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University of Pretoria

Job satisfaction in virtual and face-to-face teams for multiple generations in the workplace

Tshepisho Tabane

23258617

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ABSTRACT

The main theme of the research was to investigate associations between levels of job satisfaction in virtual and face-to-face to teams for multiple generations. Using quantitative techniques to test hypotheses, the study found that there are no significant differences between how multiple generations feel about job satisfaction. In addition, there was no evidence to suggest that there is a significant difference in levels of job satisfaction for multiple generations in different work teams. The level of utilisation of technology does not influence the levels of job satisfaction differently for multiple generations.

KEYWORDS

Job satisfaction, virtual teams, multiple generations, workplace, technology

DECLARATION

I declare that this research is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other university. I further declare that I have obtained the necessary authorisation and consent to carry out the research.

_____ _____

Tshepisho Tabane Date

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CHAPTER 1: Introduction to Research Problem

1.1 Research Title

Working in virtual or face-to-face teams for multiple generation individuals and the relationship to job satisfaction.

1.2 Research Problem

1.2.1 Globalisation and the organisation

The expansion of the phenomenon of globalisation has resulted in widespread global economic integration, including capital markets and supply chains (Preble, 2010). The effect of the global economic integration has changed the manner in which organisations structure work teams and utilise human capital required to operate competitively in global markets (Green and Roberts, 2010). One of the biggest challenges to organisations in this fast paced global environment is the ability to satisfy and retain highly skilled individuals in teams to achieve business goals better than competitors (Green et al., 2010).

1.2.2 Formation of virtual teams

The formation of virtual multinational teams is a direct consequence of globalisation on organisations (Symons and Stenzel, 2007). The changing nature of work and collaborative technological tools has facilitated the growth in popularity of virtual working as a cost effective way of operating across the globe (Symons et al., 2007). The constant need to be globally customer focused, have direct access to appropriate skills and respond to a rapidly changing business environment has seen the expansion of virtual teams as a form of a permanent organizational structure (Nunamaker, Reinig and Briggs (2009).

1.2.3 Emerging technologies

In addition to the changing work landscape, emerging technologies have enabled organisations to access global opportunities by positioning virtual teams at the frontier of market activity (Green et al., 2010). The utilisation of technological tools in the workplace has enabled teams to communicate across different locations, achieve consensus on actions, and implement business plans (Gibson and Cohen, 2003).

1.2.4 Multi-generational workforce

The world of work is also characterised by a diverse workforce (McCuiston, Wooldridge and Pierce, 2004). One of the key elements that represent dimensions of diversity in the workplace is generational differences (Cennamo and Gardner, 2008). This is supported by Sudheimer (2009) who argued that the different generational groups have been shaped by the events that occurred during their lifetimes, and thereby forged certain value sets that are characteristic of each group. She further argues that multigenerational differences are present in the workplace. In a study of workplace conflict, staff tension and dissatisfaction were mainly attributed to the differing views that nurses of different generations have of the world (Sudheimer, 2009). However, other studies have not come to this conclusion. They have instead criticised the generation theory and minimised the effect of generational differences in work behaviour and attitudes (Reeves, 2006).

1.2.5 Job satisfaction

The retention of increasingly mobile skilled resources has become a priority for organisations looking to operate successfully (de Pillis and Furumo, 2007). It is therefore important for organisations to understand the factors that impact on the levels of job satisfaction for employees (Ilies, Wagner and Wilson, 2009).

Changes in the world of work and the fact that each generation was introduced to the workplace at different points in time suggest that different work attitudes may exist (Cennamo et al., 2008). For organisations, it has become essential to; understand the generational differences in the workplace, understand how these differences impact on effective functioning of individuals at work, and understand how an organisational arrangement such as team structure or composition impact on the job satisfaction levels of individuals.

1.3 Research objectives

The objectives of the research are:

- To establish whether the differences in levels of job satisfaction can be attributed to generational differences.
- To ascertain whether the differences in levels of job satisfaction can be attributed to different work team structures.
- To establish the relationship between levels of job satisfaction of multiple generations and the type of work teams assigned.
- To determine whether the levels of utilisation of technological tools are associated with the type of work team assigned.

