion regulation in virtual teams and possibly guide future interventions of emotion management in these particular settings.

1.4. Research objectives

The research objectives are divided into a general objective and specific objectives.

1.4.1. General objective

The main aim of this research is to explore and describe the emotion experiences of virtual team members, as well as the emotion regulation thereof.

1.4.2. Specific objectives

The specific objectives of this research are:

- To conceptualise virtual teams, emotion events, emotion experiences and emotion regulation according to the literature.
- To explore what the emotion events are that employees experience within virtual teams.
- To explore the emotions that employees experience in virtual teams.
- To explore and describe how emotion events and emotions are regulated in virtual teams.
- To make recommendations for future studies regarding emotion experiences and the regulation thereof in virtual teams.

1.5. Research design

1.5.1. Research approach

A qualitative research approach is utilised in this study. According to Joubish, Khurram, Achmed, Fatima, and Heider (2011) qualitative research is used to aid one in understanding the feelings people experience in their daily lives. The participant's voice and actions serve as data for the qualitative researcher. The gathering of this data aids in identifying possible explanations why virtual team members think, feel and act in a certain way (Flick, 2014). Qualitative research is used to deal with phenomena that are difficult to understand and to quantify in a survey, such as the experiences, beliefs and meanings people attach to experiences (Willis, 2007). This approach is appropriate, as rich descriptions are gained from the participants in terms of the emotion experiences they have and the regulation thereof.

It is evident from the literature that there is a void in exploring the emotion experiences and the regulation thereof for virtual team members. Due to the relatively unknown area of study, the researcher employes interviews to aid in gathering data. The purpose of this phenomenological study is to understand the emotion experiences and regulation thereof for virtual team members in an IT environment. A phenomenological study aims to understand and describe the meaning individuals give to certain lived experiences (Cresswell, 2013). Phenomenology has a need to understand how individuals view themselves and the world around them (Willis, 2007). Schram (2006) stated that phenomenology aims to describe what an individual's world consists of and what specific structures and concepts of experiences add form and meaning to it. The researcher provides a rich and structured description of the lived experiences of the participants.

One question that needs to be asked, however, is how the researcher believes the above- mentioned research questions could be answered. Following the belief that truth is always relative to the individual's frame of reference, the researcher employes relativism as the ontology of constructivism in this study. This indicates that the researcher gains an understanding of the lived experience of the individual through exploring the interaction this individual has with his/her environment (Denzin & Lincoln, 2011). The epistemological stance for this research rests on the belief that meaning and knowledge are discovered by making use of interviewing or observation (De Vos, Strydom, Fouché, & Delport, 2011).

1.5.2. Research strategy

For the researcher to gain some understanding of the emotion experiences virtual team members are confronted with, the foundation for the design of this current study is a hermeneutic phenomenological approach which is the theory of interpretation (Lindseth & Norberg, 2004). This approach investigates in detail the way participants understand their experiences by exploring their account of the processes they have experienced. The onus does not lie on the researcher to describe and explain the emotion experiences as a social phenomenon, but rather to understand these experiences as they are expressed in the interviews. According to Chapman and Smith (2002), it further engages with the meaning these experiences of events hold for the participants.

1.6. <u>Research method</u>

1.6.1. Literature review

In phase 1 of this process a complete literature review regarding virtual teams and emotion regulation are done. The keywords are: virtual teams, emotion experiences, emotion regulation, affect and IT industry, which will be used in the following databases to gain a full literature review:

- Google scholar;
- Science Direct;
- EbscoHost, and;
- Mendeley.

The use of the above search engines grants the researcher access to a variety of accredited journals, as well as scientific books and other relevant academic sources. The literature review provides background into the concepts underlying this study.

1.6.2. Research setting

The research setting is based in Gauteng, South Africa, at a software engineering firm. The firm employs software engineers who work in four to five different teams on different projects. The teams consist of 2-5 team members inside the organisation. The teams design system development projects for local and global companies. Each team has to communicate virtually via the use of e-mail, *skype*, and telephone or conference calls to the organisation outsourcing them. The interviews are conducted in a conference room on site to ensure minimum disruption of participants and furthermore creating a familiar environment. The room is sound proof and are equipped with adequate lighting, air-conditioning, comfortable chairs and a table, as well as a white board for possible drawings. Interviews commences after approval from the gatekeeper is been obtained.

1.6.3. Entrée and establishing researcher roles

To begin this study, it is important to gain access to the research field. The first step of access to this field is gained through contact within the particular firm. The researcher negotiates access and permission to the participants within the above-mentioned firm with the gatekeeper, which is in this instance the Human Resources Practitioner and Chief Operating Officer of the firm. According to De Vos et al. (2011), access should be negotiated in a professional and ethical manner, while treating the gatekeeper with respect. The participants are informed in an overt manner about what the project aims to achieve, and they should be granted the opportunity to withdraw in any given stage.

Once appointments are scheduled with each participant, the role of the researcher is to attend every meeting, while being on time and professional. An additional role of the researcher is to act as an active facilitator who provides the participants with the opportunity to talk about their thoughts and experiences. This facilitator's role requires the researcher to manage the interview process to ensure rich data generation, while staying objective and not influencing the participant's actual views (Ritchie, Lewis, Nicholls, & Ormston, 2014). It is important to note that not all the roles of the researcher will be discussed beforehand, since it may change during the course of the study (De Vos et al., 2011).

1.6.4. Sampling

Due to the qualitative nature of the study, purposive sampling as a non-probability sampling technique is used. The odds of selecting an individual are known, since the study needs certain characteristics. In this sampling technique the researcher seeks out typical cases for the study, which is entirely dependent on the judgement of the researcher (Harrell & Bradley, 2009). Purposive sampling may furthermore enable the researcher to gain insight into the virtual team environment, as well as to accurately understand the life world of the participants. The sample comprises of individuals who display the following characteristics: 1) The participant is working in an IT firm; 2) He/she is part of a team whose main communication method is electronic communication, and 3) He/she is willing to participate in the study.

Given the fact that the sample size in qualitative research is not that important (De Vos et al., 2011), the researcher conducts interviews until data saturation is achieved. The sample size is however, sufficient to capture the essence of the phenomena and to rule out any limitations (Kuper, Lingard, & Levinson, 2008). When the researcher finds a thorough understanding of the phenomena (emotion experiences in virtual teams) she ends the interviews. According to Kuper et al. (2008), data saturation present itself when new participants no longer produce new trends and themes and just repeat trends and themes that the other participants have already raised.

1.6.5. Data collection methods

The data collection method in this study comprises of several steps. During and after the interview, the researcher makes field notes on the participant's behaviour while answering the questions. Field notes, according to De Vos et al. (2011), are a written account of what happens during the interview. During the interview only single words are jotted down, while the researcher will expand these notes after each interview into more detail. These notes may assist the researcher in accurately interpreting the final results. According to Onwuegbuzie and Leech (2007), field notes may also aid in eliminating possible biases from the researcher.

The researcher firstly conducts a pilot study with two individuals who hold the same characteristics as described above. The researcher test certain questions in the pilot study to determine whether relevant data may emerge from the actual interviews (De Vos et al., 2011). By carrying out a pilot study, the researcher determines beforehand which questions to ask and which questions to ban from the interview.

When the researcher is clear on which questions and vocabulary to use, the data for this study is gathered verbally via the use of interviews, which is a primary tool for doing qualitative research (Rubin & Rubin, 2012). An interview is most likely to provide depth of information the researcher seeks, because she will have the direct opportunity to ask the participant for apparent experiences within the virtual team environment. The participants may also value the opportunity to express their feelings to an objective individual (Harrell & Bradley, 2009).

The researcher requires detailed responses and experiences and not simple yes or no questions, which creates the need to use semi-structured interviews. Flick (2014) elaborates on the use of semi-structured interviewing by stating that this method searches for rich information while following the natural flow of the interview conversation. By utilising semi-structured interviews, Flick (2014) added that this method leaves room for the participants' own perspectives and ideas with regards to the topic to emerge which may be due to the fact that the participants will act as experts in the field and not the researcher (De Vos et al., 2011).

Open ended questions guide this semi-structured interviews, where the researcher requires variety of elaborations on experiences the participant has gone through. In addition, for new ideas to emerge, open-ended questions are also not fixed and in a certain order. The researcher have them as a guide, but uses her own discretion as to when certain questions are not valuable, and when to adjust some of the questions to fit the participant's process (Rubin & Rubin, 2012). Englander (2012) suggested that the phenomenological interview should be consistent with phenomenological criteria, gaining an understanding of the participant's subjective descriptions. Keeping this in mind the researcher conducts the interview with the following questions:

"It is important for you to keep the context of the virtual team you are operating in in mind when answering the following questions:

1. Can you remember any emotion you experienced while communicating electronically with your virtual team members? Please describe this emotion in detail.
2. What caused this emotion? I.e. what happened/did not happen that triggered this emotion?
3. Why do you think that this event may have caused an emotion reaction with you?
4. When people experience an emotion event it is usually accompanied by several feelings. Can you describe the feelings you experienced due to this emotion?
5. When people experience an emotion event, they might also feel an inner drive to do something. What was that inner-drive that you may have experienced with regards to that emotion experience?
6. What did you then do with that?

7. In an emotion experience people normally manage their emotions in order to move forward. How did you manage that specific emotion experience?"

It is important to note that these questions only act as a guide and that the participant may sway the questions with his/her ideas. Therefore, the questions may be tailored after the pilot study is conducted to make it more context based; it may possibly include new ideas as well.

When the researcher completes data analysis and finds that the data lacks breadth and depth, focus groups are considered to get more detailed information from each virtual team. Albeit the fact that focus groups and individual interviews are two separate methods for collecting data, the combination of these methods may lead to complementary views of the phenomenon being researched, which may provide deeper and richer data (Adami & Kiger, 2005).

1.6.6. Recording of data

The data for this current research study is collected by means of individual semi-structured interviewing and field notes, as described above. The researcher is utilising a tape recording device to accurately capture the interview, as well as field notes to capture the participant's body language and facial expressions. These two methods acts as a triangulation process, which the researcher employs to ensure deeper and rich information (Lambert and Loiselle, 2008) while it provides the reader with the opportunity to assess validity. It is important to gain permission from the participants to use a tape recorder. The participants are made aware at the beginning of the interview that they are free to acquire the tape at the end of the interview (De Vos et al., 2011). The researcher ensures that the recording resources are in proper working condition before the interview commences. The batteries of the recorder is replaced before each interview while an extra pair of charged batteries is also available to the researcher. This ensures that the interview process follows a smooth process without unnecessary interruptions.

The researcher aims to transcribe the verbatim information immediately after the interview, while also typing up the field notes and combining these two methods to gain a deeper insight into the participant's story. The researcher moves on to the data analysis process.

1.6.7. Data analyses

After data collection, the researcher needs to employ certain methods to analyse the data for an accurate description of the participant's experiences. The researcher aims to explore certain themes and interpret these themes that may cut across various paradigms of understanding. The researcher seeks to understand the essence and meaningful experiences of the participants and will use investigator triangulation to further add to the trustworthiness of the study (Yeh & Inman, 2007). A critical point in qualitative data analysis is the process of examining the collected information and then altering it in such a way that the end product will be a coherent account of the findings. This may also serve as a route by which the research study's conclusions are made (Green, Willis, Hughes, Small, Welch, Gibbs & Daly, 2007).

Leech and Onwuegbuzie (2007) provide several qualitative data analysis techniques that the researcher could use. From the seven proposed data analysis techniques (constant comparison analysis, keywords-in-context, word count, classical content analysis, domain analysis, taxonomic analysis, and componential analysis) this study employs the classical content analysis technique. To strengthen the rigour of the study, the researcher starts by employing thematic analysis. Thematic analysis are used to identify, analyse and report patterns which emerged from the data; it furthermore provides rich and detailed, although also complex, accounts of the data (Braun & Clarke, 2006). Classical content analysis is useful when the researcher wishes to see how many times certain themes emerge, instead of creating themes.

Braun and Clarke (2006) stated that the researcher should not see data analysis as a linear process by moving from one point to the next. It is rather a more recursive process where the researcher moves back and forth between the steps throughout the entire data set, without being rushed. Creswell (2013) and De Vos et al. (2011) suggested that the researcher begins by transcribing and organising the data into files on the computer using a word processing program. After this has been done, the researcher familiarises herself by reading the database several times to get a compelling picture of the data. Braun and Clarke (2006) noted that the researcher should abstain from trying to fit the data into a pre-existing coding frame, therefore analysing the data inductively. While reading, the researcher makes side notes of brief ideas in a separate file. After this has been done, Cresswell (2013) stated that the most important part of the analysis is now

about to start. By forming codes and categories from the data, the researcher gets to the heart of the data. Coding refers to the process of chunking smaller pieces of data which hold similar characteristics together. After coding, the researcher moves on to interpreting the data. This ultimately enables the researcher to make sense of the data and to get to the meaning of the phenomenon. The final phase, according to Cresswell (2013) and De Vos et al. (2011), is to represent the data in whatever form the researcher prefers.

To perform a thematic analysis, Braun and Clarke (2006) proposed steps that are in accordance with the process of Cresswell (2013) described above (familiarising self; generating codes; producing the report). However, their proposed framework for doing thematic analysis provides three additional phases. After the researcher familiarises herself and generated codes, the researcher will now in step three collate the codes into themes and sort all relevant data under the potential themes. After this is done, the researcher reviews these themes in step four in an attempt to refine them in order to form a coherent pattern. This stage might compel the researcher to rework themes, create new themes or discard some themes. Stage four also includes considering the validity of the individual themes by ensuring that the thematic map reflects overall meanings in the data. Once this stage is completed, the researcher has a general idea of the different themes and how they fit together to tell a story about the data. In stage five the researcher names each theme and provide a definition for each, whilst also writing a detailed analysis (Braun & Clarke, 2006). Leech and Onwuegbuzie (2007) added that classical content analysis is used when the researcher counts the number of times each of the above-mentioned themes are used. This method is used by the researcher to answer which themes are the most important to use in the study. Although the themes are counted, it is important to note that qualitative research concerns itself with the lived experience of the individual (Chapman & Smith, 2002).

It is suggested that data analysis should not happen after all the data has been generated, but rather alongside the interviews. Complimentary to Braun and Clarke (2006), Green et al. (2007) stated that the process of analysis should be a constant process that tests the fit of the new data on a continuous basis. This emphasises the importance for the researcher to be thoroughly

knowledgeable about the theory underlying the interviews, in order to capitalise on opportunities in the interview that may broaden the information and build new questions into the interview.

1.6.8. Strategies employed to ensure quality data

Due to the personal nature of qualitative research, it is more difficult to establish the validity and reliability of the findings than in quantitative research (Cresswell, 2013). This calls for a qualitative study to be of unsurpassed quality. Although there are no statistics to assist in the validity of the study, there are some guidelines that the researcher follows to ensure that the oxymoron that exists between validity and qualitative research is minimised to a zero. Tracy (2010) suggested eight steps to adhere to for quality qualitative research:

- Worthy topic: Studies of relative unknown phenomena, like emotion experiences in virtual teams, are intrinsically interesting which may shake the reader's perceptions and assumptions (Tracy, 2010). The current topic won't merely confirm existing knowledge, but rather creates new knowledge.
- Rich rigour: The data is interpreted with the assistance of several researchers which refers to co-coding. The data is presented to the fullest degree without the possible bias of a single researcher (Kitto, Chesters, & Grbich, 2008).
- Sincerity: This is a notion of authenticity where the researcher is as honest and true about the data as possible. Tracy (2010) suggests that the researcher should be explicit about her own biases and goals throughout the research process.
- Credibility: This can be seen as internal validity in the qualitative inquiry. It refers to the extent that the participant can relate to the findings of the research study. The researcher achieves this through constantly matching her reconstruction of the data to the participant's views (De Vos et al., 2011).
- Resonance: Tracy (2010) calls transferability, resonance, which refers to a researcher who is an accurate echo of the participants. The researcher are able to successfully communicate the findings to anybody who is not knowledgeable about the topic. The findings are transferable to new contexts in new studies.
- Significant contribution: The study not only makes a significant contribution to the field of industrial psychology, but also to other contexts, for instance management sciences

and leadership development. The study should build on existing knowledge, but also provide fresh new knowledge (Tracy, 2010).

- Ethics: Any research done on human behaviour implies that participants provides personal insights, which should at all times be kept confidential. The researcher aims to keep the data anonymous and safe at all times (Goodwin & Goodwin, 2014).

- Meaningful coherence: It is important for the study to answer the questions, keep to the chosen paradigm and interconnect data analysis. For this study to be meaningfully coherent, it implies that the study will accomplish what the researcher is espoused about (Tracy, 2010).

1.6.9. Reporting

According to Ritchie et al. (2014), writing the report of a qualitative study is the most challenging part of the whole research endeavour. It is of utmost importance to present the findings comprehensively, articulately and with conceptual clarity. Ritchie et al. (2014) further state that there is no set formula for writing a qualitative report, and De Vos et al. (2011) agreed by stating that qualitative reports are not strictly structured and that the elements of the qualitative report will have a certain richness that lacks in quantitative reports. O'Brien, Harris, Beckman, Reed, and Cook (2014) in contrast argued that it is important to follow a clear standard of reporting, because thorough reporting will provide editors, reviewers and other researchers with the opportunity to critically appraise the study and synthesise the findings. The researcher follows the guidelines for writing a qualitative manuscript as set out by the South African Journal of Industrial Psychology.

1.6.10. Ethical considerations

Research ethics serve to let the researcher rethink the participant's part in the research study. Goodwin and Goodwin (2014) emphasised that research on human behaviour will impose some or other burden on the participant. For instance, the participant could easily be doing something else instead of participating in the research. Ethics is at the heart of studying participant behaviour, especially in a qualitative fashion. This can be due to the open and adaptable nature of

qualitative research (Flick, 2014). Ethical consideration in the research process starts when the researcher enters the field for the time and will prolong for the remainder of the study.

The researcher firstly addresses the participants in a professional and informed manner. The aim and purpose of the particular research are communicated to the gatekeeper of the particular organisation and the participants, as well as what the study hopes to achieve. The participants are given an informed consent form, which assists the participants in knowing and understanding the risks and benefits of participation in the research. They are aware that participation in the study is completely voluntarily and that they are free to withdraw at any given time. Anonymity is the next factor to adhere to. The interviewer refrains from asking and/or mentioning any concrete information during the interview and takes care to anonymise any personal information in the transcribing phase (Flick, 2014). Goodwin and Goodwin (2014) additionally argue that research in psychology should aim to treat human research participants with respect in a way that signifies their rights and dignity. It stays the choice of the participant on which emotion event and the type of emotion event to report on.

The researcher strives to conduct this research study in an ethical manner by adhering to five general principles as set out by the APA code of ethics. Goodwin and Goodwin (2014) described them as follows:

- The researcher acts with beneficence and non-maleficence, by constantly weighing up the benefits of the research, while seeking to achieve the greatest good in the research;
- Fidelity and responsibility obliges the researcher to be aware of her responsibility to society, as well as her role to illustrate the highest standards of professional behaviour;
- The researcher is compelled by integrity to be brutally honest in the entire research endeavour;
- The researcher acts with justice to treat every participant in the research with fairness and aim to maintain the highest level of expertise that will reduce any form of bias, and
- The researcher has a special need to enforce respect for people's rights and dignity by being vigorous in her attempt to ensure the welfare of the participants, and furthermore protecting the rights of the participants

Furthermore, the researcher gained ethical clearance at the North West University's ethical committee for this research. NWU Ethics application number: NWU-HS-2014-0273.

1.7. <u>Chapter division</u>

The chapters in this mini-dissertation are presented as follows:

Chapter 1: Introduction.

Chapter 2: Research article.

Chapter 3: Conclusions, limitations and recommendations.

1.8. <u>Chapter summary</u>

Chapter 1 raised awareness regarding the substantial lack of research regarding emotion experiences and emotion regulation amongst virtual team members. In this chapter the unique nature of virtual teams was discussed and it also provided a brief discussion of emotion experiences and emotion regulation. This chapter additionally discussed the proposed research approach and method, and finally provided a brief overview of the chapters that will follow.

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CHAPTER 2

RESEARCH ARTICLE

EXPLORING EMOTION EXPERIENCES AND THE REGULATION THEREOF WITHIN VIRTUAL TEAMS IN THE INFORMATION TECHNOLOGY INDUSTRY

Orientation: Virtual teams multiplied with the rise of globalisation and technology development in the 21st century organisation. Employees are collaborating through technologically mediated communication tools with little to no face-to-face interaction. This has an influence on the emotions and regulation thereof amongst these employees. It became relevant to explore the emotion experiences elicited in these settings, as well as how these emotions experiences are regulated.

Research purpose: The general objective of this study was to explore and describe the emotion experiences of virtual team members, as well as the regulation thereof.

Motivation for the study: Virtual teams have limited opportunity for face-to-face interaction which creates dynamic emotion experiences, as these team members do not have visual cues to enable emotion understanding. Processes and outcomes of work teams are subjective to the teams' emotional context and the motivation for this study was thus to explore these emotion experiences and how these team members regulate these emotions.

Research approach, design and method: A qualitative study was conducted among eleven (n=11) software engineers using the phenomenological/hermeneutic approach. Semi-structured in-depth interviews served as data for this study which was transcribed and analysed using thematic and content analysis.

Main findings: Four themes, each with its own subthemes were extracted in terms of emotion events: communication, team characteristics, job characteristics and work outcomes. The findings yielded eight clusters of emotion experiences, which included frustration; impatience, irritation and anger; anxiety, nervousness, stress and caution; uncertainty, confusion and helplessness; incompetence, inadequacy and embarrassment; disappointment, despondency and discouragement; relief, accomplishment and pride; and glad, happiness, satisfaction and surprise. Emotion regulation themes were extracted based on the classification of the process model of emotion regulation which were cognitive change, attention reorientation, situation modification, situation selection and response modulation. The study also yielded a new regulation strategy, termed learned behaviour.

Practical/managerial implications: The findings are useful for managers who want to understand emotion experiences in virtual teams, as well as how these team members regulate these experiences. Clear business processes should alleviate some of the negative emotion experiences and managers could implement business process management to assist with this. Role clarification exercises could additionally facilitate positive emotion experiences, and attention should be paid to cultural and emotional intelligence workshops.

Contribution/value add: Existing research on emotion experiences and regulation in virtual teams has been lacking, not only in a South African context, but internationally as well. This study thus contributes to emotion research in virtual teams, as it yielded insight into the emotional experiences and regulation thereof. This study could furthermore inform future hypotheses on emotion experiences in virtual teams.

Keywords: emotion, emotion experiences, emotion regulation, virtual teams, affect, information technology industry

Introduction

With the rise and speed of globalisation in the last half-century, advancements in the way of work needed to happen in order to keep up with the demands of an interconnected world. These advancements called for communication to flow rapidly in order to produce collaboration between individuals across the borders of organisations, countries and even time (Foster, Abbey, Callow, Zu, & Wilbon, 2015; Gilson, Maynard, Young, Vartiainen, & Hakonen, 2015; Kirkman, Shapiro, Lu, & McGurrin, 2016; Klitmøller & Lauring, 2013). The particular demands of this global work environment have led to the development and employment of virtual teams which proactively enables organisations to act rapidly towards changing business demands (Krumm, Kanthak, Hartmann, & Hertel, 2016). Virtual teams predominantly make use of technology mediated communication tools with members often geographically dispersed whilst working together towards a common objective (Eubanks, Palanski, Olabisi, Joinson, & Dove, 2016; Krumm et al., 2016).

Virtual teams tend to be beneficial due to their potential to be flexible around the spatial and temporal barriers in human communication, by tapping into distributed expertise and by attaining a far wider market reach (Kuo & Yu, 2009; Zimmermann, 2011). These dynamic teams are furthermore favourable in the sense of outdoing the traditional face-to-face team structures by adopting more of an independent, flexible and sometimes ambiguous way of work (Coenen & Kok, 2014; Gunsel & Acikgoz, 2013; Vignovic & Thompson, 2010). However, this modern way of work does not indemnify these teams from a range of difficulties. In this regard, Gallenkamp, Korsgaard, Assmann, Welpe, and Picot (2011) stated that the blurred boundaries and more flexible working arrangements within virtual teams may pose rather unique challenges to the individual team members. Barsade and Gibson (2012) for instance stated that the processes and outcomes of work teams are subjective to the teams' emotional context and Xu and Montague (2015) noted that trust in virtual teams is again subjective to the emotional states of individual team members.

Byron (2008) argued that technology mediated communication will cause difficulty in conveying emotions accurately, making it all the more difficult for the individual to accurately perceive, understand and ultimately regulate emotions. The latter refers to how individuals shape the

emotions they experience to determine how they will experience and express these emotions (Gross, 1998). Emotions are multifaceted and subjective to the experiences the individual finds him-/herself in (Gross, 2014). In order for an individual to understand emotional information, it is required to pick up on non-verbal cues, because non-verbal cues enable complex emotion understanding which creates the avenue for the individual to successfully regulate the emotion in order to behave in an appropriate way (Elfenbein et al., 2010). These authors took a step further by stating that each individual's display of non- verbal cues will have an impact on what the other individual perceives. Clearly a challenge in this regard is posed for virtual team members, who are geographically dispersed with technology mediated communication as the main communication method.

The challenge facing the context of virtual teams in particular is that these teams do have an emotional context tied to it as team members may experience affective events which will elicit more dynamic and complex emotion experiences among members with differing emotions (Ayoko, Konrad & Boyle, 2012). Glikson and Erez (2013) additionally stated that the performance of virtual teams could be impacted by the emotional effect these team dynamics have on each team member. Current research is not addressing this inherent characteristic of virtual teams. The large body of knowledge available on virtual teams unequivocally argues that performance in virtual teams is mostly dependent on the effectiveness of the leader and therefore focuses a great deal of effort in developing an effective leader for the sake of managing a highly performing virtual team (Cogliser, Gardner, Gavin, & Broberg, 2012; Iorio & Taylor, 2015; Krumm et al., 2016; Webber & Webber, 2015). Although leadership in virtual teams is a valid conviction, not one of these publications accounted for any emotion events and/or experiences. Emotions are regarded by Gross and Barrett (2011) as an integral part of a human being and it could therefore be argued that a vital part of individual functioning within virtual teams is not fully accounted for in current virtual team literature, showcasing a clear gap in research.

According to Congard, Dauvier, Antoine, and Gilles (2011) and Jonker and Van der Merwe (2013) it is important to acquire a better understanding of the context of the events that elicit emotions at work. However, research seems to be lacking in thoroughly exploring the events and emotions virtual team members experience due to these events. Gooty, Gavin, and Ashkanasy

earlier on already urged researchers to explore emotions in the natural setting they occur (2009) making this study an important research focus. Congard et al. (2011) added that the affective events and emotions that individuals experience at work are all but obstinate and will fluctuate due to the varying of experiences in daily life. It can thus be expected that the characteristics of the virtual team environment could create dynamic emotion events. Moreover, these events are anticipated to produce rather unique and dynamic emotion experiences for these individual team members, which may be a daunting task to regulate (Eligio, Ainsworth, & Crook, 2012). The process model of emotion regulation (Gross, 1998) distinguishes between five different strategies used to regulate one's emotions and therefore it seems plausible to expect that individuals will regulate their emotions in some way or the other, although the strategies used by virtual team members are unknown.

Emotion laden events cause affective events and emotions at work which have been studied for quite some time (Ashkanasy and Humphrey, 2011; Barrett and Bliss-Moreau, 2009; Gibson, 2006). Affective events can be seen as critical factors in teamwork, as it impacts on and influences an individual's behaviour and productivity, as proposed by the Affective Events Theory of Weiss and Cropanzano (1996). Emotion events are unique to this theory and it is appropriate to use this theory in the virtual team setting as the AET states that certain conditions at work will lead to either positive or negative experiences on the side of the employee (Jonker and Van der Merwe, 2013). These events are however relatively unexplored in the virtual team context.

In addition to the AET, Scherer (2005) suggested that one should investigate three aspects when exploring emotion experiences: emotion events, emotion appraisal and emotions. By gaining awareness of which events are elicited in the virtual team setting, it is also possible to understand which strategies these individual members utilise in order to regulate their emotion experiences (Gross & Barrett, 2011). By studying this phenomenon, it could enhance the understanding of affect in virtual teams which can, according to Maynard, Mathieu, Rapp, and Gilson (2012), mitigate weaknesses in an attempt to enhance team outputs. Moreover, the importance of understanding the emotion experiences and the regulation of these experiences in virtual teams will provide clarity on how future interventions can be targeted to assist virtual team members in

understanding and coping with the unique and dynamic experiences they encounter on a daily basis with the aim of contributing to the successful management of this modern day phenomenon.

Research purpose and objectives

This study aims to explore and describe the emotion experiences of virtual team members, as well as the regulation thereof amongst virtual team members in the knowledge intensive information technology industry. The purpose is to provide an understanding of the lived emotion experiences of virtual teams at work. Therefore, the specific objectives of this research are (1) to explore what the emotion events are that employees experience within virtual teams, (2) to explore the emotions that employees experience in virtual teams, and (3) to explore and describe how emotion events and emotions are regulated in virtual teams. The following section will include a literature review with the aim of conceptualising virtual teams, emotion events, emotion experiences and – regulation, whilst exploring the effect of the virtual team phenomenon on the human experience.

Literature review

The constructivist paradigm is used as research perspective in the exploration of emotion events, emotion experiences and emotion regulation within virtual teams. This paradigm believes that there does exist a truth, reality and meaning, which can only come into existence through the researcher's awareness of it (Doucet, Letourneau, & Stoppard, 2010). Next, the literature review will discuss the context and challenges of virtual teams, explore the affective events theory with a focus on emotion events, provide an overview of emotion experiences and conclude with a review of emotion regulation.

Virtual teams

Gilson et al. (2015) stated that the dynamics of virtual teams have gained a considerable amount of attention in research over the past decade, largely due to the profound transformations in the world of work in terms of technology. Coenen and Kok (2014) argued that organisations are progressively making a way for practices such as virtual teams; which encompasses flexibility in order to optimise where and when employees work. To date, no empirical and scientific

definition or theory exists for virtual teams (Hosseini, Zuo, Chileshe, & Baroudi, 2015), although many a researcher agrees that the sturdiest characteristic of a virtual team is most probably its strong reliance on technology mediated communication modes such as teleconferencing, electronic mail, or instant messaging for the sake of collaboration amongst each other (Bosch- Sijtsema & Haapamäki, 2014; Eubanks et al., 2016; Han & Beyerlein, 2016; Pangil & Chan, 2014; Thomas & Bostrom, 2010).

Hosseini and his colleagues recently argued that the concept of virtuality remains elusive (Hosseini et al., 2015). These authors highlighted the fact that literature is still not in full agreement on what exactly constitutes the term 'virtuality' and created a conceptualisation of team virtuality, namely "*a holistic phenomenon that reflects to what degree deviations from face- to-face team conditions affect the quality of communication within the team in comparison to a face-to-face team.*" From this conceptualisation it is clear that there are deviations in virtual communication which may have some or other affect amongst team members.

Team members in either virtual or face-to-face teams need to communicate in order to complete an assigned job. Communication additionally enables team members to develop an intense pool of expertise and knowledge which creates substantial team effectiveness and task completion (Pangil & Chan, 2014). Virtual teams are known to be effective for knowledge sharing in order to create a wider market reach whilst reducing costs (Navimipour & Charband, 2016). These virtual teams are often made up of knowledge workers in the form of male software engineers (Choi and Pruett, 2015; Ghobadi, 2015) who could suffer from challenges such as cultural and linguistic issues (Klitmøller & Lauring, 2013). According to Klitmøller and Lauring (2013) there are some suggestions which indicate the challenge of managing communication for the sake of knowledge sharing in virtual teams. One such challenge could be the removal of non-verbal cues needed for emotion understanding (Elfenbein et al., 2010).

Non-verbal cues are integral to normal face-to-face teams and play an important role in fostering trust amongst team members. Kimble (2011) noted that a sole reliance on technology mediated communication modes will create a lack of trust due to the complete absence of the boost that face-to-face interaction per se provides. Rusman, Van Bruggen, Sloep, Valcke and Koper (2013)

argued that messages are frequently misinterpreted due to the lack of expression and tone of voice. Zimmermann (2011) likewise vouched that virtual communication between multilingual team members can lead to misunderstandings as well as avoidance of emotional conflict which could impede knowledge sharing and knowledge generation. Cleary some challenges to using technology mediated communication tools exist, for instance team members in different locations could see and experience things differently than those members who see and experience them directly, as technological communication tools fall short of conveying important social cues, facial expressions and body language (Kimble, 2011).

To conclude, Pitts, Wright, and Harkabus (2012) recommended that researchers should give consideration to the means through which individuals interact with the modern forms of communication and Cole (2014) stated that individuals tend to act differently given the context in which emotions take place, as different contexts will have subsequent behavioural outcomes. Emotions stem from different events in an individual's life and are integral to their behaviour and performance at work indicating the importance of exploring the emotion eliciting events in virtual teams (DeSteno, Gross, & Kubzansky, 2013). Ambrose, Chenoweth, and Mao (2009) stated that virtual software development teams are susceptible to emotional conflicts due to the fact that cognitive intelligence and group performance are largely dependent on emotional intelligence. With this being said, insufficient research exploring the typical emotional contexts in virtual software development teams has been done.

Affective and emotion events

Emotions are an integral part of daily functioning across all human beings (Barrett, 2012) and individuals working in an organisation will beyond all doubt bring their emotions with them to work (Jonker & Van der Merwe, 2013). Gibson (2006) agreed with Weiss, Suckow, and Cropanzano (1999) in stating that the workplace itself is a hotbed for emotion experiences as it continuously creates events that could be deemed important for the individual. Barrett, Mesquita, Ochsner, and Gross, (2007) argued that emotion experiences are anchored in content-rich events, indicating that emotions flow from a specific event. Complimentary to this Lambie and Marcel (2002) stated that an emotion experience cannot be dealt with without characterising a conscious emotion state since experiences flow from states which are caused by events.

Affective states and emotions at work have been studied for quite some time (Ashkanasy and Humphrey, 2011; Barrett and Bliss-Moreau, 2009; Gibson, 2006) and can be seen as critical factors in teamwork, as they impact on and influence an individual's behaviour and productivity, as proposed by the Affective Events Theory of Weiss and Cropanzano (1996). This fundamental theory, as depicted in figure 1, has generated substantial interest as a rationale for explaining the impact of the workplace events on members' ability to achieve progress toward workplace goals (Ashkanasy, 2015; Ashton-James & Ashkanasy, 2008).
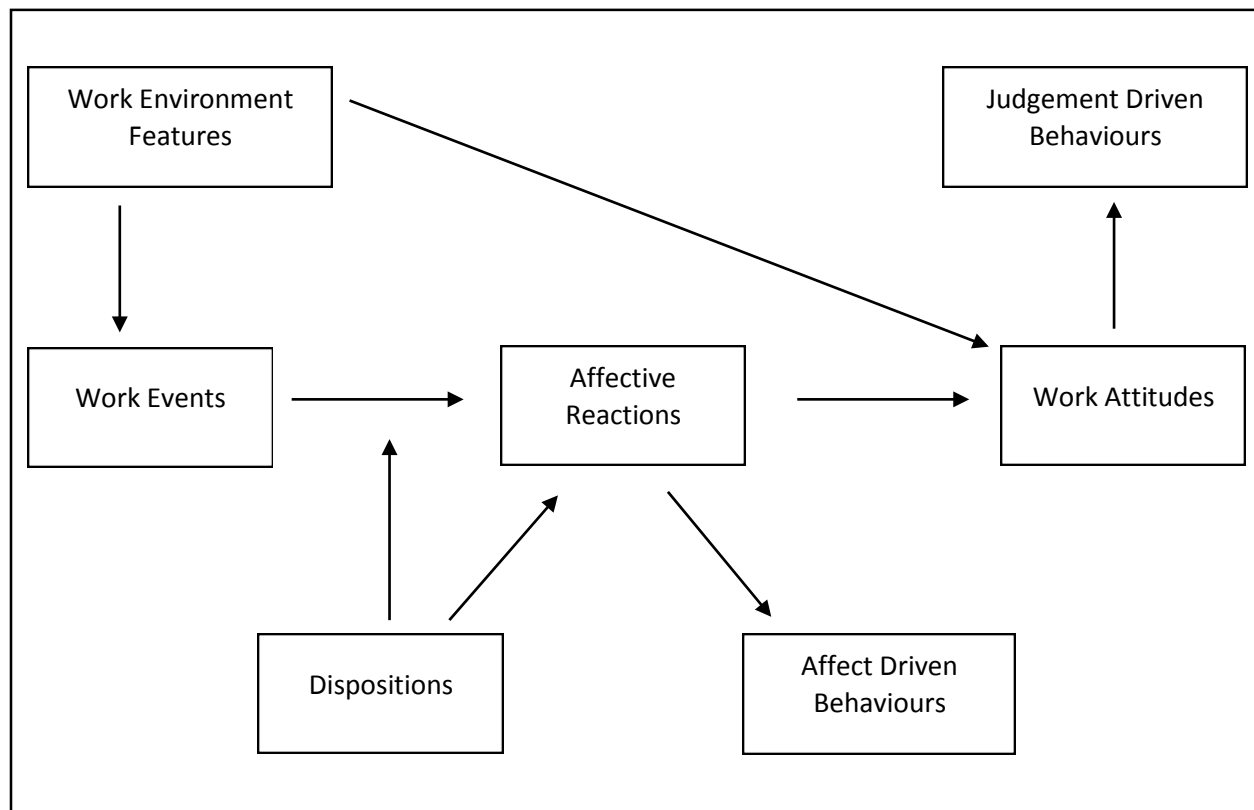
Figure 1: The Affective Events Theory (Weiss & Cropanzano, 1996, p.12)

It has long been known that events at work have the potential to elicit either positive, facilitating or negative anchoring emotions as determined by Frijda (1988) and Lazarus (1991). These event-generated emotions are, however, different from mere broad affective states (Hu & Kaplan, 2014). Should the event be aligned to the individual's personal goals, it can be expected that positive emotions will be elicited within the individual which will have an impact on the long term experience and to a lesser extent on momentary experiences (Hu & Kaplan, 2014). If this

stimulating event, on the other hand, poses a threat to the individual in terms of his/her existence or intentions, a negative emotion could be created (Frijda, 1988). Emotion events are thus dependent upon the circumstances the individual finds him-/ herself in (Frijda, 2005).