1.4 Research Motivation

The motivation for this research is presented from a literature and a business perspective.

A number of previous research studies have viewed virtual teams as temporary work arrangements than as a permanent operating model for organisations operating globally (Martins, Gilson and Maynard, 2004; Symons and Stenzel, 2007; Flammia, Cleary and Slattery, 2010). One can therefore argue that this view has limited the scope of research on job satisfaction, a variable most accurately measured over time, in virtual teams that are deemed a short-term grouping of skills. The proposed study provides a view of individuals who are permanently in virtual teams as a result of an organisational global operating model.

In addition, the research will add to the discussion on the validity and relevance of the current generational theories. This is a considerable addition given that the some of the key findings on generational differences has been based on studies conducted on college students in the United States.

Furthermore, the research will add to the discussion on job satisfaction drivers in a changing global work environment and the general topic of human behaviour at work.

As part of an overall skill retention strategy development process, organisations can utilise the findings of this study to further understand the role of job satisfaction in retaining and engaging different generation employees whose work is delivered through teams.

1.5 Research Scope and Structure

The research was conducted in a business unit within a large multinational organisation with operations in ten countries across the world and head office in London. It is an organisation that has over the past twenty four months embarked on an expansion of operations into emerging markets across the globe. This strategic decision has led to an increase in the formation of permanent virtual teams for the organisation and its strategic partners.

The scope of the research is limited to three employee generations. These are Baby Boomers, Generation X and Generation Y. Furthermore, the research is limited to employees working in the same organisation and governed by similar employee relations policies.

In terms of the research structure:

Chapter 2 presents a review of the literature that supports the problem identified.

Chapter 3 outlines the hypotheses and questions that have been formulated to address the objectives identified.

Chapter 4 presents the methodology that has been followed in the research process.

Chapter 5 presents the results of the quantitative data collected for the study.

Chapter 6 is an analysis and discussion of the results presented.

Chapter 7 concludes with recommendations, limitations and identification of areas for future research.

CHAPTER 2: Literature Review

2.1 Introduction

The two independent variables that are reviewed in this section are virtual teams and generational theory. The literature on these variables is reviewed to establish the respective relationship to the dependent variable, job satisfaction.

2.2 Virtual Teams

Virtual teams are explained as a group of people who work in an interdependent manner across space, time and organisational boundaries and most commonly use technology to communicate and collaborate (Kirkman, Rosen, Gibson, Tesluk and Mcpherson, 2002). Close relationships with customers, advancing communication technology and accessibility to skilled resources are some of the factors that have seen the rise and growth in virtual teams (Picoll, Powell and Ives, 2004).

2.2.1 Principles of Virtual Teams and Systems Theory

In their application of systems theory to virtual teams, Lipnack and Stamps (1997) asserted that the principles of people, purpose and links form a systems model of inputs, processes and produced outputs. People make up the virtual teams, purpose is the task that holds teams together and links are the

interactions and channels deployed to unite the team. The links in virtual teams are what distinguishes virtual teams from the traditional teams. The principles that provide an integrated framework for working in virtual teams is presented in table 2.1 below.

The inputs needed to develop virtual teams include independent members, cooperative goals, and multiple media (Lipnack and Stamps, 1997). Throughout the development process, the members share leadership and engage in interdependent tasks, which involve boundary-crossing interactions. The generated outputs include integrated levels of organizations, concrete results and trusting relationships.

Table 2.1: Virtual Team System of Principles

	Inputs	**Processes**	**Produced Outputs**
People	Independent Members	Shared Leadership	Integrated Levels
Purpose	Cooperative Goals	Interdependent Tasks	Concrete Results
Links	Multiple media	Boundary-crossing interactions	Trusting Relationships

The model presented above is underlined by certain characteristics that define a virtual team.