An individual's affective state furthermore holds consequences for performance, which makes this AET appropriate for use in the virtual team setting. The AET also states that emotion motivated behaviour is not so much "judgement driven", but rather "affect driven." These two different types of workplace behaviours are one of the reasons why specific workplace emotions need to be explored (Ashton-James & Ashkanasy, 2008). Glasø, Vie, Holmdal, and Einarsen, (2011) stated that judgement driven behaviours are influenced by the workplace attitudes of the individual. These enduring workplace attitudes are formed through the affective reactions individuals have about their jobs by experiencing continuous emotion events through daily highs and lows at work which cause affect driven behaviours (Weiss & Beal, 2005).

Affect driven behaviours will have an effect on reasoning and Forgas (2002) stated that it will be especially evident in rather significant complex situations which call for substantive information processing, even more so when faced with ambiguous or incomplete information. From the available literature it is known that virtual teams are operating with quite a significant degree of uncertainty as well as ambiguousness (Gallenkamp et al., 2011). As such, events in virtual teams are likely to be significantly influenced by the affective states of the individual team members. It is therefore vital to study the events which lead to affective states of virtual team members as it could potentially have an impact on the team's goals, as well as individual goals that are aligned to the aforementioned goals.

Emotions experiences

Emotions are central to any psychological model of human functioning which makes it clear that individuals, such as virtual team members, will certainly experience emotions routinely during the course of each day (Barrett, 2012; Gross & Barrett, 2011). Gross (2014) posited the difficulty in defining an emotion in specific terms which leads to the discussion that an emotion is more than a mere isolated construct, and rather a framework of aspects. Sieben (2007) understood the emotion one is experiencing as an intricate and multifaceted process. She viewed an emotion as

being shaped by an individual's reality, inclusive of the interactions with others and coined by understandings, valuations and structures the particular individual is grounded on. In what constitutes the experience of an emotion, Barrett et al. (2007) summarised it as a mental representation of an emotion consisting of: memories of past feelings, imaginings of hypothetical feelings, or occurring feelings in the moment. The most effective way then to measure the content of this mental representation is to give account of an individual's verbal behaviours regarding his or her own state.

For an individual to experience an emotion, certain aspects of this emotion need to be grouped together at a specific moment in time. These aspects include affect, perceptions of current reality and conceptual knowledge about the emotion which will produce an intentional state where the individual experiences affect due to a situational happening, again reminiscent of the affective events theory, as well as the renowned circumplex model of emotion (Barrett et al., 2007; Posner, Russell, & Peterson, 2005).

The circumplex model of emotion suggests that every affective state experienced by an individual stems from two independent neurophysiological systems, termed valence and arousal systems (Posner et al., 2005). These systems sub-serve all affective states, and different cognitive processes will interpret and refine the emotion experience according to the relevant situational context the individual finds himself/herself in (Posner et al., 2005). The circumplex model arranges this emotion experience as a shared view of pleasantness and unpleasantness (Sacco, 2010). Earlier in this paper it was said that goal facilitating events will cause emotions with a positive content (pleasantness) and threatening events will cause negative experiences (unpleasantness). Meeusen, van Dam, van Zundert and Knape (2010) categorised these views in terms of positive and negative events and confirmed the trends in literature which state that emotions are elicited by either type of event.

In studying emotion experiences, Lambie and Marcel (2002) argued the importance of looking at an emotion intertwined with the experience of reality of each individual, thereby sidestepping the notion of attempting to give unitary characterisation to a variety of experiences. This relates to the phenomenological design of this particular study, with the aim of studying the unique

experience of each individual from his or her point of view (this design will be explained in the method section). The circumstances under which an emotion experience is generated are likely to differ as these circumstances are significantly different from their attentional demands (Frijda, 2005). Being aware of the emotion one is experiencing is subjective to the experience of the particular reality one is perceiving or experiencing and Lambie and Marcel (2002) aptly placed this phenomenological experience as a first order construct followed by the awareness of the emotion experience in the second order.

Once the emotion is experienced, the second order that Lambie and Marcel (2002) referred to, the awareness of the emotion experience becomes apparent. Tsuchiya and Adolphs (2007) stated that emotions function at both a sensory and a motor end, hence awareness by the individual that he or she is experiencing an emotion. On the sensory end the individual will give thought to the emotion event and on the motor end, motivation is generated to behave in a certain manner. Experiences of emotion might also enable the individual to act in an intentional and instrumental manner for the sake of the situation. When experiencing an emotion, Jazaieri, Morrison, Goldin, and Gross (2015) stated that action urges arise with the awareness of the experience and this causes expressive behaviours which may or may not facilitate the desired goals. These action urges may include physiological activation, which includes conscious changes in one's bodily reactions which can include excitatory and inhibitory reactions as the nervous system arouses the fight or flight response (Gopinath, 2011).

Ashkanasy (2015) noted that research on emotions within organisations should give more attention to the context where the emotion will take place. Cheshin, Rafaeli, and Bos (2011) showed that text-based emotions in virtual communication will have an effect on the feelings of other virtual team members. From the research done by Baralou and Mcinnes (2013) it seems as though the distinct nature of virtual teams are juxtaposed to rhetorical production of emotion experiences as virtual communication can cause quite emotional interactions between members. Ayoko and Callan (2010) stated that the emotion experiences in virtual teams need to be regulated as well as the reactions members have towards the preceding event.

Emotion regulation

Emotion regulation according to Gross and Barrett (2011) is a set of processes aimed at hindering the initiation of the emotion or preventing the expression of the emotion. Garnefski and Kraaij (2014) saw emotion regulation as conscious mental strategies aimed at handling incoming emotionally arousing information and Den Hamer and Konijn (2016) noted that these strategies aim to alter unpleasant emotions after a negative experience in order to minimise the effect thereof on the individual's well-being. Koole (2009) defined emotion regulation as "*the set of processes whereby people seek to redirect the spontaneous flow of their emotions.*" This seems to correlate well with Gross's (1999) elaboration on emotion regulation by modifying, either through increasing, maintaining or decreasing, one's emotion at a specific time in order to experience and express it in a particular way. Emotion regulation in its purest form then consists of constant endeavours to manage one's emotional state in response to the ever-changing environmental demands the individual is faced with (Aldao, 2013; Garnefski & Kraaij, 2014; Koole, 2009).

James Gross's ground breaking work on emotion regulation has gone some way towards enhancing one's understanding of the strategies and processes that drive it (1998, 2001, 2002, 2014) and will subsequently be discussed. Emotion regulation consists of three core features – goal, strategy and outcome. The goal will be what the individual wishes to achieve, whilst the strategy will be the particular process involved in altering the emotion to achieve the aforementioned goal; the outcome refers to the consequences of these attempts (Gross, 2014). Although it is easy to reason that each individual has emotions that come and go, Gross (2001) stated that each individual has a significant amount of authority over these emotions and it is thus important to identify how one regulates these emotions.

The experience of emotion triggers certain response tendencies, as described by Gross (1998). These response tendencies – experiential, behavioural and physiological – need to be modulated in order to achieve a desired behaviour/action tendency. Gross (1998) described emotion regulation as an attempted process whereby the individual influences the emotions he or she experiences and expresses; he progressed by proposing a process model (see figure 2) for emotion regulation focussing on two sides: on the one side manipulating the input which he

called *antecedent focussed emotion regulation* inclusive of *situation selection*, *situation modification*, *attention reorientation* and *cognitive change*, and on the other side manipulating the output, named *response focussed emotion regulation* inclusive of strategies that will deepen, reduce, extend or restrict ongoing emotional experiences.
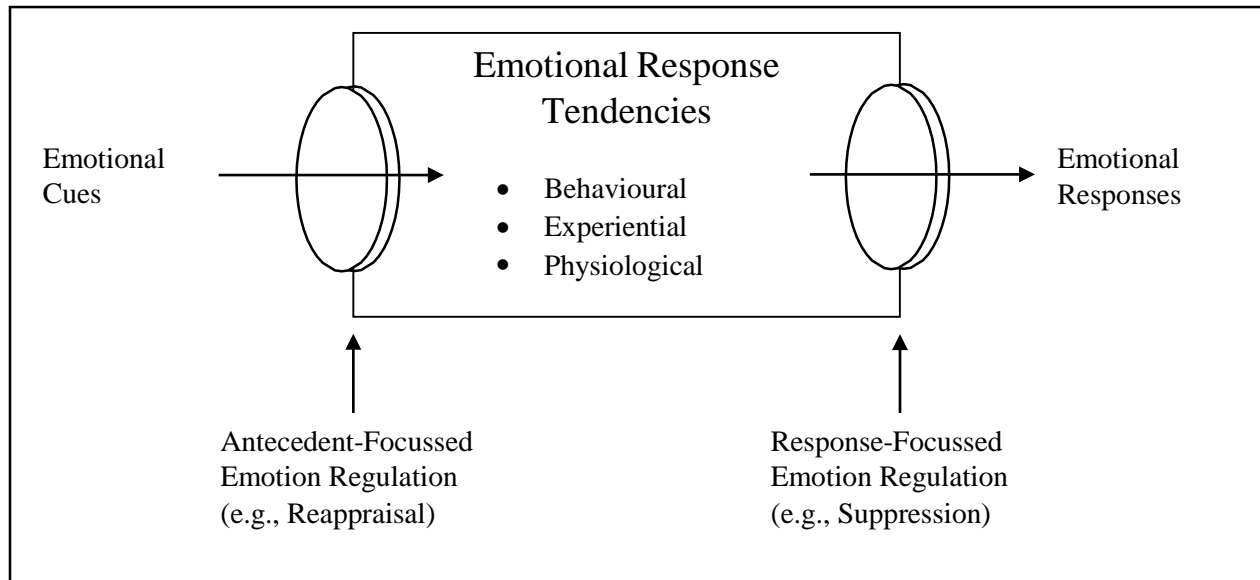

Figure 2. Process model of emotion regulation (Gross, 1998 p.296)

The response-focussed side of emotion regulation involves suppressing the emotion after the response tendencies were activated, implicating after the emotion has already been generated. This suppression of the emotion seems less effective as no impact will be seen on the emotion experience (Gross, 2001). Moreover, when employed frequently, it may result in an increase in physiological responding, diminished control of the emotion and interpersonal functioning, working memory and evidently greater signs of depression (Goldin, McRae, Ramel, & Gross, 2008; Gross, 2001; Gross & John, 2003). The antecedent-focussed side of emotion regulation on the other side has no cognitive consequences as it seems to decrease expressive behaviours without impacting physiological response tendencies adversely (Gross, 2001). By employing one of the reappraisal strategies named above, the individual is able to think about the event in a way that alters the emotional response tendency in order to achieve a desired goal (Gross, 2014).

Before any regulation of the emotion can take place, the individual needs to understand this emotion, and a crucial part in understanding an emotion is the individual's proficiency in

noticing and employing emotional communication from others (Walle & Campos, 2012). To regulate an emotion effectively in technology mediated communication specifically it is needed for team members to understand the emotion, but the limitations derived from communicating in this regard influence what these individuals understand about each other's emotions (Eligio et al., 2012). The view of Walle and Campos implies that an individual need to distinguish between the quality of the specific emotion being communicated, thus specifying the affect in order to respond with the appropriate behaviour. Boss and Sims (2008) argued a similar notion by stating that the emotional cues the individual picks up on will determine their particular behaviour and response, resonant with the process model depicted in Figure 2. This research, however, lags in the context of a virtual team in particular, because it did not take into account that virtual teams lack this emotional information due to the absence of non-verbal cues that enable emotion understanding (Elfenbein et al., 2010; Eligio et al., 2012).

In conclusion, it is evident that organisations benefit from employing virtual teams. The research on these teams, however, holds little evidence to provide comprehensive insight into the actual day-to-day activities which cause affect. The investigation of emotions within the context they are experienced could yield the foundational aspects of what is happening in a real time virtual team environment, as Tracy (2014) stated that emotions which are elicited in a laboratory setting is far less intense, which could lead to weak findings. Ashkanasy (2015) therefore recommended that emotions should be researched in the context they are experienced. Although it is known that virtual teams do have an affective connotation, little is known as to what events cause affect in these dynamic teams, nor how emotions are regulated in these dynamic conditions. Thus to explore the emotions virtual team members' experience, and the strategies they employ for regulating these experiences, the present research followed a qualitative approach.

The following research questions were formulated against this background:
- What are the emotion events that employees experience in a virtual team?
- What are the emotions that employees experience in a virtual team?
- How are emotion events and emotions regulated in a virtual team?
- What recommendations can be made for future studies regarding emotion experiences and the regulation thereof in virtual teams?

Research design

<u>Research Approach</u>

For the purpose of this study a qualitative research approach was used. This research method is used as a method of inquiry to explore how and why human beings behave the way they do, as well as what exactly govern these behaviours (Edmonds & Kennedy, 2013). Silverman (2013) suggested that qualitative research is concerned with various endeavours to study the reality in which participants find themselves. This endeavour to make sense of the participants' reality by looking at their frame of reference is the ontological belief of relativism of this concerning study. Petty, Thomson, and Stew (2012) stated that qualitative research can be seen as a predominant term covering various methodologies, each with its own epistemological assumptions. The aforementioned relative understanding will rest on the constructivist epistemological stance. This suggests that knowledge about the phenomenon is created through interactions between the researcher and participants in the form of interviews in order to create awareness of their reality in an attempt to understand it (Doucet et al., 2010).

The general objective of this study was to explore and describe emotion experiences of virtual team members, as well as the regulation thereof, reminiscent of the phenomenological approach. Phenomenological research dedicates itself to understand a specific phenomenon being studied from the perspective of the one experiencing the phenomenon (Collingridge, & Gantt, 2008). This approach is particularly suited for identifying foundational aspects of what is happening in virtual teams from the perspectives of those who operate in these team structures daily. The descriptions gained from the interviews enable the researcher to further discover the essence of the phenomenon by interpreting and analysing the data (Petty et al., 2012).

The verbatim information gained from the interviews needs to be interpreted in order to answer the research questions. Due to this it is possible to reason that phenomenology is closely related to hermeneutics, also called the theory of interpretation (Petty et al., 2012). Consequently the design of this approach is hermeneutic phenomenology which is used when the researcher wishes to understand the meaning the individual attaches to the experience (Crist & Tanner, 2003). This design does not lend itself to generalising the experience of the phenomenon, but rather increasing a sensitivity towards the participants' way of being in their world by trying to

understand what it is like to function in a virtual team from their point of view (Smith & Osborn, 2008).

Research Strategy

This study was conducted within the information technology industry. The particular IT organisation used for data collection is based in Pretoria in the Gauteng Province of South Africa and employs professional software engineers. Semi-structured interviews were used as data collection strategy. Before these interviews were scheduled, the researcher gained permission from the Human Resource Department and Chief Operating Officer of the concerned organisation. The purpose of the study was explained to these parties and adequate information on the suggested research process was provided. Once approval had been gained, the HR practitioner provided the researcher with contact details of the individuals who volunteered to participate in the study.

The researcher individually communicated the objective of the study to each participant after which a suitable date and time was confirmed for each interview. Each participant was provided with a written informed consent form which provided the participants with a full understanding of the possible risks involved. These forms were signed and obtained prior to the start of the interviews. This study is of a qualitative nature and therefore participants were asked in a real time setting to explain the emotions they experience while communicating electronically with their team members. They were also asked to report on how they manage their emotions in order to gain an understanding of their emotion regulation strategies. Once all the interviews had been conducted and transcribed, they were analysed and interpreted.

Research Method

Research setting

Data collection took place in the natural setting where the virtual teams operate to ensure familiarity and minimal disruption of the participants' lives. Each interview was individually arranged and conducted in an on-site boardroom. Interviews were not conducted with the full virtual team, but only the virtual team members who work for the particular IT organisation. The environment was free from noise or other disturbances. The researcher provided the   participants

with the opportunity to ask any questions relevant to the research process prior to collecting the data.

Apart from the written informed consent form mentioned earlier, the researcher provided the participants with as much information needed to explain the objective of the research study to ensure clarity regarding the research. Before commencement of the interviews, the researcher checked again for understanding and agreement on participating, as well as agreement to use a voice recorder during the interview. During the interviews the researcher refrained from asking any concrete information from the participants, thereby ensuring a large degree of anonymity since total anonymity is impossible to achieve with voice-recorded interviews. After the interviews had been conducted, the researcher ensured that each participant was left feeling psychologically safe and provided them with the opportunity to ask any other questions or concerns they might have had about the interview itself. The interview meeting was then closed and participants were thanked for their participation.

Entrée and establishing researcher roles and sampling

Prior to the commencement of the research interviews, access into the field was negotiated with the gatekeeper of the organisation which hosted the participants needed for the study. Anonymity and confidentiality of the results were emphasised throughout the negotiation process. After agreement to the study had been obtained, the HR practitioner provided the researcher with the contact details of the available participants. The researcher took the responsibility to contact each participant individually to schedule appropriate times for the interviews. Issues regarding anonymity and confidentiality were explained to the participants, as well as the research process. The researcher explained what would happen to the recordings; she again emphasised the confidentiality agreement. During the semi-structured interview, the researcher acted as an active facilitator by steering the interview in a way to ensure rich data was generated from the participants.

Decisions regarding the sample were conceptually driven by the theoretical framework underpinning this research from the onset. Hermeneutic phenomenological research is dependent on the individual experiences of each participant, how they understand, experience and express

their daily lives (Smith & Osborn, 2008). The objective of this study is to explore and describe the emotion experiences of virtual team members as well as the regulation thereof, thereby creating the need to look at the participants' account of the processes they experience in virtual communication. To meet this objective, the researcher had to employ a purposive sampling technique as a non-probability sampling technique. To accurately understand the life world of the individuals participating in the study, the odds of selecting a particular individual was known and up to the judgement of the researcher (Collingridge & Gantt, 2008). The participants needed to work in an IT organisation, being part of a team that mainly communicates via electronic communication to achieve their objectives and they needed to be willing to participate in the research. Due to the voluntary nature of the research, the participants were given the opportunity to withdraw during any stage of the research. Table 1 provides the reader with the characteristics of the individual participants who took part in the study.

Table 1

Characteristics of the participants taking part in the study (n= 11)

Item	Category	Frequency	Percentage (%)
Gender	Male	11	100%
Age	20 – 25	3	27%
	26 – 29	1	9%
	30 – 35	6	55%
	36 – 40	1	9%
Ethnicity	White	11	100%
Language	Afrikaans	7	64%
	English	4	36%
Qualification	B.Com. IT	1	9%
	B.Eng. Computer	9	82%
	B.Eng. Electronic	1	9%
Years of service	Less than one year	2	18%
	1 – 10 years	8	73%
	11 – 15years	1	9%
Designation	Business Development Manager	3	27%
	Software Engineer	8	73%

The total purposive sample consisted out of eleven individuals working in virtual teams ($n= 11$) in the information technology industry. The participants engaged in a discussion in the form of a semi-structured interview with the researcher. The ethnicity of the sample group was white participants and in terms of gender all participants were men. This could be due to the specific occupation group. 27% of the sample group were between the ages of 20 and 25, 9% were between 26 and 29 years, with the majority of the sample (55%) between 30 and 35 years, whilst 9% were between the ages of 36 and 40. The largest part (73 %) of the group had a decade or less years of service, whilst 18% had less than one year and 9% between 11 and 15 years. All the participants had some form of tertiary education, holding a Bachelor degree in either computer engineering (B.Eng. Computer, 82%), Electronic Engineering (B.Eng. Electronic, 9%) or Information Technology (B.Com. IT, 9%). The majority of the participants in the sample (73%) were Software Engineers with Business Development Managers representing 27% of the total sample.

Data collection method and recording

Prior to commencing with the data collection for the study, the researcher conducted a pilot study to increase the likelihood of gaining success in the main study. Pilot studies are seen as a mini version of the full scale study where specific pre-testing of the particular research interview takes place (Chenail, 2011). The pilot study aided the researcher in practising interviewing skills and provided an indication of whether interesting or substantial data will be collected in the main study (Silverman, 2013). The researcher followed the exact same process in contacting the participants and arranging the interviews as described in the previous section.

Three participants ($n= 3$) holding similar inclusion characteristics of the sample needed for the main study were interviewed. The pilot study informed the researcher of the research process and about the likely outcome thereof. After transcribing the pilot study, the researcher was able to identify an ambiguous question with regard to the feelings participants experienced due to the emotion. The researcher improved this question in the main study by explaining the short-lived nature of an emotion and the feelings that arise when processing the emotion, which could include several thoughts and/or bodily reactions participants may experience due to this emotion. In the pilot study participants introduced some ideas the researcher did not think about. The

researcher then added an open question which acted as an opportunity for the participants to add any further information they wanted. No further improvements to the research design or interview schedule were made after the pilot study.

Data collection in the main study comprised of field notes and interviewing. Field notes are a written account of what the researcher visually observes during the interview (Silverman, 2013). This is used in conjunction with the transcribed interviews during the data analyses phase to assist the researcher with the inductive reasoning process to increase the rigour of the qualitative data. According to Taylor, Bogdan, and DeVault (2016) interviewing is used when the researcher wishes to understand events which cannot be observed directly by the researcher, for instance emotion experiences in virtual communication. This phenomenological study wishes to identify in detail how participants make sense of these experiences in their daily lives, which creates the need for semi-structured interviewing.

These semi-structured interviews were recorded by means of a voice recording tool. The participants gave their consent for the voice recorder to be used, provided that confidentiality be maintained throughout the interview. After each interview had been recorded, the researcher saved the voice recording in a password protected file and started transcribing the verbatim information, which was also stored securely.

The questions in the semi-structured interviews included, but were not limited to, the following:
1. Can you remember any emotion you experienced while communicating electronically with your virtual team members? Please describe this emotion in full detail.
2. What caused this emotion? i.e. what happened/ did not happen that triggered this emotion?
3. Why do you think that this event may have caused an emotion reaction with you?
4. When people experience an emotion event it is usually accompanied by several feelings. An emotion is of short duration that is associated with various other feelings that you might experience after you have identified the emotion. Can you describe the feelings you experienced due to this emotion?

5. When people experience an emotion event, they might also feel an inner drive to do something. What was that inner drive that you may have experienced with regards to that emotion experience?

6. What did you then do with that?

7. In an emotion experience, people normally manage their emotions in order to move forward. How did you manage that specific emotion experience?

8. Is there anything else you would like to add?

Data analyses

After the verbatim interviews had been transcribed, the researcher read the entire data set several times to familiarise herself with the information. This was followed by systematically extracting meaningful units of responses from all transcribed interviews into an excel sheet. The data analysis in this study was done by using thematic and content analysis. Clarke, Braun, and Hayfield (2015) stated that thematic analysis is hallmarked by flexibility indicating that it can be employed in a range of different theoretical backgrounds. Content analysis was used to examine the data from various angles and to quantify the phenomena that emerged in this particular research in an attempt to strengthen the rigour of these findings. In the content analysis, the researcher focussed more on the frequency of occurrence of the various phenomena, where in the thematic analysis, the researcher focussed more on identifying themes and building up the analysis in the most cohesive manner.

According to Alhojailan (2012) thematic analysis is used when the researcher seeks to discover interpretations as expressed by the participants in the interviews. The researcher stayed as close to the explicit meanings participants communicated in the interviews as possible. By using thematic analysis, the researcher was able to detect and identify the factors that influenced the experiences of virtual team members. Thematic analysis is characterised by six phases, as introduced by Braun and Clarke (2006). These phases include familiarisation, coding, searching for themes, reviewing themes, defining and naming themes and writing the report.

Phase 1: Familiarisation

The researcher, as mentioned, read the dataset several times as the first step to grasp the overall virtual team experience. When ambiguous responses were identified, the researcher went back to the initial voice recordings to clarify them. During the familiarisation phase the researcher jotted down side notes on the fairly obvious meanings (Clarke et al., 2015).

Phase 2: Coding

The meaningful unit of responses were coded to retrieve and categorise relevant features of the data. Miles, Huberman, and Saldana (2014) described coding as in actual fact analysis and not preparation. The researcher developed initial codes which were discussed with the subject matter expert and practising industrial psychologist in an attempt to develop consistency and validity of results.

Phase 3: Searching for themes

Clarke et al. (2015) stated that the key criteria in creating themes are to ensure that they identify a clear aspect of the data and that they provide information regarding the research questions in particular. The researcher started cateogrising corresponding codes into themes which were discussed with the subject matter expert and praticing industrial psychologist.

Phase 4: Reviewing themes

During this phase the researcher reflected on the conceptual framework upon which this research was formulated to confirm if the themes fit. Alhojailan (2012) stated that themes should be reviewed to ensure they are representative of the whole set.

Phase 5: Defining and naming themes

The themes emerged from the data and were intrepreted on the basis of the process model of emotion regulation of Gross (1998), as well as the Affective Events Theory of Weiss and Cropanzano (1996). The themes were checked by the subject matter expert and practising industrial psychologist to ensure transferability.

Phase 6: Writing the report

In this phase the researcher weaved together the data extracts and analytical commentary. Conceptual definitions are provided for the themes and are discussed in the subsequent section (findings).

In order to ensure trustworthiness of the content analysis, the researcher used the checklist of Elo, Kääriäinen, Kanste, Polkki, Utriainen and Kyngas, (2014). This checklist includes three phases: 1) preparation phase, 2) organisation phase, and 3) reporting phase. In the preparation phase a suitable data collection method and sample were used (see data collection section) as well as an appropriate unit of analysis. In the second phase the researcher organised the data in an excel spreadsheet which involved repeated reading of the responses. The data was coded into four themes, each with different subthemes. These themes were discussed and checked by both a subject matter expert and a practising industrial psychologist; this ensured that the analysed data accurately represented the information provided by the participants. The data was also representative of virtual team members in an information technology organisation. In the third stage, the reporting phase, the researcher aimed to report the results systematically and logically and ensured to provide a full description of the process of analysis followed.

Ethical considerations

Ethical considerations are deemed important, especially in qualitative research, because the researcher has direct contact with the participants in the field. Due to this fact, Silverman (2013) noted that ethical problems are usually not out of the question. This study adhered to the Health Professions Council of South Africa's (HPCSA, 2006) code of ethics for psychologists, by first and foremost obtaining written approval from the host institution's ethics committee to conduct the research (HPCSA, 2006). Furthermore, the researcher acted with beneficence and non-maleficence in avoiding harm to the participants and by striving to achieve the greatest good throughout the research.

The researcher ensured the participants' autonomy by listening to their accounts of what they experienced, while acting with integrity in being consistent with what the participants said. Justice compelled the researcher to treat every participant with fairness whilst maintaining the highest level of expertise in eliminating any bias. Each participant was provided with a written informed consent form discussing all the potential risks involved in partaking in the study. It was stipulated that participation was entirely voluntary and that no incentives would be handed out. The participants were made aware of the fact that they were free to withdraw from the research at any time without suffering any consequences. The researcher ensured anonymity and confidentiality throughout the process by storing all data electronically in password-protected files.

Next, the findings will be discussed in terms of the three research questions by starting with the emotion events, followed by the emotion experiences and concluding with the emotion regulation strategies.

Findings and Discussion

The general objective of this research was to explore and describe the emotion experiences of virtual team members, as well as the regulation thereof. In order to address this objective, Table 2 provides an overview of these findings. Building upon the theoretical framework guiding this research, the reporting of the specific objectives will begin with the emotion events present in the virtual teams, followed by the emotions generated by these events and lastly how these team members regulated these emotion events and experiences.

Table 2

Emotion experiences and associated emotion regulation

Emotion events	Emotions experienced	Emotion regulation strategy
Communication		
Miscommunication;	Frustration;	Situation modification;
Communication mode;	Uncertainty, Confusion,	Attention reorientation;
Non-verbal emotion cues;	Helplessness	Situation selection
Subject language		
Team characteristics		
Team dynamics,	Frustration;	Cognitive change;
Cohesiveness;	Impatience, Irritation, Anger	Attention reorientation
Proximity;		
Team dependence		
Job characteristics		
Knowledge interpretation/	Frustration;	Cognitive change;
Knowledge sharing;	Anxiety, Nervousness, Stress,	Attention reorientation;
Cultural diversity;	Caution;	Learned behaviour
Role clarification;	Glad, Happiness, Satisfaction,	
Task requirement;	Surprise;	
Task completion	Incompetence, Inadequacy,	
	Embarrassment	

Work outcomes

Feedback;	Frustration;	Cognitive change;
Work delay;	Anxiety, Nervousness, Stress,	Situation modification;
Work repetition	Caution,	Response modulation
	Relief, Accomplishment, Pride;	
	Impatience, Irritation, Anger;	
	Disappointment, Despondency,	
	Discouragement	

When considering the above overview of the findings of this research, it could be possible to align the findings of the emotion events with the three levels of functioning within an organisation, namely, organisational, team and individual level (Cummings &Worley, 2015). It was furthermore possible that the dynamics of each emotion event could have influenced the work outcomes of the sample in terms of feedback, work delay and work repetition.

With the first emotion event, communication, participants experienced frustration, uncertainty, confusion and helplessness within the context of their work, therefore on the organisational level. The context of virtual work is characterised by technologically mediated communication which posed numerous challenges for the team members, for example the likelihood of miscommunication. These context specific emotions seem to be regulated by participants modifying their situation, selecting certain situations and reorienting their attention to something else (Please note that all regulation strategies will be discussed in the subsequent sections).

The team characteristics emotion event, which could be on the team level, was characterised by team dynamics, cohesiveness, dependence and proximity. These factors caused frustration; and impatience, irritation and anger amongst the sample group. The participants regulated these negative emotions by changing their thoughts about it and again reorienting their attention.

The third emotion event, job characteristics, was characterised by factors pertaining to individual functioning within an organisation. This included interpretation and sharing of knowledge, cultural diversity, role clarification, task requirement and task completion. The sample experienced frustration; anxiety, nervousness, stress, and caution; gladness, happiness,

satisfaction, and surprise; and incompetence, inadequacy and embarrassment with regard to these factors. These emotions were regulated with the same strategies used in the previous emotion event: changing thoughts and deploying their attention. These two strategies can confidently be seen as the dominant regulation strategies which virtual team members in this sample used. Additionally, participant indicated that they would draw upon past experiences in the virtual team setting to regulate their emotion, called learned behaviour.

It was clear that emotion events were present on the three levels of an organisation. The factors of the three emotion events could have had an influence on the work outcomes of the particular virtual teams in the sample. Specific factors in the work outcomes were feedback, work delay and work repetition. It seemed as though these factors influenced the participants to experience frustration; anxiety, nervousness, stress, and caution; impatience, irritation and anger; disappointment, despondency and discouragement; relief, accomplishment and pride. They regulated these experiences by changing their thoughts about the outcomes, modifying the situations they found themselves in and suppressing the response tendencies after activating them.

Discussion

<u>Outline of the results</u>

From table 2 it is clear that virtual teams have a high level of emotional content tied to them as frustration seems to present itself in every level of work. The implication thereof will be discussed later in this chapter. The following section will provide an in-depth discussion about the experience of firstly each event (table 3), secondly each emotion cluster (table 4) and lastly each regulation strategy (table 5). The findings are reported in tabular formation with an associated meaning of each finding, as well as a direct response from the participants themselves. These findings are then discussed and interpreted.

Using thematic analysis, the researcher was able to extract four themes in terms of emotion events. Each theme had different subthemes and are reported in table 3, followed by a discussion. Each event was loaded with a range of emotions which were clustered together in 8 categories represented in table 4, followed by a discussion. The emotion regulation strategies were grouped into six themes and are presented in table 5 and then subsequently discussed.

Table 3

Emotion events experienced in virtual teams

Theme	Sub theme	Associated meaning	Response
Communication	Miscommunication	Participants spoke past each other in virtual communication.	*"If you don't understand what the person is telling you, you maybe go and resolve things that are not really the issue."* P3
	Communication mode	Virtual communication modes lead to limitations and gaps in communication.	*"It helps when you can draw a picture, but with electronic communication you only have speech and text to convey something and that can get difficult."* P4
	Non-verbal emotion cues	Visual cues to enable understanding are missing, which leads to uncertainty.	*"The worst of all is you are busy explaining this thing over the telephone. You don't know if the guy is understanding at all where you are, because you can't like see their head nodding or say ok they are still on board."* P11
	Subject language	Programming language used by the participants is in a different than normal paradigm.	*"Usually it happens with people who are not technically advanced, so seeing that we're in the IT business, if they are not as technically advanced as us they often misinterpret the emails."* P5
Team characteristics	Team dynamics	Behavioural relationships among team members working on a joint project.	*"It happens that you aren't in sync with the other part of the team. You work towards the same goal, but at the end of the day it causes you to miss the deadline and things like that."* P1
	Team cohesiveness	Willingness of team members to coordinate efforts within the team.	*"It doesn't even help you try and explain to these guys what we are seeing or what we want, it's just pointless. They are in any case only going to do what the other guy [team member] says."* P2
	Proximity	Geographical distance between team members	*"They will do a part of the work and then give it to us, I can't just ask a quick question on it and that makes it really difficult."* P11
	Team dependence	Dependence on one another to complete project tasks.	*"My team member whom I was speaking with over the phone did not know the answer and I then had to ask another team member."* P8

Job characteristics	Knowledge interpretation Knowledge sharing	Software engineers hold a higher than average technical competence and therefore experience difficulty in sharing and interpreting it in layman language.	*"They would reply to get more clarity around certain aspects and then you clearly see that they don't have the faintest idea as to what changes we are going to do, then you just have to send them another email to ensure they understand. So this feels as if we are wasting our time…"* P9
	Cultural diversity	The collaboration between team members from different cultural groups.	*"To carry over a concept is much more difficult because the cultural difference is so big that certain concepts we perceive as normal can't be carried over."* P10
	Role clarification	Roles in virtual teams are ill-defined and not adhered to.	*"A lot of times you are in a meeting that you don't have to be in, but you are there now and you don't always get the opportunity to get out of it."* P2
	Task requirement	Time needed and actual time taken to complete a specific task in the project.	*"I know the problem can be solved easily, but now I have to spend additional time on actually solving the problem so I think it has to do with the time factor."* P7
	Task completion	Distributed information needed to complete a task in the project.	*"You sit with this problem you have to solve even though you don't necessarily have all the information, they have everything."* P2
Work outcomes	Feedback	Feedback is not constantly given and received, causing feedback loops and delays as a result.	*"If you tell them something today, they come back to you tomorrow when we are sleeping, and when they work, we sleep, so it takes like a whole day to get feedback, so then everything takes extra time."* P11
	Work delay	Additional time spent in explaining and waiting for feedback causes project delays.	*"We get behind and the work starts heaping up because the other guys take long, and we can't do anything about it because they are making us late."* P11
	Work repetition	Repetitive discussions and communications about related work and tasks.	*"Most of the time it is something that we have discussed previously and then I feel they are busy wasting our time because this has been discussed."* P2

P indicates Participant

Theme 1: Communication

From the exploration it became clear that the sample experienced a countless challenge with regard to the context they find themselves in when being at work, as they seemed to have experienced pronounced difficulty in communicating effectively. Participants experienced continuous misunderstandings due to the virtual communication:

> "*The contents of the email when it was logged, the fault, pretty much came down to bad communication and for me it felt like I was communicating properly they were just not understanding.*" (Participant 3)

Email seems to have seized voice interaction and conference rooms are replaced with conference calls. These communication modes prevent communication from taking place effectively. Additionally, it became clear that the sample group has preferences that are not being met by the communication modes. The participants faced a great risk of misinterpretation and conflict in communication. This resulted from the lack of non-verbal or visual cues available between in-person exchanges. Software engineers are known to have a repertoire of occupation specific language and understanding, and the lack of visual cues created additional difficulty in conveying this understanding into general understanding:

> "*To carry a concept through to someone takes me sometimes the entire day, and that can be condensed into an hour if I can get into my car and drive to him.*" (Participant 10)

Communication, according to Spaho (2013), is the transfer of information from sender to receiver, implying that the message is understood by the receiver. Zofi (2012) regarded communication as the number one prerequisite for effective virtual team functioning and from the sample it is clear that communication is not understood most of the time and is then rather ineffective. Communication is undeniably the protocol that connects team members to one another, and when disjointed, like in the case of this sample, various consequences such as misunderstandings, uncertainty and delays are expected to exist. Communication in virtual teams may also become more elusive due to the loss of close proximity amongst team members (Zofi, 2012). This "faceless" phenomenon may not be a cure-all and could have implications for the individual team members in terms of working effectively. Kreitner and Kinicki (2010) regarded periodic facial interactions between virtual team members as an important facilitator for communication and team dynamics.