2.2.2 Characteristics of virtual teams

There are a number of attributes that characterise a virtual team (Kirkman and Matieu, 2003; Martins, Gilson and Maynard, 2004). These include:

- The level of technology support. There is a high degree of dependence on technological support in terms of daily operations.
- The percentage of time apart while working on a task. The virtual team members spend a considerably high proportion of work time apart from each other while delivering a task.
- The use of virtual communication tools. Communication of work instructions and feedback is facilitated by technological tools such as laptops, mobile telephones and online work systems.
- Synchronicity of communication. Different teams in different geographical locations and time zones can share and view the same information simultaneously because the communication tools are able to synchronise work instructions and data.
- Power in diversity. Virtual teams enable organisations to leverage diverse human capital competencies to work towards a common goal.
- Virtual teams can also represent different specialist functions and have multiple reporting lines.

The characteristics listed above highlight that working across different time zones, geographic locations, multiple teams and sometimes different cultures presents benefits to organisations and also pose challenges to the function of virtual teams (Nunamaker, Reinig and Briggs, 2009).

2.2.3 Benefits of virtual teams

Multinational virtual teams can deliver improved resource utilisation through flexibility and availability of human resources regardless of location (Green et al., 2010). Other key benefits of virtual teams include the promotion of work-life balance, and reduced commuting times which can lead to increased job satisfaction (Green et.al, 2010). The relationship between virtual teams and job satisfaction will be further discussed in the job satisfaction section of the literature review.

2.2.4 Challenges of virtual teams

The high dependency on technology can result in communication that is less efficient, employees experiencing difficulty in building relationships, reduced cohesion and lack of trust among virtual team members (Powell, Piccoli and Ives, 2004). Furthermore, the potential disadvantages include, low member commitment and work overload for some individuals (Symons and Stenzel, 2007).

Some of the challenges that virtual teams face in building team effectiveness are attributed to the role that socio-emotional connections between members plays (Flammia, Cleary and Slattery, 2010). A previous study found that socio-emotional communication played a key role in building team cohesion in the early stages of formation. In the following stages of team development, the

research found that although the use of technology varied, all the effective virtual teams used an extensive range of technological collaborative tools. An example is the teams that build relations using chat tools to communicate due to real-time feedback ability (Flammia et al., 2010).

In order to overcome these challenges and take advantage of the benefits, team members need to utilise the available resources to collaborate, co-operate, co-ordinate and foster commitment in the virtual team (Symons and Stenzel, 2007).

2.2.5 Virtual Team Effectiveness

The effectiveness of a virtual team can act as an important indicator of organisational performance. In the context of the study, effectiveness is measured by the outputs and levels of satisfaction of virtual teams (Lin, Standing and Liu, 2008).

Furthermore, there are three main dimensions that have been identified as key to virtual team effectiveness. These are computer mediated communication, task dimensional factors and social dimensional factors (Lin et al., 2008). These dimensions also support the virtual team's principles of people, purpose and links as proposed in the model by Lipmack and Stamps (2007) above.

a) Computer Mediated Communication

Computer Mediated Communication (CMC) refers to the high dependency on technology such as computers and mobile devices to function (Lin et al., 2008). This dependency, one could argue, implies that the effectiveness and efficiency of virtual teams require employees who have embraced technology as an enabler for daily work. One therefore suggests that a higher proficiency in technological communication tools of members increases virtual team effectiveness (Lin et al., 2008).

b) Task dimensional factors

Virtual teams are deemed effective when the tasks assigned are completed within the agreed parameters. In a study of virtual teams, it was found that the adoption of formal procedures and structured processes to complete tasks significantly increased efficiency and effectiveness (Lin et al., 2008). To implement these processes and procedures CMC tools were adopted. The study also found that tasks that lend themselves to a structured approach were most effectively accomplished during virtual meetings, whereas face-to-face interactions were better for relatively unstructured, discussion intensive tasks (Lin et al., 2008).

In addition, using CMC, virtual teams are able to deliver on the task of providing organisations with information processing capability (Thomas, Bostrom and Gouge, 2007). This task and capability includes:

- Visibility – having the ability to access accurate, accessible information in shared information repositories
- Manipulability – having information that can be jointly visualised and manipulated simultaneously by dispersed team members.