Participants demonstrated that a lack of effective communication emerged as causes of uncertainty and changes in their projects. Derived from their responses, it is understandable and rather expected for these team members to experience emotions such as frustration. The technology mediated communication tools did have restrictions in terms of how effectively they could be used. The responses in table 2 furthermore show that something is missing in the communication between team members, which could possibly resolve the challenges team members face if they could communicate face-to-face.

The practical implication of ineffective communication could possibly be threefold: the path of information exchange between members is bland which causes vague interactions between them. Individuals could become frustrated with the situation, influencing the functioning of the team. The conclusion can thus be drawn that problems with communication in a virtual team could lead to poor project execution and issues with deliverance in terms of time and quality, which undoubtedly influence the functioning of the organisation. Interventions to empower goal- directed communication between team members could assist in this regard.

Theme 2: Team characteristics

Participants in the sample experienced problems with their team dynamics in terms of the relationships between team members and the willingness of members to coordinate their efforts to reach a conclusion, which refers to the cohesiveness of the team. Team members seemed out of sync with one another, causing projects to fall behind, with goal achievement also being deterred. Some participants experienced a general feeling of social isolation by referring to the team dynamics as "us and them." Team members additionally experienced a lack of team dependence which could ultimately undermine team member trust:

> *"I got frustrated because it is my team, they are the ones that should help me on the other side. I am in the field and they are back at the office, they must be able to sort me out."* (Participant 8)

It is known that high speed technology enables instantaneous communication amongst team members. However, this assumption could not be taken at face value in this sample, as geographical distance played a big part in how fast communication really happens:

"If you tell them something today, they come back to you tomorrow when we are sleeping, and when they work we sleep so it takes like a whole day to get feedback, so then everything takes extra time." (Participant 11)

Team characteristics, according to Joe, Tsai, Lin, and Liu (2014) are seen as another key driver apart from communication of virtual team performance. The outcomes of team activities require a firm level of internal and external facilitators. The internal facilitators or characteristics in this study were found to be the unique dynamics of the particular teams, the team cohesiveness of- and dependence on team members, as well as the proximate distance between team members. Participants experienced these characteristics as emotion events which impacted goal achievement.

Zofi (2012) stated that the experiences of virtual teams are in actual fact quite dynamic, as members often join and depart from the teams. Virtual teams change members based on the expertise needed for the specific project. It could therefore be possible that dependence on fellow team members is influenced by this, as team members' trust and accountability cannot be established in the fast-paced ever changing setup of these virtual teams.

When reflecting on the above issues regarding the team characteristics, the implication of these emotion events in practice seems clear, and as a matter of fact rather daunting, because the characteristics that enable effective team functioning, i.e. the internal facilitators, are missing. When the teams are not functioning at full capacity, everything else seem to lag behind. It has the potential to influence the functioning of the team in a negative way, because the so-called glue that keeps team members together is not present. As seen from the responses, the team members experience difficulty in coordinating efforts as a team which threatens cohesion and dependence on one another. It seems credible to expect that the internal facilitators of team characteristics could be enhanced by embarking on team planning, which is conceptualised as a teaming activity where a course of action is laid out by the team manager for members, old or new, to adhere to in order to attain the predetermined objectives (Mehta, Feild, Armenakis, & Mehta, 2008). This planning might not directly fix the trust and relationship issues in the team,

but it could create procedures that every team member should follow and adhere to, which could in the long run facilitate relationships between team members.

Theme 3: Job characteristics

Participants in the sample experienced knowledge interpretation and knowledge sharing, cultural diversity, role clarification, task requirements and task completion as events true to the characteristics of their particular job; these events all elicit emotions. The inherent characteristics of software engineering require effective knowledge sharing and these knowledge workers hold a higher than average technical competence, thereby experiencing difficulty in sharing and interpreting it in layman language, even more so when having to convey this information electronically.

> "*If it is easy for me to grasp the concept then in most cases you would feel that others should also easily grasp it.*" (Participant 4)

The sample reported that they operate in virtual teams from across the globe. This indicates that they are working with individuals from different cultural backgrounds. Cultural differences in these teams cause mistakes in messages and errors in translation. Communication and decision making between the different cultural groups also seem to differ which clearly has an impact on the goal of the team:

> "*So the frustration with not hearing people, sometimes because of the technology we use, or in other times because of the different accents, when it is issues that you are trying to understand. The issue is you are going to waste more and more time if you don't understand the problem correctly.*" (Participant 3)

It can be expected that cultural diversity, especially in virtual teams, could lead to a considerable amount of animosity between team members. Han and Beyerlein (2016) for example referred to cultural diversity in team work as a double-edged sword in organisations - it poses a great challenge, but also provides a greater range of knowledge. This indicates that members from different cultures are needed in virtual teams. In practical terms it is reasonable to expect that cultural diversity could hinder critical process factors in virtual teams, such as communication and relationships between team members (cohesiveness) because team members from different backgrounds bring different values and norms to the team.

The problems experienced with regard to role clarification could be due to the dynamic nature of virtual teams. In practice, role ambiguity could be a social dynamic risk which has the potential to hinder effectiveness and successful interactions between members (Horwitz, Bravington & Silvis, 2006). This is difficult to solve, as members often join and depart from teams depending on expertise needed. It might be worthwhile to address management responsibilities toward team forming to ensure successful role handover from one member to the next. This might additionally assist team members in getting up to date with where the project is heading, as well as with the sharing and interpretation of knowledge, preventing the team members from experiencing negative emotions.

The latter was another finding in the sample with regard to job characteristics. Participants experienced definitive affective events with high levels of frustration and helplessness due to a lack of understanding regarding their communication. Ghobadi (2015) showed that extensive burdens might be created through knowledge sharing in software projects. He stated that knowledge sharing is bound to suffer due to the clients', and in this case, team members' unfamiliarity with the software development requirements. These requirements are addressed in different programming languages which are difficult to communicate and comprehend. On a practical level it leads to a range of difficulties, such as the possibility of misunderstandings and an overall delay in project time.

In response to the latter, the Media Rich Theory of Daft and Lengel (1987) could be considered. It states that team members will engage in communication with each other when complexity about a specific task needs to be reduced. The media used for the communication will differ in its ability to communicate different interpretations of the sent information. The richer the media, the richer the communication regarding a certain task, reducing equivocality. Equivocality arises when the task, such as a software development project, lends itself to a range of different interpretations whilst being embedded in contextual knowledge (Klitmøller & Lauring, 2013). Canonical messages are typical unambiguous messages where knowledge about a certain topic is not necessarily needed to comprehend the message. Leaner media, such as e-mails, are effective tools to communication these messages. However, in the case of this sample, virtual team

members may want to use richer media such as video or teleconferencing to reduce misinterpretations, etc.

The requirements of the task, as well as the actual completion thereof, were another facilitator of emotions in the job characteristic theme. The participants indicated that they work with difficult complex systems which are usually bound by tight completion deadlines. Another crucial requirement of the task is that members need to work together for the sake of completing the task. This again indicates that team members are dependent on each other to share information regarding their progress in the specific task.

According to Maynard and Gilson (2014) it is important for teams to have a common understanding of what the task requires, as this will have an impact on how their work will be coordinated to eventually complete the task. This seemed to be the problem in this sample, as information was not centralised but rather distributed, causing members to be unsure of what they should do; this links up with role clarification. When reflecting on these problems, it seems as though the implementation of a centralised hub where work is checked in on a daily or weekly basis to ensure availability of information could lessen the extent of the difficulties participants experienced with regard to task requirements and task completion. Requirements of the task could additionally be aligned to the role clarification, which could reasonably be expected to lead to more effective task completion, alleviating the experience of negative emotions.

Theme 4: Work outcomes

The AET states that certain events at work have the potential to create emotions which have an impact on the goal achievement of the individual/team. Subsequent from the themes discussed above, it is clear that these events hold certain consequences for this sample's specific work outcomes in terms of feedback, work delays and work repetition. The delays caused by communication and different time zones caused feedback loops to exist, which placed added pressure on the time lines:

> "*So you wait and wait and emails get sent out and eventually - it's like a week or two later that things still haven't happened yet so you can't move forward.*" (Participant 1)

Due to the feedback loops and lack in communication, the work itself took longer to complete, causing a work delay. This was the most reported event and was explored as the biggest predictor of negative emotions in the lived experiences of virtual team members. Participants additionally expressed their frustration with having to repeatedly explain the same things, send the same information and discuss the same things over and over again without reaching a conclusion:

> "*Most of the time it is something that we have discussed previously and then I feel they are busy wasting our time because this has been discussed.*" (Participant 2)

Work delay refers to all the situations which cause a project to stagnate. Tong, Yang, and Teo (2013) stated that the only way to address undue delays would be to successfully address issues that hinder an optimal team structure. All the issues discussed above could possibly influence team structures and effective team functioning and therefore need to be addressed. Unnecessary hindrances such as feedback loops and work repetition are also impacting work outcomes. Moe, Cruzes, Dyba, and Engebretsen (2015) confirmed that software developers have complex jobs with complex needs; feedback seems to be just as an important need for them as the rest.

Reflecting on the latter, it seems as though teams should be coached into providing routine feedback on their progress to ensure that tasks and responsibilities in projects are continuously coordinated; this might possibly facilitate timeous completion of the project. The project team leader could instil a culture of regular routine meetings, whilst facilitating the feedback. This might also ensure that the frustration of work repetition is cancelled, or at least significantly reduced, because team members are kept up to date. Participants continually pointed out that they were mainly frustrated with the speed at which work in virtual teams is done. It can possibly be interpreted that the previous themes and subthemes - which lowered the pace against which virtual team members work - all contribute to a range of emotions.

After conducting the classic content analysis, participants reported the experience of an emotion eighty-five (85) times. With the second thematic analysis, these were clustered into eight emotion clusters inclusive of similarity and shared emotion traits, which is represented in table 4.

Table 4

Emotions in virtual teams

Participants experienced	Associated meaning in a virtual team context
Frustration	Virtual communication led to miscues, misunderstandings and difficulty in understanding different accents. Additional time was devoted to sorting out palpable issues which caused frustration.
Impatience, Irritation, Anger	Delays in communication led to higher levels of impatience, also causing irritation with the limitations in the communication mode. Anger in this instance was likely to be a residue reaction of frustration.
Anxiety, Nervousness, Stress, Caution	Work delays led to higher levels of nervousness, anxiousness and stress, especially when miscommunication took place and when there was little to no feedback on the progress.
Uncertainty, Confusion, Helplessness	Proximity created a feeling of uncertainty and confusion with the project. Team members abroad seemed to lack trust in the others, hence a feeling of helplessness on this side of the team.
Incompetence, Inadequacy, Embarrassment	Statements from team members of different cultural groups needed constant clarification, which led to feelings of incompetence and inadequacy. Some participants also felt embarrassed at their inability to understand one another during virtual team meetings.
Disappointment Despondency, Discouragement	Participants felt disappointed when communicating back and forth without reaching a conclusion or understanding which caused team members to feel despondent at the situation.
Relief, Accomplishment, Pride	These emotions were derived from the above negatives. When team members got a result despite the negative experiences, it left them feeling relieved and accomplished.
Glad, Happiness, Satisfaction, Surprise	Team members felt happy when there was no feeling of frustration, after they were able to communicate adequately with one another. When assistance was readily available, it seemed to ignite positive emotions. When the communication seemed to surpass the negative expectation, team members felt quite surprised.

Frustration

The dominant emotion experienced by the sample was frustration. Frustration is an emotional response associated with any event causing some form of complication in reaching the individual's personal or work related goals (Capdeferro & Romero, 2012). Earlier in this chapter it was stated that goal threatening events possibly produce negative emotions, and this finding seems to be the perfect illustration of that statement. Lazar, Jones, Bessiere, Ceaparu, & Shneiderman (2003) linked frustration with goal achievement and Crawford, Soto, de la Barra, Crawford, and Olguín (2014) stated that negative emotions, frustration in particular, are linked to discomfort in the workplace. Chhay and Kleiner (2013) recommended that virtual team members should strive to communicate clearly, explicitly and promptly in order to avoid frustration. This is, however, not always possible when working with knowledge workers such as software engineers (as discussed in the third emotion event theme). Several reasons for the frustration experienced in this sample were due to team members not being able to see the others face-to- face, as one participant indicated:

> "*He thinks I am going to say something now while I am waiting for him to say something, in a typical meeting he would have caught the cues and in a virtual call it just relates back to the emotion of frustration.*" (Participant 2)

Another possible challenge getting in the way of effective communication was the different accents team members have. It was evident from the interviews that team members struggled with different accents:

> "*It gets much more frustrating when the guy physically speaks another language like Chinese, Mandarin or Cantonese or Japanese, the frustration gets bigger very quickly.*" (Participant 11)

As was confirmed in this study, Rad and Levin (2003) predicted more than a decade ago that virtual team members will experience frustration due to collaborating with people of different cultural backgrounds. Frustration is not able to call forth energy and action about a specific situation such as anger for instance, but when left to develop, as with the case of this sample, it may result in aggression as the implication of this emotion on individual functioning in the workplace is captured in the work frustration-aggression model of Fox and Spector (1999). This

model states that aggression will be the result of frustration if the goal is continuously thwarted. This implies that the events which causes frustration should be effectively managed in an attempt to reduce the negative effect it has on these virtual team members to prevent it from developing into aggression.

Impatience, Irritation, Anger

Anger is described by Hendricks, Bore, Aslinia, and Morriss (2013) as a primary emotion that can be seen as a major defence mechanism in a given hostile situation, which particularly resulted as a residue emotion from the frustration in the sample. Obstruction to goals was shown to be an originator to anger-irritation by Oatley and Johnson-Laird (2014), and Scherer and Brosch (2009) also demonstrated that anger is inclusive of irritation, which indicates that anger will most likely be experienced together with irritation, as was confirmed in this sample. However, participants mainly felt angry due to the escalated frustrations and the distribution of information:

> "*So then I just put the phone down and then I was really like, firstly well frustrated, but actually really mad.*" (Participant 8)

> "*I have, also frustration, maybe anger, when you get falsely accused because you know, it is people who have all the information, all the teams in the different places, so it is easy for some to get the wrong idea of a situation.*" (Participant 1)

Cheshin et al. (2011) showed the powerfulness of anger in the sense that it can easily be transferred to fellow virtual team members through technologically mediated communication tools. This surely implies an impact on the team, as one member's experience of anger can increase the negative affect on the team as a whole. From the antecedents of anger in this sample, one is able to reason that once those are dealt with and effectively managed, the response of anger itself should decrease. This emphasises the importance of managing the events that elicit these emotions in an attempt to lessen the possibility of individual team members experiencing these emotions to ultimately possibly prevent anger, irritation and impatience of affecting the team as a whole.

Anxiety, Nervousness, Stress, Caution

The third cluster of emotions experienced was anxiety, nervousness, stress and caution. Scherer and Brosch (2009) showed that worry is related to trait anxiety. Scherer (2005) indicated that the word "worry" is a pertinent label for anxiety as affect category. Worry in this instance can be linked to nervousness and stress. Anxiety is therefore the main emotion in this cluster. Anxiety per se, according to Wiedemann (2015) is a rather complex emotion to describe as it refers to a variety of different emotion experiences such as fear and stress. Nevertheless, state anxiety is conceptualised as a temporary emotional state characterised by lingering feelings of again nervousness, apprehension and several physiological responses like sweaty palms and an increased heart rate (Endler & Kocovski, 2001). Trait anxiety, on the other hand, is more of a stable, definitive personality characteristic inclusive of all the factors in state anxiety (Wiedemann, 2015). This sample experienced state anxiety in response to certain situations like time pressure and a lack of feedback:

> "*Anxiety like a lot of anxiety, because you are pressed for time now you have to deliver so you don't have time to type away a conversation.*" (Participant 6)
>
> "*I sometimes also feel nervous to some degree if I can't get stuff finished and my project deadline is lurking and I have to, have to, get that feedback now and still there's nothing.*" (Participant 1)

In all personality theories one would find anxiety as one of the foundational constructs of self-concept. Endler and Kocovski (2001) stated that anxiety lies on a continuum that stretches from low levels to high levels. Once an individual's anxiety level reaches the end of the continuum, the danger of developing an anxiety disorder becomes a reality. This implies that serious attention should be given to containing and managing the events that lead to anxiety in virtual teams, as the situational contexts in this sample have surely contributed to eliciting anxiety. The practical implication of this emotion is illustrated by Spector and Fox (2002) who claimed that negative emotions such as anxiety will contribute to serious workplace implications, such as counterproductive workplace behaviour. Although this was not explored in this study, it may still be in the best interest of the organisation to prevent CWB practices and rather encourage organisational citizenship behaviour.

Formal team structures that are explicit may furthermore be a good way to reduce member anxiety and enhance trust at an individual level. At group level these structures could possibly assist in improving knowledge sharing between members, which could eventually enhance the team's capacity to accomplish the task goals (Pangil & Chan. 2014). From this it stands to reason that this cluster of emotions may possibly have an influence on both individual and team level, which could filter through to organisational level, as goal achievement seems to be influenced by this.

Uncertainty, Confusion, Helplessness

The proximate distance between team members in the sample created the fourth cluster of emotions: uncertainty, confusion and helplessness. Uncertainty and confusion presented itself more often, and is generally found in virtual team literature. Krumm et al., (2016) for instance, stated that uncertainty is one of the biggest challenges of working in a virtual team due to the delayed communication and the existence of a constant feedback loop. This was confirmed by this sample:

> "*You don't necessarily know what is going on.*" (Participant 11)
>
> "*Sometimes it will be a short reply, you are not sure if it is a joking reply or a serious reply and you are not sure if you have to give immediate feedback or if you can wait a little bit.*" (Participant 6)

It became clear that team cohesion possibly contributed to creating a feeling of helplessness amongst participants, as reported in the discussion of emotion events. Uncertainty and confusion might be closely related to role ambiguity, as participants experienced a lack of clarity about a certain aspect of the job. Schmidt, Roesler, Kusserow, and Rau's (2014) work confirms this and added role stress to the equation. These authors transferred these job characteristics to the workplace setting and indicated that it could contribute to the development of depression leading to impaired job performance, which could prospectively contribute to total impaired performance. Role ambiguity and role stress furthermore showed a strong relationship with anxiety as well (Örtqvist & Wincent, 2006). This implies that uncertainty about the role could possibly contribute to the experience of anxiety amongst these virtual team members, which was discussed in the previous emotion cluster. It could be expected that the role experience of the

project manager might influence practices in dealing with uncertainty, again highlighting the role of the team leader in reducing these soft factors that ultimately affect team performance (Huckman, Staats & Upton, 2009).

Incompetence, Inadequacy, Embarrassment

The next cluster of emotions was experienced entirely upon the basis of cultural diversity in the sample. Incompetence, inadequacy and embarrassment were the frequent emotions when team members had to communicate with their international virtual team members.

Incompetence and inadequacy were especially evident when team members had to repeatedly ask for clarification during virtual meetings:

> "*I think it is inadequacy, you feel stupid, you feel like there is something wrong with you.*" (Participant 5).

This emotion later gave way to embarrassment on the side of the team member who still did not understand after numerous failed attempts:

> "*It is embarrassing if you feel stupid when you have to keep on asking someone sorry, after you've asked them once, listen just repeat that what you were saying, then he repeats himself and you still don't understand him.*" (Participant 3)

The implication of cultural diversity in the workplace could be a major source of relationship and task conflict, as seen from this sample, because the inability to comprehend important speech messages from fellow team members can have daunting effects on the development of the given project. Although Chhay and Kleiner (2013) suggested cultural sensitivity training as a means to optimise team performance, this would not necessarily assist team members in exactly comprehending different accents. This is where text based and visual communication would be advantageous, as one participant indicated that once he had met someone face to face, it was as if he was able to understand him better over the phone. This emphasises the need for team members possibly meeting periodically, especially when it is for a longer term project which potentially requires more interaction between team members. If these meetings are completely out of the question, especially for international teams, text based communication might assist in

understanding certain terms better, possibly contributing to lowering the experience of this cluster of emotions.

Disappointment, Despondency, Discouragement

The sixth cluster of emotions was related to unresolved situations and included disappointment, despondency and discouragement. From the responses it seems as though these emotions can possibly have lower levels of energy attached to them and might pose a warning sign to team leaders, as members could possibly be negatively influenced before completing the project. One participant indicated that he eventually, after extensive back-and forth-communication over a simple topic, just hung his head misery as he could not take it anymore:

> "*At times you will just let your head down, it is just despondency.*" (Participant 2)

Another participant voiced his disappointment in the situation where he couldn't effectively solve the problem with the use of technologically mediated communication tools:

> "*I am disappointed because I now have to leave what I'm busy with and I know there are things that I need to get back to at the office. We couldn't communicate effectively to instantly solve the problem and now I have to drive to go and solve the problem there.*" (Participant 7).

Participants noted that they eventually felt discouraged after a day's work has passed without any progress in the project:

> "*I feel discouraged especially if this keeps on happening for the entire day. If you have to sit hours with this and still at the end of the day there is no understanding then you are just discouraged.*" (Participant 2)

Prolonged feelings of disappointment and discouragement could possibly influence individuals to become demoralised and might act as energy zappers in longer term projects. When reflecting on this, the possibility that morale could additionally be influenced is noted, as a large amount of work demands continue to compete for attention from the worker who is no longer motivated. If higher levels of energy are shown to have lasting affective states which lead to positive employee engagement (Cartwright and Holmes, 2006), it could then reasonably be expected that lower levels of energy could possibly contribute to negative affect and fatigue. This could

possibly be a threat to employee engagement. If these emotions are not managed, the implication seems to be lasting on the performance of the individual and the team, and ultimately the organisation.

There doesn't seem to be a straightforward solution to these problems in the particular sample, as it again relates to issues of miscommunication and knowledge sharing or knowledge interpretation. Equivocality, as discussed earlier, seems to influence these negative emotions, and might need to be addressed by possibly deciding on appropriate media for the sake of communicating effectively with regard to what specifically the task demands (Klitmøller & Lauring, 2013). When team members are able to communicate effectively, it might probably contribute to lowering these emotions as there might be fewer opportunities for being disappointed and discouraged due to more effective communication.

Relief, Accomplishment, Pride and Gladness, Happiness, Satisfaction, Surprise
Despite the experience of all the negative emotions which have already been discussed, the sample did report on the experience of positive emotions within the virtual team context as well. The positive emotions of relief, accomplishment and proudness in the first cluster, and gladness, happiness, satisfaction and surprise in the second cluster, were however experienced as a spin-off from the above negatives. It can possibly be seen as in-the-moment positive emotions rather more general positive evaluations of the lived virtual team experience. Participant 2 described this as not being able to control the virtual meeting situation and then feeling relieved when things go better than anticipated:

> "*You can't really control things, but with that goes, a lot of the time, relief, if you carry over the message and you can see ok great we are on the same page.*"

He then progressed by stating that he felt accomplished when he actually got a message across in understandable terms to his fellow team members:

> "*Before the time I was quite anxious because I don't quite know how we are going to do this, and there are a lot of guys, but if I get that result then it is quite a nice feeling of I have achieved something.*"

Proximity between members did not seem to be an issue when the communication between team members runs smoothly, as described by participant 7:

"Well there is also satisfaction, if you can communicate quickly with your team members or clients without having to drive to someone, then you can physically sit at home or well sit anywhere in the world and do your job."

Participant 8 discussed a situation where he was in die field, with his team members having to assist him back at the office:

"I was quite relieved and glad, and pleasantly surprised that when I phoned my team I was able to speak to them immediately, like within five seconds during each call I made, someone readily picked up the phone to assist, and that contributed to a positive emotion."

The statement of "pleasantly surprised" indicates that these virtual team members could possibly be experiencing a constant negative expectation regarding their communication with fellow team members. However, this has not been confirmed and needs more probing into. Ayoko et al. (2012) found that virtual teams experience emotions of frustration and anger in the early stages of project development, and more positive emotions during the final phases of the project. The positive emotions in this sample were only experienced in the work outcomes emotion events. This statement of Ayoko et al. (2012) could then also be true in this setting, as these positive emotions were only present when the team was already further into the project with a greater potential for outcomes to possibly be affected by emotions. In conclusion, it is possible to expect that the articulation of positive states might be necessary in order to possibly alleviate the experience of negative emotions, as positive emotions could provide the needed energy to maintain work effort and engagement to complete the project successfully.

From the discussion above it is clear that virtual team members experience a range of emotions on a daily basis, confirming the earlier statement that virtual teams do have an emotional content tied to it. These emotions needs to be regulated (Ayoko and Callan, 2010) and table 5 provides an indication of the emotion regulation strategies virtual team members employ after they have been faced by an emotion event and emotion experiences.

Table 5

Emotion regulation strategies employed by virtual team members

Regulation strategy	Subtheme	Application in a virtual team context	Response
Cognitive change	Perspective taking	Consideration is given to felt emotions to determine the consequences thereof.	"*I have to calm myself down and say 'ok he is clever in something else, let me explain it to him in terms of his understanding' and then we go on from there.*" P10
	Acceptance	Few changes can be made to the virtual context, so participants try to stay calm.	"*There isn't much that you can physically do in terms of virtual communication. I would describe it as trying to stay calm, so you start again at point one and explain from the beginning.*" P4
	Positive infusion	Upsetting situations are infused with a happy attitude, trying to see the flipside.	"*I'm actually a joker by nature so I'm not really the world's most serious individual, I always try and see the funny side of stuff and that's how I will calm myself down.*" P10
Attention reorientation	Rumination	After virtual meetings, participants brood about what happened and why it happened.	"*Well even after the meeting you would sit and think like why didn't I understand this person better, or wouldn't it have been better to meet them in person.*" P3
	Distraction	Taking time out by getting a cup of coffee or taking a walk outside to calm down.	"*It is better to physically remove yourself from that environment, our business park has nice gardens and trees and stuff, so it helps just to go outside and get fresh air.*" P3
	Concentration	Focussing on the goal that needs to be achieved regardless of the challenges.	"*I like move out of it and continue with what I was busy with. So it is like I always have this goal that I need to achieve and no one should stand in the way of that.*" P8
	Positive refocus	Shifting the focus from the negative emotion, onto something positive.	"*It is actually only when I arrive home and start talking to my wife about completely unrelated things that I stop thinking about it and then it goes away quickly.*" P8

	Physical/ Psychological removal	Participants make a conscious decision to change their thoughts by either taking action that would rectify the situation or by physically moving away from situation.	*"I get very frustrated and I just want it to get over with, then I just say yes ok I will send an email."* P11 *"I clear my head space by just removing myself from the situation, again walking away, for instance going to the kitchen to get a cup of coffee or something like that, to chill and regroup my thoughts on what needs to be done during the rest of the day."* P8
Situation modification	Problem solving Confrontation	Constant endeavour to modify the situation to find better ways of communicating to understand better. Approaching the negative situation/event with an action plan and readiness to engage.	*"My inner drive is to try and explain to the client exactly what the problem was, why it existed and how we can solve it in the future with virtual communication without me having to drive there."* P7 *"What I would do is to make a note and highlight it thereby I know I have to get back to it, and then force myself to listen."* P2
Response modulation	Physical aggression Concealing felt emotion	Throwing hands in the air, rolling eyes, showing gestures when in virtual meetings. Hiding, moving or placing emotions to the side while working.	*"I'll throw my hands and show a bit of gestures, but not really more than that. Most of the time you would look around at the others if there are other people in the room. Then you would roll your eyes or something like that."* P2 *"One task at a time, I mean you can't do them all, so just do one thing and then I put all emotion stuff, I put it away."* P6
Situation selection	Avoidance	Refraining from replying to emails when upset.	*"So you sort of want to cut off what feeds the emotion, so a client [team member] that is being silly or a client that is being inconsiderate or whatever, until the emotion dies off."* P3

	Social support	Venting with co-workers who share common office space and similar difficulties.	"*We would at the end of the day lash out amongst each other in a verbal manner. I picked up a verbal lash out method from the guy opposite of me, so I would just voice my frustration like 'this guy is such an idiot' and then I would feel better and take it from there. He will also just randomly start singing a song and then I will like finish it, so it's a method for both of us. When I feel I need to calm down then I would just start singing.*" P10
Learned behaviour	Proactive reframing	Expecting a certain known situation and applying corrective measures before it happens, in order to handle it better.	"*Pre meetings also help a lot, so before the meeting we would determine the things we need to get through, then you at least have a check list in the meeting to ensure you have discussed everything and all answers are obtained.*" P10

P indicates Participant

Cognitive change

The most reported on regulation strategy in this sample was cognitive change, used as a means to regulate the elicited emotions discussed in the previous section. Cognitive change is used when the individual wishes to change the emotional impact a given situation could have by modifying either their thoughts about the situation or their own capacity to deal with the demands of the situation (Gross, 2014). Positive reappraisal as a cognitive change strategy is the most researched regulation strategy according to Gross (2014) and is inclusive of perspective taking. The latter involves considering a different thought to the situation (Diefendorff, Richard, and Yang, 2008) thereby altering the impact of the emotion experience.

Participant 11 described using perspective taking when having to deal with the frustration of sharing knowledge with team members who didn't understand him, and it was also used by participant 4 when he got angry in the virtual team meeting:

> "*I think it is just a mental step you have to take if you know there is a call on the phone, then have to like, you have to make sure they stay with you and ask if they are like ok do they understand you.*" (Participant 11)

> "*You start weighing up the possible consequences to like confirm with yourself if this is really going to benefit the other person, especially in that specific situation. So I definitely consider the possible consequences of that specific emotion.*" (Participant 4)

In this sample it seemed as though the technologically mediated communication tools could have acted as an active facilitator amidst the expression of the negative emotion by possibly forcing the participant to regulate his response before sending off unwarranted messages, thereby taking perspective about the situation. From these responses it is clear that perspective taking is an effective strategy to alter the emotional impact. It seemed to have positively forced the individual to act differently, thereby lessening the effect of the negative emotion and putting a damper on the possibility of experiencing further stress.

Cognitive change was also used in the form of acceptance and positive infusion in this sample. Acceptance was used when participants could not do anything physically to change the situation and just had to accept their situation. It is according to Mikolajczak, Tran, Brotheridge, and

Gross (2009) just that: accepting the situation or one's inability to change it. These authors further stated that acceptance as regulation strategy can be protective in the sense that it could decrease negative emotions at psychological level, as well as pain at physical level. When finding oneself in a setting like a virtual team meeting, this strategy might be just the strategy to use, as there could most probably be nothing further the individual can actually do at that specific moment to change his/her lived experience, but to accept it. Furthermore, from the exploration it became clear that one participant used a positive infusion strategy in a frustrating situation to calm himself down. He ascribed this ability to his joking nature (see table 5), and one might need to guard against expecting every individual virtual team member to infuse his emotion experiences with a happy attitude.

Attention reorientation

The second most reported on regulation strategy was attention reorientation, which refers to cognitive efforts made by the individual to change the direction of his thoughts in a particular way when faced with an emotion eliciting situation (Jazaieri et al., 2015). The ways in which an individual can direct his/her attention is legion and could include the immediate environment or the self. In literature it involves distraction, rumination, concentration and positive refocus (Diefendorff et al., 2008; Mikolajczak et al., 2009). This study also yielded a new attention reorientation strategy called physical/psychological removal which involves conscious decisions to change one's thought experiences by either taking action that would rectify the situation, or by physically moving away from the situation. This should not be seen as distraction, as distraction refers to the diversion of one's attention away from the situation as a whole, or from the emotional aspects thereof (Mikolajczak et al., 2009) and not a physical/psychological removal.

In this sample the most common distraction method was external by taking a walk outside the office in the business park which has tranquil gardens and appealing scenery. Participants indicated that this helped calming them down before heading back to their computers.

> "*One time it happened and I pretty much just walked outside for the fun of it just to cool down.*" (Participant 5)

Although it seemed to facilitate goal-orientated behaviour, it should be noted that this strategy could have possible deleterious consequences for task performance, as task concentration is likely to take a dip. Nevertheless, it did seem to be a more effective strategy as opposed to rumination, which refers to the individual constantly brooding on what has been experienced, normally with a great deal of focus on the negative aspects of the situation (Gross, 2014).

Rumination was used especially amongst team members who worked within international virtual teams. These members indicated that long after the meeting they would sit and think of reasons why they did not understand the other members of the team better, and also contemplated on the idea of actually meeting the person face-to-face. This did not seem to be effective, as the emotion was not dealt with where and when it was experienced, in the virtual meeting, and could possibly have influenced the emotional response tendencies. This strategy was shown early in the nineties already to actually intensify the negative emotion whilst prolonging the bad experience (Morrow & Nolen-Hoeksema, 1990).

One participant additionally indicated that he orientated his thoughts away from the experience of bad team communication by concentrating on, for instance, an important aspect of what needed to be done in the project, thereby losing track of the negative emotion and giving the self the opportunity to contribute towards something else in an effective manner. Diefendorff et al., (2008) stated that concentration as regulation strategy involves the total absorption of the individual's thoughts in an activity other than, in this instance, bad virtual communication. This shows that the individual could possibly be able to use the conflicting situation of the team to his advantage in improving his own performance, thereby mitigating the effect on possible relationship conflict (Jiang, Zhang, & Tjosvold, 2013).

What also emerged as a possible attention reorientation regulation strategy in the sample was positive refocus. This indicates that instead of focusing on the actual emotion experience or emotion event, the individual rather reverts his/her attention to something positive (Sakakibara & Endo, 2016). This presented itself when the participant was able to interact with his spouse after having experienced an upsetting situation. Although this fits the description of positive refocus, it is important to note that the participant indicated that it was only after he had physically left

the office and met his spouse, who had a positive influence on him, that he was able to forget about the situation. This could possibly show that he did not regulate his emotions whilst in the experience, but only after he could physically change his attention. A possible conclusion can be drawn that his attention might have still been on the emotion throughout the course of the day, although this is not confirmed.

Situation modification

Situation modification in the form of problem solving and confrontation was reported third most in the sample. Situation modification is any effort directed towards altering the situation one is in by changing the emotion (Ochsner & Gross, 2014). These strategies played out in the form of participants constantly trying to solve the problems they were faced with, namely miscommunication and work repetition. Their approach to problem solving was to explain their statements until the team members grasped the meaning thereof, or by confronting the problem (which was bad communication modes) by trying different communication methods.

> "*I have to find a way to communicate better, I have to find a way to get a better*
> *communication channel or a way to solve things in the future.*" (Participant 1)

The confrontation actions included confronting the situation in spite of the negative emotions it may elicit and avoiding or escaping the situation as a whole (Mikolajczak et al., 2009). Confrontation was used when participants found themselves in the virtual team meeting with their international virtual team members. These team members, as reported earlier, have different accents which make understanding relatively difficult. One team member explained that he would, once in the meeting, made a note of what needed clarification, and then carried on listening to the team member (see table 5). By doing this, the participant regulated his anticipated frustration by confronting the problem and putting measures in place to avoid the negative emotion.

Participants also emphasised the need to make their team members aware of the misunderstanding as the first step to solve the problem. Davis, Gross, and Ochsner (2011) showed that it is possible for individuals to move closer or further away from an emotion- eliciting situation by modifying the situation. This was done in this virtual team setting and

seems to be an effective strategy to use. Boss and Sims (2008) stated that team managers hold enough power to modify the situation their team members find themselves in. Virtual team leaders could therefore play a significant part in what their team members experience and how they manage their emotions, before a behavioural manifestation of the emotion occurs. For example, experienced team leaders might be familiar with the day-to-day challenges and events virtual communication poses for an individual, and might possibly also be aware of what one should do to regulate these emotions. Team leaders could therefore either modify the situation when they anticipate emotion experiences, or they could mentor their individual team members on what should be done to regulate the emotion experiences before these experiences are developed into behavioural manifestations.

Response modulation

The latter was true in this particular virtual team setting, as one of the participants in the sample indicated that he would physically show his frustration and anger in a virtual meeting setting by throwing his hands in the air, rolling his eyes or putting his head in his hands:

> "*I'll throw my hands and show a bit of gestures, but not really more than that. Most of the time you would look around at the others if there are other people in the room. Then you would roll your eyes or something like that.*" (Participant 2)

A number of participants also indicated that they would, once they had become aware of the emotion, put it aside and continue with whatever task that needed their attention, or in scientific terms, conceal or suppress the felt emotion:

> "*So I am angry, but I first have to put my emotions aside because I actually need to speak to someone else.*" (Participant 8)

> "*I can easily hide my emotions or just put it aside to forget about it quickly.*" (Participant 9)

These two strategies refer to a term called "response modulation" (Gross, 1998) which involves suppressing ones reaction towards the experienced emotion. When weighing response focused strategies against the antecedent focused strategies, earlier literature shows that it increases the emotional experience (Gross, 2002), but more recently Aldao (2013) and Schutte, Manes, and Malouff (2009) found that it could actually be associated with beneficial outcomes such as more

life satisfaction and positive mood. This was proved to be true to some extent in this sample, as participants indicated that they would suppress their emotions when having to deal with their team members, who were their clients as well, or actually voice and show their frustrations towards their colleagues in close proximity. This strategy may have then facilitated the relationship with the client and contributed to feeling better, as described in table 5.