The traits highlighted above, one could argue, imply that virtual team effectiveness requires employees who are able to function and deliver a team performance by coordinating tasks, responsibilities and making decisions through the use of technology.

c) Social dimensional factors

The use of CMC has been found to promote the exchange of social cues to build interpersonal relationships between team members in the early development of virtual teams as well as foster cohesion and trust (Maznevski and Chudoba, 2000). Technology can provide structure to facilitate results-oriented team spirit and reduce levels of uncertainty in a virtual environment. Zigurs (2003) proposed that the establishment of a “distant presence” through the effective use of technology can assist the virtual team to move forward. The social dimensions highlighted above, one could argue, indicate that virtual

teams require employees who utilise technology to build interpersonal relationships.

d) Barriers to effectiveness and success

There are a number of technological problems that present barriers to success. Virtual teams require multimedia communications incorporating voice, data, text and video. This infrastructure is not always available and is in certain instances viewed as a cost to the organization. In addition, the cost of maintaining systems and adapting the interfaces to different virtual environments can be viewed as expensive and non-core (Zigurs, 2003).

From the above review of the literature on virtual teams the following conclusions can be drawn:

- Virtual teams play an important role in achieving the goals of an organisation with multiple operations across different locations.
- Virtual teams are driven by the interdependence of factors such as individual members of the team, the tasks to be performed and the technological collaborative tools deployed.
- The benefits and challenges of virtual teams place the use of technology at the centre of the ability of the team to function.
- The success of a virtual team is highly dependent on employees who have embraced the use and benefits of technology as a lifestyle to communicate, interrelate and function for effectiveness in their lives.

2.3 Generation Theory

A generation has been defined as an "identifiable group that shares birth years, age location, and significant life events at critical developmental stages that are shaped by socio-cultural environment" (Kupperschmidt, 2000, p. 66). The three generational groups that make up the current workforce in organisations are the Baby Boomers, Generation X and Generation Y (Kupperschmidt, 2000).

2.3.1 Baby Boomers – (1945-mid 1960s)

The generational boundaries that define baby boomers are generally set between 1945 and the mid 1960s with the decline in birth rates that signaled the end of the baby boom (Cennamo and Gardner, 2008). This generation was raised in post world war economies where the availability of jobs was on the rise. For baby boomers, work contributes significantly to personal identity (Stuenkel and Cohen, 2005).

a) Characteristics and work attitudes of Baby Boomers

There are a number of attributes that describe the character of Baby Boomers in the workplace (Cordeniz, 2002). These include:

- Loyalty to employers
- Dedicated workaholics who accept direction
- Value professionalism

- Seek public personal acknowledgement from managers
- Equate work with “self-worth, contribution, and personal fulfillment”
- Build a meaningful career instead of employment for economic gains

Smola and Sutton (2002) argued that the attributes listed above are interlinked. The extrinsic reward such as public personal acknowledgement was recognition for loyalty and commitment which was evident through hard work.

b) Baby Boomers and Virtual Teams

Baby Boomers have significant respect for institutional information, and they view technologies as tools used for managing records for the organisation (Simons, 2010). This limited view by Baby Boomer, acts as a barrier to the use of technology as a key facilitator in virtual teams and can render the employees less effective.

In terms of effective communication, Baby Boomers require feedback on the messages sent out to recipients. This can cause tension in virtual teams as the use of electronic media such as e-mail tends to delay feedback. In a study on the causes of task conflict, it was found that the lack of immediacy of feedback was the main contributor for Baby Boomers (Kankanhalli, Tan and Wei, 2007).

c) Conclusions on Baby Boomers and virtual teams

From the discussion on Baby Boomers above, one hypothesises that Baby Boomers prefer working in a face-to-face team than in a virtual team due to the following drawn conclusions:

- The sense of delayed feedback may be viewed by Baby Boomers as lack of professionalism, lack of dedication to work deliverables by other team members.
- May experience virtual teams as impersonal and be unable to link team deliverables to personal achievements.
- May experience a sense of lack of appreciation due to the dispersion of team members. Personal public acknowledgements will be limited as there is minimum face-to-face time.