Situation selection

Situation selection presented itself in two specific strategies: social support and avoidance. Avoidance can be described as abstaining from communicating with other team members when emotional, and social support as the sense of seeking out co-workers who share similar difficulties to vent with. Situation selection occurs early on, before the individual enters into the emotion-eliciting situation, and involves taking certain actions that will make undesired emotions less likely to occur (Goldenberg, Halperin, van Zomeren, & Gross, 2015). By using social support, participants showed that they actively sought out situations where they were comfortable in sharing their experiences with colleagues or engaging in joined behaviour when they were facing negative emotions, such as starting to sing when they needed to calm down (table 5). It is possible that individual team members are able to regulate their emotions more effectively when they know they are not alone in it.

Beside from social support, avoidance was only reported on by one participant when he indicated that he made a deliberate choice to avoid contact with the team member who was involved in the emotional situation:

> "*So you sort of want to cut off what feeds the emotion, so a client that is being silly or a client that is being inconsiderate or whatever, then it would obviously be best to cut yourself off from that client for a while, till, until the emotion dies off.*" (Participant 3)

This strategy is described by Mikolajczak et al. (2009) as a very specific form of avoidance, called social withdrawal, which is seen as adaptive in the short-term. This could, however, have some negative influence on job performance, especially because the task involves collaboration between team members and should be managed carefully by the individual. In this particular case the team member is also the client the participant is referring to, therefore if team members

continuously abstain from replying when emotions are elicited, it has the potential to impair the relationship the two organisations might have.

Learned behaviour

The last emotion regulation strategy reported by the sample falls outside the process model of emotion regulation's classification. From the exploration the theme emerged as learned behaviour with a subtheme of proactive reframing. The sample reported that they approached the virtual team meetings, which in their case had a stigma of frustration and miscommunication attached to it, with an action plan. They specified certain points that needed to be said and achieved during the particular meeting, thereby cognitively anticipating the emotions they might feel should such an event present itself. They had already put measures in place to avoid this emotion (Fisher, Minbashian, Beckmann, & Wood, 2013).

> "*You learn to be more proactive by not waiting for the problem to come, and to try and foresee what could possibly be an issue and then acting on it.*" (Participant 1)

The latter indicates that participants could have extensive experience in the virtual team setting, and might have learned from these experiences how to manage their emotions. On the basis of their experience, participants would proactively reframe the anticipated emotion eliciting situations, in order to prevent the experience of negative emotions. Koole (2009) referred to this type of approach as successful proactive coping where the regulation of the emotion will subjectively precede the onset of the emotion, sometimes to such an extent that the individual may never experience the unwanted emotion at all. It could thus be that the individual's emotional sensitivity is activated during the anticipation of the unwanted emotion. This strategy is likely to bring long term benefits to the team, and virtual team leaders might want to consider focusing on creating emotion-preventative plans before each meeting that they anticipate will induce negative emotions on the side of the team members. It would be beneficial to look at the distinction between emotional sensitivity and emotion regulation in the virtual team setting in future research.

Conclusion, limitations and recommendations

Conclusion

The aim of this study was to explore and describe the emotion experiences of virtual team members, as well as the regulation thereof amongst virtual team members in the information technology industry. The purpose was to provide an understanding of the lived emotion experiences of virtual teams at work. As can be seen from the discussion on the findings, virtual teams are experiencing quite an extensive range of emotions which confirms the earlier statement that virtual teams do have an emotional connotation to them. Gallenkamp et al. (2011) predicted that the dynamics of virtual teams would pose unique challenges to these members and the inherent characteristics will create an emotional context. This was confirmed by this study.

This study showed that the virtual team's processes and outcomes are subjective to the emotional context team members find themselves in (Barsade & Gibson, 2012), as it was clear that emotion events were present in the three levels in an organisation. These events could have influenced the work outcomes in terms of delays, repetition and feedback. These events contributed to a range of emotions being experienced, both positive and negative. The AET confirms that emotion events that happen at work will elicit emotions on the side of the individual (Jonker & Van der Merwe, 2013). The discussions on each emotion experience showed the implication of these emotions in the work setting.

Frustration was, for example, the most experienced emotion in this sample and poses a risk to develop into aggression and anger when the individual's goals are continuously threatened by the events discussed. The circumplex model of emotion stated that the individual would experience unpleasantness when goals are threatened (Sacco, 2010), which was also confirmed in this study. These feelings hold quite important consequences for the individual in terms of his/her general affective state which surely impacts productivity, job satisfaction and well-being. The individual therefore needs to regulate their experienced emotions before productivity is impacted.

The sample concluded that they use different approaches to regulate their emotion experiences. It was interesting to find that virtual team members in this sample only tried to change the context they found themselves in by trying to find better ways of communicating. This was, however, not

possible with the dynamics in the team and individual level, and therefore participants resorted to alleviate the impact of the emotions by altering their thoughts about it. Participants additionally used their experience within a virtual team as a facilitating factor to cope with the elicited events.

To conclude, this study showed the importance of studying emotions in the context they are experienced in. The emotions experienced were shown to have daunting effects on functioning within a virtual team. The strong reliance on technology mediated communication tools for the sake of collaboration had a large amount of negativity attached to it in this sample. The deviations from face-to-face communication had a serious effect on the quality of the communication; Hosseini et al. (2015) predicted that there would be some effect on team members as a result of these technologically mediated communication tools. This study added value to virtual teams by providing insight into the emotions these team members experience on a daily basis, as well as how they regulate these experiences.

Limitations and recommendations

Although numerous valuable insights emerged from this study, it is not without certain limitations. The sample consisted firstly out of male participants, who secondly only represented one cultural group. Reporting could only be done on the lived experiences of one culture group and therefore the results are not seen as representative of the South African multicultural society. Although previous research has indicated that the IT industry, more specifically software developers, are predominantly male orientated, it would be valuable to see how female participants experience this phenomenon. A second limitation worthy to be noted is that the researcher could not interview all members of each virtual team due to logistics and organisational red tape. The conclusion can thus be drawn that the responses and experiences reported are not representative of the teams in entirety.

Qualitative phenomenological research is lastly also not free from limitations. Song (2016) for instance stated that it is not possible for phenomenology to achieve unification in theory, and that the researcher is not able to uncover the true essence of the phenomenon, but only the meaning of the experience. Frivold, Dale, and Slettebø (2015) noted that the interpretation of the interview data is dependent on the interpreter's pre-understanding and that the participants'

stories are again dependent on previous experiences and expectations, although the researcher did make every effort to share the experiences of the participants as accurately as possible by using in vivo quotes.

Future research endeavours could focus on firstly researching emotion experiences across the different cultural groups in South Africa, as well as virtual teams in their entirety. Another topic for research could be cross-cultural psychology programmes which could be used to train virtual teams.

Practical implications

Practically, this study draws special attention to the emotion events present in virtual teams on the three levels of functioning in an organisation, indicating the influence of this virtual team phenomenon across the board in an organisation. Virtual team managers should develop a nurturing team climate which encompasses cohesion and innovation amongst team members resulting in higher levels of trust. Xue, Bradley, and Liang (2011) stated that team climate will assist team members in developing a positive attitude towards one another which facilitates knowledge sharing as well as feedback, as team members could feel obliged to communicate timeously with others due to the normative pressures placed on them because of the strong team cohesion.

Additionally, care should be taken when assigning team managers to these virtual teams. From the discussion on the findings it seemed as though team managers can play an important role in alleviating most of the negative emotion facilitators such as communication issues, team characteristic issues as well as job characteristics issues, as these all stimulated a range of experienced emotions. This study highlighted the lack of guidance from virtual team leaders. These leaders are responsible for most of the interventions mentioned in the discussion and should therefore invest in appropriate training programmes which could assist management in identifying weaknesses and developing the appropriate skills that seem to be lacking (Xue et al., 2011).

From an emotion regulation perspective, it seemed as though most of the reported strategies were effective in managing the emotion events and experienced emotion. However, there were less effective strategies as well. Mindfulness interventions could assist virtual team members with the whole emotion regulation process, as they encourage exploratory attention to momentary experiences, irrespective of the unpleasantness connected to it (Farb, Anderson, Irving, & Segal, 2014). This will create an opportunity for insight into each individual's own mental habits in order to reduce automatic efforts to control or influence felt states.

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CHAPTER 3

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

Conclusion, Limitations and Recommendations

This chapter provides conclusions regarding the findings of the research article in chapter two. Conclusions are drawn with regard to the research objectives as set out in chapter one. Furthermore, the limitations of this research study are discussed. Finally, this chapter will conclude with recommendations for the organisation as well as research opportunities that emanated from this research.

3.1 Conclusion

The general objective of this study was to explore and describe the emotion experiences of virtual team members, as well as the regulation thereof. To reach this objective the researcher employed in-depth interviews to explore what the emotion events are that employees experience within virtual teams, to explore the emotions that employees experience in virtual teams, and to explore and describe how emotion events and emotions are regulated in virtual teams. From the findings four emotion events emerged, namely communication, team characteristics, job characteristics and work outcomes. Each event elicited various emotion experiences which were regulated by one or more of the five emotion regulation strategies proposed by Gross (1998), as well as a new regulation strategy which emerged from the sample.

The first emotion event, communication, included miscommunication, communication mode, non-verbal emotion cues and subject language. This event elicited two clusters of emotions, frustration and uncertainty, confusion and helplessness. Participants regulated these emotions by selecting a desired situation, modifying the situation, and reorienting their attention away from the emotion elicitor.

Team characteristics was the second emotion event and included team dynamics, cohesiveness, proximity and team dependence. Frustration and impatience, irritation and anger were experienced in this emotion event and the sample regulated these experiences by changing their thoughts about the emotion and reorienting their attention away from the emotion.

Job characteristics as the third emotion event included knowledge interpretation/knowledge sharing, cultural diversity, role clarification, task requirements and task completion. Four clusters of emotions were experienced in this event which were frustration; anxiety, nervousness, stress and caution; glad, happiness, satisfaction and surprise, and incompetence, inadequacy and

embarrassment. Participants regulated these emotions by changing their thoughts about it, reorienting their attention away from it and using their experience in virtual teams to deal with it. This is termed learned behaviour.

The last emotion event, work outcomes, included feedback, work delay and work repetition. These events elicited five clusters of emotion experiences: frustration; anxiety, nervousness, stress and caution; relief, accomplishment and pride; impatience, irritation and anger, and disappointment, despondency and discouragement. These were regulated by participants changing their thoughts about it, modifying the specific situation and suppressing their response tendencies after they had been activated by the emotion experience.

A discussion on the specific objectives of this study will now follow.

Specific objective 1: To conceptualise virtual teams, emotion events, emotion experiences and emotion regulation according to the literature.

Virtual teams

From the literature review it became clear that virtual teams are not empirically conceptualised with one preferred definition. Researchers in this field rather seem to capture it with three common characteristics in mind: the team's dependence on technologically mediated communication tools instead of face-to-face communication, the geographical distance between members of the same team, and the differences in time zones (Reed & Knight, 2010). From this it stands to reason that virtual teams consist of different team members who may or may not be geographically dispersed. Watanuki and Moraes (2016) stated that the dynamics of virtual teams are such that the members sometimes work without the possibility of face-to-face interaction.

These teams therefore need to collaborate using mainly technologically mediated communication tools, often across the border of the organisation and/or country. Saunders and Ahuja (2006) stated that virtual teams are assembled on a project-needs basis to execute a specific task to achieve a predetermined goal. Due to the strong reliance on these communication tools, various challenges have made their way into the inherent characteristics of these teams and according to Connelly and Turel (2016) cannot always be seen as universally successful. Gallenkamp, Korsgaard, Assmann, Welpe, and Picot (2011) for instance stated that these team members are faced with rather unique challenges because of the blurred boundaries and flexible working

arrangements. One of these challenges is the emotional context of the team (Rafaeli, Ravid, & Cheshin, 2012) and another the difficulty with interpersonal communication between team members. Wang and Haggerty (2011) additionally stated that the individual member's level of emotional skill has an impact on the group processes and overall performance of the specific virtual team.

Emotion events

Emotions can't be experienced without a preceding content-rich event, according to Barrett, Mesquita, Ochsner, and Gross (2007), which shows that something should have happened for an emotion to be elicited. De Vries, Lemmens, and Brokken (2009) confirmed the latter by showing that an emotion event is the first component in the process of an emotion experience and Scherer (2005) stated that the emotion event will trigger a response tendency in the form of an emotion being experienced. The preceding situations that call forth an emotion are called emotion events and are the foundation of the renowned Affective Events Theory of Weiss and Cropanzano (1996) which states that brief experiences at work will affect the behavioural reaction of the employee in terms of work attitudes and judgement driven behaviours. This theory states that daily emotion events have an impact on the way the individual thinks about his/her job, employers and team members. The AET also carries an important message to team managers/leaders: emotion events in organisational settings are not to be missed or placed in the backroom, even though they might seem relatively minor as these events, whether positive or negative, determine how the individual feels, thinks and acts (Ashkanasy & Daus, 2002). Basch and Fisher (2000) showed that emotion events seem to be caused by an individual's experience in dealing with another individual, rather than with dealing with things. Moreover, these experiences are especially cited as negative experiences.

Emotion experiences

Emotions are experienced in response to an emotion event. Colomo-Palacios, Casado- Lumbreras, Soto-Acosta, and García-Crespo (2011) acknowledged that the term emotion has defied definition simply because of its multifaceted nature. Izard (1977), as cited in Colomo- Palacios et al. (2011), claimed that the term emotion is inclusive of three aspects: a) the experience of a conscious feeling of the emotion, b) the processes that occur in the brain and nervous systems as a response to the emotion and c) the noticeable extensible patterns of the

emotion. This shows, according to Crawford, Soto, de la Barra, Crawford, & Olguín (2014), that an individual's emotions will surely influence his/her behaviour, especially in the way he/she interacts with another. Wang and Haggerty (2011) confirmed this by stating that the emotional skills level of an individual will certainly have an effect on the group processes and performances of a virtual team The experience of an emotion, according to Lambie and Marcel (2002), is subjective to the environmental demands the individual finds himself/herself in. This indicates that different contexts will elicit emotions to a varying degree. The circumplex model of emotion places the experience of an emotion in a shared view of either pleasantness or unpleasantness, which impacts goal achievement (Sacco, 2010). Experiencing an emotion as a result of an event promotes action urges, expressive behaviours and physiological activation (Jazaieri, Morrison, Goldin, & Gross, 2015; Scherer, 2001), which should be managed before it gets the opportunity to cause harm (Gross, 2014).

Emotion regulation

Emotion regulation concerns, in common terms, the regulation of an emotion. The main premise of emotion regulation is, regardless of feeling good, to achieve a prioritised goal; Tamir (2011) stated that individuals are not necessarily trying to change the emotion per se, but rather targeting related changes in their physiological, behavioural and motivational environments. Emotion regulation are according to Aldao (2013), Garnefski and Kraaij (2014) and Koole (2009) a constant attempt to manage ones emotional state in response to the environmental demands an individual is faced with.

A number of frameworks exist that conceptualise the different ways or strategies in which individuals can regulate their emotion experiences, but Webb, Miles, and Sheeran (2012) argued that the process model of emotion regulation, introduced by Gross (1998), is clearly the most used model to date. This model conceptualises the fact that individuals attempt to influence the emotions they are experiencing and expressing. It distinguishes between five different strategies or techniques that individuals can use to regulate their emotions. These five strategies are situation selection, situation modification, cognitive change, attentional reorientation and response modulation, the latter referring to a strategy employed after the response tendencies were activated (Gross, 1998).

Specific objective 2: To explore what the emotion events are that employees experience within virtual teams

From the emotion events experienced by virtual team members, four main events emerged, each with its own subevents which led to the experience of a range of emotions, therefore termed "emotion events." The four emotion events were communication, team characteristics, job characteristics and work delays. Communication events were present within the organisational level of functioning and included miscommunication, communication mode, non-verbal emotion cues and subject language. Team characteristics were present in the team level functioning and included team dynamics, cohesiveness, proximity, and team dependence. Individual level functioning included the events in the job characteristics theme which were knowledge interpretation/ knowledge sharing, cultural diversity, role clarification, task requirement and task completion. These three emotion events had an impact on the outcomes of the work, and were thus also found to be emotion events, termed work outcomes, which included feedback, work delay and work repetition. This event (work outcomes) could be referred to as performance objectives that are impacted by the three level objectives.

Watanuki and Moraes (2016) stated that the virtual team phenomenon presents challenges with regard to communication, coordination, cultural differences and relationships. It is reasonably expected that these challenges lead to time delays in completing project tasks which may threaten the virtual team's overall performance (Saafein & Shaykhian, 2014). This was confirmed by the present study in the work outcomes finding. These challenges were experienced as emotional in nature. which caused emotion events.

Qureshi, Liu, and Vogel (2006) highlighted the fundamental role communication plays in virtual team performance. These authors stated that communication in virtual teams does not just involve the passing of information to a receiver, but importantly also the understanding and proper use of the information. The technical limitations in communicating electronically are seen as a major obstacle, even more so with regard to rich information which is needed to build a common language and shared understanding (Powell, Piccoli, & Ives, 2004). The latter is especially important in knowledge intensive environments such as the IT industry represented in this current research. Lee-Kelley, Crossman, and Cannings (2004) agreed by indicating that the use of a common language is important for virtual team performance as it assists efficient and

precise communication whilst preventing potential misunderstandings and ambiguity, all which can place a damper on the experience of negative emotions.

The team characteristics refer to the dynamics going on inside virtual teams. Stahl, Maznevski, Voigt, and Jonsen (2010) stated that virtual teams have a tendency to grow larger in member numbers due to the resources and expertise needed for the current project. The larger the size of the group, the bigger the increase in reduced performance and productivity, which will lead to problems with cohesion and dependence on one another. Alnuaimi, Robert, and Maruping (2010) confirmed this by stating that large teams do correlate with low participation equality which, as shown in this current research, will have an adverse impact on the dependence on one another to complete project tasks. Watanuki and Moraes (2016) showed that team dynamics, cohesion in particular, had significant effects on both work outcomes and delivery speed, again confirming the work outcomes finding in this research.

Martins, Gilson, and Maynard (2004) stated that the individual characteristics, or job characteristics according to this research, play an essential role in virtual team settings to determine the overall team performance. In response to this, Wang and Haggerty (2011) argued that team members with high levels of individual virtual competence will be more effective, because they hold the necessary skills and abilities to coordinate effective interactions with fellow team members to accomplish and complete their work effectively. This individual virtual competence, as conceptualised by Wang and Haggerty (2011), includes virtual self-efficacy, virtual media skill and virtual social skill. The latter is especially important in fostering interpersonal relationships between members which could alleviate the negative emotion experiences found in this study. An important finding with regard to issues with cultural diversity presented itself in this level of work, which came as no surprise, as this is a particularly important topic in current virtual team research (Casey, 2010; Daim et al., 2012; Han & Beyerlein, 2016).

The factor most commonly affected in the virtual team setting is the work outcomes as shown by Connelly and Turel (2016); Wang and Haggerty (2011) and Watanuki and Moraes (2016). All the above emotion events seem to have an impact on the quality of work produced and the success of the project at the end of the day. Although the qualitative findings cannot establish a causal relationship, these themes are considered in literature as outcomes of the end result. Wang

and Haggerty (2011) confirmed that individual virtual competence will have a positive effect on work outcomes, and deemed it an important individual characteristic in successful virtual work settings.

Specific objective 3: To explore the emotions that employees experience in virtual teams

The sample group experienced a range of emotions which was grouped into eight (8) clusters of emotions with shared similarity and traits. The first six clusters of emotions were negative emotions and the last two, positive. The positive emotions were experienced in response to the absence of the preceding negative emotions. Frustration was divided into the standalone first cluster because of its high level of prevalence in the representative sample. The second cluster included impatience, irritation and anger. Anxiety, nervousness, stress and caution filled the third cluster of emotion experiences, and uncertainty, confusion and helplessness completed the fourth cluster. In the fifth cluster of emotions, the sample experienced incompetence, inadequacy and embarrassment. The sixth cluster of emotions included the experience of disappointment, despondency and discouragement. Relief, accomplishment and pride were experienced in the seventh cluster and the last cluster was characterised by glad, happiness, satisfaction and surprise.

From these experiences of emotions, one is able to determine that emotions are quite pervasive in everyday work experiences. Byron's (2008) research explained an intensified sensitivity to negative cues in a virtual setting as opposed to positive cues, which may explain the dominant experience of negative emotions in this research. Differences in emotion skill levels also exist due to lower social control, reduced feedback and difficulty in building trust (Hertel, Geister, & Konradt, 2005).

Emotions are a key contributor to aid in explaining why individuals behave differently when faced with the same context. Murphy, Hine, and Kiffin-Petersen (2014), however, warned that one should be cautious to attribute behaviour exclusively to the experience of a certain emotion. Carver and Scheier (1999), as cited in Murphy et al. (2014) showed that cognitive abilities such as knowledge and skills will have a far greater influence on the task specific behaviour. This indicates that an individual will rather revert to his/her cognitive functions when faced with a complex situation, rather than to his/her emotional functioning.

Murphy et al. (2014) furthermore found that emotion per se was not a significant predictor of performance in a virtual team setting, but rather acted as a role player in indirect feedback as it was shown to change the tenor of participants' instant messaging interactions. Additionally, it was found that emotions were easily elicited, even when participants were faced with the most mundane task in virtual settings. Evidence was also presented that emotion contagion (Barsade, 2002) could have been present, which shows that individual skill levels are highly subjective to the skills of the team members in a shared project task. This shows that virtual team members do have an impact on one another's emotional functioning specifically, which gives managers all the more reason to manage these emotion experiences in virtual team members.

Specific objective 4: To explore and describe how emotion events and emotions are regulated in virtual teams.

The participants in this sample group employed the five emotion regulation strategies as described by Gross (1998) to regulate the emotion events and emotion experiences discussed in the previous paragraphs. These five strategies are situation selection, situation modification, cognitive change, attention reorientation and response modulation. These strategies include different actions and will subsequently be discussed. Apart from these strategies, another strategy also emerged from the sample group, called learned behaviour. This will also be included in the discussion.

Situation selection in the form of avoidance and social support, and situation modification in the form of problem solving and confrontation, was used by the participants to regulate their emotion experiences in the communication emotion event. Situation modification was also used to regulate the work outcomes emotion event, specifically in the form of problem solving. Goldenberg, Halperin, van Zomeren, and Gross (2015) stated that situation selection and situation modification focuses on influencing the situation that provokes the emotion. By using situation selection, the participants might have focused on searching for specific situations which would diffuse their emotions, such as engaging in discussions with colleagues who share similar experiences, or choosing to totally avoid the emotion eliciting situation. They additionally reported about tailoring a situation to modify the emotional impact it could have had, for instance trying to find better ways of communicating virtually, or having an action plan ready when being in an emotion eliciting situation.

Attention reorientation also played a part in regulating emotions with members attempting to take another direction in their thought processes regarding a certain event. This form of regulation focuses on shifting ones attention from the emotion event to anything but the emotion event (Gross & Thompson, 2007). By using these strategies, virtual team members either focused on actively influencing their situation, or on adjusting the exposure to a stimulus by reorienting their attention from it (Goldenberg et al., 2015). The sample used five different strategies to decide which of the many aspects of the situation they would focus on, namely rumination, distraction, concentration, positive refocus and physical/psychological removal.

Rumination was used by participants in an attempt to get to the bottom of the problem. Distraction was used when participants needed to take a mental or emotional break from what was going on. Concentration was used in the sense of participants focusing on one important part of the situation, and positive refocus was used when the participant paid attention to something that made him happy, such as seeing his spouse. Physical/psychological removal additionally emerged as a new strategy where participants made a conscious decision to change their thoughts by either taking action that would rectify the situation, or by physically moving away from the situation to regroup their thoughts.

Participants also employed the two emotion regulation strategies which focus on changing or altering one's thoughts about the specific emotion: cognitive change and attention reorientation (discussed above) in both the team and job characteristics emotion event. This might possibly indicate that the participants knew there was no possibility of selecting different situations with regard to the team characteristics, but might rather focus on changing their thoughts about the experience of the emotions, so as to alter its impact on relational ties (Schmidt, Tinti, Levine, & Testa, 2010). Participants who employed cognitive change used perspective taking, acceptance and positive infusion as a means to change their thoughts.

In terms of perspective taking, participants considered their felt emotions to determine the impact thereof on the other team members. Acceptance was widely used in virtual meetings as little to no changes could be made to the situation and therefore participants accepted their situation by trying to stay calm. Lastly one participant also joked about the emotion experience, thereby attempting to infuse the situation with a positive attitude to change his thoughts about the situation.

Szasz, Szentagotai, and Hofmann (2011) found that reappraisal strategies (i.e. situation selection, situation modification, attention reorientation and cognitive change) are the most effective strategies to use for regulating anger, which indicates that cognitive change, as employed by the participants, was effective in regulating the specific emotion experiences. Sheppes, Scheibe, Suri, and Gross (2011), on the other hand, suggested that attention reorientation will be more efficient than reappraisal when the individual finds himself/herself in high-intensity situations. Some virtual meetings might present themselves as high in intensity and others not, therefore future research could focus on the intensity of the emotion events virtual team members are faced with to determine which strategy might be more effective to use.

An additional regulation strategy emerged from the sample, called learned behaviour, which was linked with the individual's experience in virtual teams. Wang and Haggerty (2011) stated that individuals with more experience in virtual team settings are inclined to explore various options to overcome challenges, and are better prepared to handle the uncertainties that go hand-in-hand with virtual work. Murphy et al. (2014) also indicated that individuals reflect on what happened previously. Learning consequently occurred and these experiences influenced members' emotions, leading them to behave in a certain manner. It is reasonable to expect that behaviour in this sense might be influenced by the individual's experience in virtual teams. Future research will be able to confirm is this is an effective strategy, since not all learned behaviour could confidently be regarded as effective.

Interestingly enough, the last regulation strategy, response modulation, was only employed to regulate the work outcomes emotion event. This could indicate that although the participants used effective strategies discussed above, they might possibly not have successfully regulated these emotion experiences to prevent emotional, behavioural and physiological response tendencies from being activated, and therefore reverted to modifying the emotion after its effect on bodily magnetisation had been noted (Goldenberg et al., 2015). This strategy has been shown to increase the risk of distress and maladaptive behaviour (Aldao, Nolen-Hoeksema, and Schweizer, 2010) and members should be not be encouraged to use this strategy. Nevertheless, it was used in this sample and presented itself in the form of physical aggression and concealing felt emotions. Physical aggression was used when the participant was directly involved in a

virtual meeting by throwing his hands in the air and rolling his eyes. Other participants preferred to conceal the emotions they felt in order to block the effect of the emotion on their work.

To conclude: it seems as though the use of cognitive change and situation modification as emotion regulation strategies is more effective when longer term success can be attributed to these strategies. Cognitive change can also be used by group members to adjust others' emotional reactions (Zaki & Williams, 2013). The latter could possibly play an important role when experienced virtual team members engage in mentoring new virtual team members (as discussed in the recommendation section).

3.2 Limitations

This present research produced valuable findings with regard to emotion experiences and emotion regulation in virtual teams, but research of this type is not without some limitations. The most important limitation to note is the unequal distribution of the sample group. The particular sample was only representative of one cultural group in South Africa and one gender group: white males. Although research has indicated that the particular occupation group, software developers, are mainly male oriented, one should not disregard the fact that there are females who also practise this occupation. Two further limitations from the sample group can be drawn with regard to emotion experiences, namely gender and culture.

Bianchin and Angrilli (2012) found that women, compared to men, are more susceptible to negative life experiences, which include the experience of negative emotions. This indicates that women in software development might experience the same emotions, but to a much higher degree. This highlights the importance that virtual team managers should manage these events that elicit emotions. Chaplin and Aldao (2013) provided evidence on gender-specific preferences in emotion expression, and in terms of emotion regulation, Zimmermann and Iwanski (2014) also showed gender differences, especially with women employing more social support and dysfunctional rumination, and men more passivity, avoidance and suppression of emotions. The conclusion on gender differences can thus be drawn that females do experience and regulate emotions differently than their male counterparts, which is a clear limitation in this study as no data was gathered from this group.

In terms of cultural differences, it is known that South Africa is richly diverse in cultural representation. The South African population represents four racial groups, Black African, Coloured, Indian/Asian and White, who according to Statistics South Africa (2014), make up the South African workforce, therefore it is reasonable to expect a culturally diverse workforce. Tamir et al. (2016) stated that individuals from different cultural backgrounds will certainly experience emotions differently. This is due to certain value systems which determine how the specific individual understands his/her world. This current research was conducted from a phenomenological stance, which thrives on the notion of explaining an individual's lived experience and the meaning he/she attaches to it. When contemplating the statement by Tamir et al. (2016), the limitation in this regard is clear.

Due to the qualitative nature of this study, it was not possible to generalise the findings Trotter (2012) stated that qualitative research has higher levels of epistemological difficulties with attempts to generalise the findings to larger population groups, even more so with highly diversified population groups who hold different beliefs, knowledge processes, values, etc. This might be due to the fact that the goal of qualitative research is not to generalise findings, but rather to provide a deep contextualised understanding of the participants' experiences in a particular case (Polit & Beck, 2010).

From a more technical point of view, limitations with regard to the researcher's experience in interviewing and data analysis are noted. Furthermore, the researcher could not control for possible external influences prior to interviewing the participants on their emotion experiences in their virtual team setting. The team in its entirety was also not interviewed due to logistical difficulty. Lastly, data gathering consisted only of one method, i.e. interviewing. The integrity of the data might have been increased if the researcher triangulated the study by employing focus groups and diary studies together with the interviews.

3.3   Recommendations

3.3.1   Recommendations for the organisation

The benefit of conducting this research was that one could gain a better understanding of the individual emotion experiences, including regulation strategies, in virtual teams. This research provided a glimpse into what it is like for individuals to function in a virtual team, from an

emotional point of view. Studies of this sort amongst virtual teams are limited and this research may just play an important role in guiding virtual team managers in managing these experiences.

The benefits of employing virtual teams are noted across the board in virtual team research. Benefits include mobilisation of remote resources, evolvement of intellectual capital, and greater opportunities in the globalised marketplace (Olariu & Aldea, 2014; Wang & Haggerty, 2009). Participants in this research also mentioned various benefits of operating in such a team, which included flexibility and increased paper trails. Currently, however, the existing challenges outweigh these benefits by a big margin. Early in the second millennium, Lee-Kelley et al. (2004) already predicted that the virtual approach to team working poses questions on the management of these teams, as well as the potential shortfall of conventional management styles to deal with the rather dynamic problems. However, according to Olariu and Aldea (2014), virtual teams will be able to reach their full potential with the appropriate processes in place.

Managers should take note that when there are clear business processes in place, virtual team members should be able to better understand their work in order to accomplish a specific organisational goal (Palmer, 2015). Communication is the key to understanding; improved communication means SMART goals, clearer direction, individual role understanding and defined interaction between team members to facilitate interpersonal relationships. To facilitate this statement, Olariu and Aldea (2014) and Palmer (2015) discussed a process of interrelated tasks which transform inputs into outputs, called Business Process Management (BPM). It is recommended that managers use BPM to improve effective functioning of an organisation's workflow, especially in a constantly changing environment. Olariu and Aldea (2014) provided an extensive overview of this, and the application thereof can be found in their research. However, a short overview of BPM will subsequently be provided.

The foundation of BPM project initiation is defining and considering the following foundational elements: the start of the project, the scope of the project, interconnections between activities and measurable figures (KPIs) of these activities. These elements should be drawn up in document form before implementing the project. At the beginning of the project, BPM requires an initial analysis of the current business processes – an "as-is." The data gathered in this analysis will model the improved process. This final process is called "to-be" which characterises the project objective. To improve processes by using BPM, Olariu and Aldea (2014) emphasised regular

one-on-one meetings to be held where virtual team managers meet with every member of the team to discuss the process and also to gain insight into the issues each individual team member may have. This could additionally facilitate interpersonal relationships between team members.

Saafein and Shaykhian (2014) regarded the management of cultural differences as an organisational challenge issue which poses a threat to the performance of any given virtual team. Virtual team members in this study provided evidence of the daily challenges with regards to cultural diversity, and for this reason it is strongly recommended that managers look at ways to alleviate these cultural issues. The researcher recommends training in cross-cultural teamwork, as Wang and Haggerty (2011) stated that cross-cultural knowledge and skills are important when virtual teams go global. It could be fruitful if individual team members could learn to understand the differences between the cultures they work with, as well as the ability to cope with these differences.

Alon, Boulanger, Meyers,and Taras (2016) stated that global virtual team managers should have high levels of cultural intelligence (CQ), which, according to Erez et al. (2013) "*pertains to the cognitive aspects of cultural awareness and cultural knowledge, as well as to the motivation to adapt to various cultural contexts and to behave accordingly.*" Ng, Van Dyne, and Ang (2009) stated that when team members on an international project actively engage in experiential learning, they show motivational CQ. On the other hand, when members act according to culturally accepted rules, and actively adjust when in an environment with different cultures, they show levels of behavioural CQ (Ang, Van Dyne, & Koh, 2006). These individuals will use culturally appropriate words, gestures and expressions, which will facilitate effective functioning in a multicultural context. Erez et al. (2013) showed that CQ develops over time with experience in virtual teams, but managers should actively promote a climate of high task interdependence by assigning a minimum number of interactions between members. Additionally, managers should ensure that virtual team members receive specific and to the point instructions for each phase of the project to minimise misunderstandings, which was clearly evident in this research.

It is additionally important for managers and team members to understand the roles that each adopts in order to keep up with the demands of high quality performance (Eubanks, Palanski, Olabisi, Joinson, & Dove, 2016). Role clarification can certainly assist in this regard and is therefore a recommended activity. Furthermore, it was noted that emotions are of a higher

intensity when communicating through technologically mediated communication tools and team members may influence other team members to experience the same emotions. This is where emotion regulation skills come in. Manzoor and Treur (2013) stated that if an individual applies a strong form of emotion regulation, no emotion contagion will take place. It is therefore recommended that managers consider emotional intelligence workshops. Emotional intelligence is defined by Mayer, Salovey and Caruso (2002) as cited in John and Eng (2014) as a set of skills involved in the processing of emotional information. Emotion regulation forms part of emotional intelligence, in the sense that it is a skill used to manage emotions properly (Mayer, Salovey, & Caruso, 2008).

Apart from the emotional intelligence workshops, another finding in this research leads to the last recommendation for the organisation. Participants indicated that they regulated their emotions based on what they knew, in other words, what they learned through experience. Virtual team managers might want to identify team members with appropriate experience in virtual teams and appoint them to assist new members in the virtual team. These knowledgeable team members can act as mentors to guide new team members, make them aware of what is happening in virtual teams, how to respond to uncertainties and what to do when emotions take centre stage.

3.3.2   Recommendations for future research

Specific objective 5: To make recommendations for future studies regarding emotion experiences and the regulation thereof in virtual teams

Apart from the limitations discussed in the previous sections, various opportunities for future research can certainly be made. Besides the fact that virtual team research is very important in a globalised market place, one is able to see that this particular field is indeed flourishing with numerous insightful contributions. Therefore, the researcher recommends that the following opportunities for future research be considered:

Firstly, in terms of industrial psychology literature in South Africa, this particular study participated in sparking interest in studying this phenomenon, as such studies in the South African context are very limited in scope. This qualitative review could inform future hypotheses on emotion experiences and emotion regulation in virtual teams to confirm and validate these

results, especially in terms of different population groups in the IT industry. The use of a quantitative approach in future research could additionally contribute to the elimination of the limitations discussed with regard to generalisation of the findings.

Secondly, Wang and Haggerty (2011) concluded that Individual Virtual Competence is an important characteristic that can determine the effect individuals have on work outcomes in virtual teams. This should definitely be taken forward in research, and future studies could look at ways in which IVC can be integrated in competency models for virtual team work. Krumm, Kanthak, Hartmann, and Hertel (2016) compared Knowledge, Skills, Attitudes and Other characteristics with the Great Eight competency model of Bartram (2005), and it is recommended that IVC should also be incorporated into such research. Additionally, Wang and Haggerty (2011) recommended that a separate dimension pertaining to cross-cultural skills should also be investigated. This could link with cultural intelligence discussed earlier.

Lastly, from a leadership point of view, Ayoko and Callan (2010) implied that the leader's level of competence in emotion management behaviour is important. The latter was evident in this research and future research could as a result focus on training programmes to train virtual team leaders in emotion management skills, including cross-cultural emotion management. The findings of this research support the need to continue to review the influence emotion and emotion regulation have on individual virtual team members, as they definitely seem to influence work outcomes.

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