2.3.2 Generation X – (1965 – 1978)

The Generation X population was born during the rapid technological and social change which represented among other things; financial, family and social insecurity. This generation therefore entered the workplace without the expectation of lifelong job security (Wallace, 2006). Economically, Generation X grew up with a stagnant job market, corporate downsizing, and limited wage mobility (Kupperschmidt, 2000).

Information technology and diversity have been identified as major influences in the lives of Generation Xers (Wallace, 2006). This generation grew up in an era

of video games, personal computers, the Internet, and automatic teller machines.

Generation X employees are also accustomed to great diversity in family situations, relationships, sexual orientation, ethnicity, gender roles, religion, and political affiliation (Wallace, 2006).

a) Characteristics and work attitudes of Generation X

There are a number of characteristics that define Generation X's attitudes towards work (Jurkiewicz, 2000; Kupperschmidt, 2000; Wallace, 2006).

- In comparison to Baby Boomers, Generation X is thought to place less emphasis on the value of work.
- This generation considers technology as a way of life and demand work environments that are technologically up to date.
- Continuous use of information technology promoted Gen Xers' expectations of freedom and flexibility in the workplace. This generation values flexibility and freedom to set own working hours, work-life balance and opportunities to learn new things.
- A lifestyle of daily decision making based on information and options available on the internet is adopted.
- Often depicted by Baby Boomer managers as slackers, lazy, cynical, unfocused, materialistic, arrogant and self-absorbed. Inversely, Baby

Boomers are viewed as overly cautious, competitive, blindly loyal and hierarchy worshipping.

- Work attributes include; practical approach to problem-solving, independence, creativity, innovativeness, comfort with change and multi-tasking (Smola and Sutton, 2002).
- What is sometimes viewed by the media as selfishness can be seen as independence and autonomy. This generation is more committed to individual careers than the respective organisations (Jurkiewicz, 2000). Generation Xers tend not to be loyal to any one organization, and are prone to changing jobs frequently as they also embrace change (Dayan 2005). While they take employability seriously, they are not attached to a career ladder. They can move laterally, take a break from the career and restart at a later stage (Simons, 2010).
- The personality traits include independence, resilience and adaptability. In the workplace, Generation Xers have the ability to work well in multicultural environments and a pragmatic approach to achieving objectives.

b) Generation X and virtual teams

From the description of the work attitudes and characteristics above, one hypothesises that Generation X individuals will be more effective working in virtual teams from the following drawn conclusions:

- Generation X experience more ease of functioning in a technology enabled environment like a virtual team than Baby Boomers.

- The work attributes of Generation Xers can be accommodated to a large extend in a virtual team.
- The ability to embrace change in a career enables a Generation X employee to work in virtual teams in different environments and organisations.
- The structure and the manner in which a virtual team works allow employees to strive for work-life balance lifestyle than in a face-to-face team.
- The personality attributes enable Generation Xers to work in multicultural environments with ease that are characteristic of virtual teams.

2.3.3 Generation Y – (1982 - 2000)

The most recent generation to enter the workplace is Generation Y. Generation Yers were raised during a period of economic growth and technological progress and thus are characterised by the rise of instant communication technologies (Simons, 2010). For example in the United States, they were found to be the most technically literate, educated, affluent, and ethnically diverse generation (Simons, 2010).

Although research on this generation and work values and attitudes is limited due to its recent entry in to the workplace, certain valuable characteristics have been identified.

a) Characteristics and work attitudes of Generation Y

There are a number of characteristics and attitudes that define Generation Y's views towards work (Loughlin and Barling, 2001). These include:

- Technology is embedded into everything this generation does. Generation Y adapts to change and new technology quickly. Technology is viewed as an enabler to meet their objectives in their personal and professional environments.
- Seek challenging and flexible jobs.
- Career development and global travel is more important to this generation than the other generations discussed in the above.
- Intrinsic value aspects such as mentoring and training in order to remain marketable are also important to this generation.
- Contributing to society is more important than income.

Similar to Generation X, this generation placed a strong emphasis on autonomy and having a balanced life (Cennamo and Gardner, 2008). Furthermore, Generation X and Y tended to seek work opportunities that would accommodate these work attitudes and were prepared to leave organisations if the needs were not met (Cennamo and Gardner, 2008).

b) Generation Y and virtual teams

From the description of the characteristics above, one hypothesises that similar to Generation X, Generation Y individuals will be more effective working in virtual teams from the following drawn conclusions:

- Generation Y is technology-dependent and expect automation in the workplace to support their skills at multitasking.
- The flexibility of a virtual team allows Generation Y the opportunity to juggle their work and non-work interests.
- Virtual teams allow employees to have more autonomy over their work and time management.

2.3.4 Conclusions about the different generations

The discussion on the three generations poses gaps to the validity and the magnitude of the differences identified. Some of the gaps are:

- There are attitudes that are common across the two or three generations. The attitudes such as flexibility, autonomy and work-life balance suggest that the generations have areas of commonality more than initially proposed by the generation theories
- The literature on generation identification has diverse views on the dates that segregate the different generations. This varied picture puts the reliability of the information that is captured as generation characteristics into dispute and doubt. This view is supported by Reeves (2006) who argued that the generation differences in the workplace are not significant.

2.3.5 Conclusions on the relationship between generation theory and virtual teams

The above literature on the different generations in virtual teams indicates that:

- The characteristics, attitudes and personal interests of employees point to Generation Xers and Yers being able to function more effectively than Baby Boomers in virtual teams.
- Furthermore, Baby Boomers are more likely to enjoy working in a face-to-face team than in a virtual team.

2.4 Job Satisfaction

2.4.1 Definition of job satisfaction

Job satisfaction has been defined as the extent to which employees like their work and represents a positive orientation toward a job (Sempane, Rieger and Roodt, 2002). It is about how an employee perceives his job based on the individual needs, values and expectations (Sempane et al., 2002). It is an attitude that employees have about their job and the organisation in which they work (Rad and Yarmohammadian, 2006). Other research has focused on job satisfaction as an evaluative state that varies over time. Job satisfaction is defined as "an attitudinal evaluation of one's job or job experiences on a particular work day" (Illies, Wagner and Wilson, 2009, p. 87).

2.4.2 Theories of job satisfaction

There are several standard theories related to job satisfaction. Edwin A. Locke's "Affect Theory" is one of the widely accepted theories. According to this theory, job satisfaction refers to what one wants in a job and what one has in a job (Locke, 1967). "Dispositional theory" put forth by Judge (2001) establishes a direct link between self-esteem and believing in one's talent as dispositions leading to job satisfaction.

Judge (2001) argued that there are core self-evaluations that determine one's disposition towards job satisfaction. These are self-esteem, general self-efficacy and locus of control. In this model, a higher level of self-esteem (the value one places on his/her self) and general self-efficacy (the belief in one's own competence) lead to higher work satisfaction. It is also important to have an internal locus of control (believing one has control over her or his own life, as opposed to outside forces having control) as it leads to higher job satisfaction (Judge,2001).

2.4.3 Job satisfaction and virtual teams

There is limited research that has been conducted on job satisfaction in virtual teams. This could be as a result of virtual teams seen mostly as temporary project arrangements.

In a study of younger generation nurses and job satisfaction, it was found that Generation X nurses responded positively to opportunities that increased

perceived autonomy and control. In this study, Generation X nurses were given opportunities to make their own work decisions through a shared governance model where the manager only played a facilitative role. Having direct control over their own immediate working environment was a major contributor to increased level of job satisfaction to the Generation X nurses. The empowerment scores of nurses were significantly higher after the implementation of the shared governance model which in turn led to increased job satisfaction (Lin, 2008). From this study, one deduces that a decentralized environment such as a virtual team can provide employees with a sense of empowerment, control and autonomy which Generation X and Y need to feel satisfied.

In a study of virtual communities, the findings show that two technology acceptance model components (perceived usefulness and ease of use) are key determinants of user satisfaction with virtual communities (Lin et al., 2008). From the finding above, one can deduct that job satisfaction in virtual teams is to a large extent influenced by employee perception of usefulness and integration of technology into every day work and tasks. Therefore as a group, Generation X and Y will have a higher level of job satisfaction than Baby Boomers in a virtual team that relies on high usage of technology.

In terms of non-task elements, teams that rely on computer-mediated communication reported lower levels of job satisfaction than face-to-face teams (Johnson, Bettenhausen and Gibbons, 2009). This is due to the perceived lack of urgency and interest when gathering suggestions and feedback from team members across different locations.

The contrary argument states that the very existence of virtual teams presents key benefits that can lead to higher levels of job satisfaction (Green et al., 2010). The high utilisation of telecommuting presented several benefits such as promotion of work life balance and reduced commuting time. These benefits result in a higher job satisfaction for employees in virtual teams and also enhance the organisation's retention strategies (Green et al., 2010).

2.4.4 Job satisfaction and multiple generation employees

In a study of job satisfaction among multiple generation nurses, Baby Boomers were significantly more satisfied than Generations X and Y (Wilson, Squires, Widger, Cranley and Tourangeau, 2008). With regard to pay, benefits and scheduling, Baby Boomers reported significantly higher levels of satisfaction than the two younger generations. In addition, Baby Boomers were significantly more satisfied than Generation X nurses with professional opportunities, praise and recognition, and control and responsibility. Baby Boomers and the Generation Y did not differ significantly in satisfaction with these three specific satisfaction components. Moreover, significant differences were not found between Generation X and Y nurses for overall job satisfaction or for any component of job satisfaction. This may reflect the fact Baby Boomers and Generation X have different values regarding public recognition and career goals. Baby Boomers may value and rely on organizations to provide public recognition and professional development opportunities (Wilson et al., 2008). However, the Generation X employees are believed to place higher value on

self-directed recognition and professional opportunities, relying less on the organization to meet these needs (Kupperschmidt 2000).

2.5 Conclusions on Virtual Teams, Generational Theory and Job Satisfaction

The following conclusions are drawn from the literature review above:

- Technology is at the centre of all activity in virtual teams. There are different types of technological communication tools that are used to foster contact and trust in interpersonal relationships. Therefore a higher proficiency in technological communication tools is associated with virtual team effectiveness.
- The conclusions from the literature draw attention to flaws in the generational theory. The view that individuals in a specified generation are similar and have the same view based on the date one is born is narrow and completely ignores multiple key factors that can affect the personality and views of an individual.
- Secondly, the literature indicates that there are similar characteristics, attitudes and expectations that feature across the different generations. Examples of these are the need for feedback, flexibility and autonomy. The question then becomes whether the identifed differences are significant indicators of employee behaviour in a work environment
- The need for work-life balance is an aspiration for all employees especially those with children and other interest outside of work, regardless of year they were born in.

- The idea that generation Xers and Yers were born and grew up in the technology era, does not equal to a high proficiency in technology. There are various other factors such as education and accessibility that play a role in familiarity with and utilisation of technology.
- The literature on job satisfaction points out that in virtual teams, the usefulness and ease of use of technology are some of the key determinants of job satisfaction.
- However, the literature on job satisfaction and multiple generations suggests that a combination of individual and organisational factors contributes to employee job satisfaction. With reference to an organisation, the job environment and job content play an influential role in determining levels of job satisfaction for all employees irrespective of age.

- In addition, there are several aspects in the job satisfaction literature that indicate that the three generations do not differ significantly. Examples of these are professional opportunities and responsibility.

- The brief account of job satisfaction theories and the definitions provided illustrate the complexity of this concept. As a subject for employee behaviour, the job satisfaction drivers go beyond the scope of this research.

This research aims to investigate whether generational differences have significant relevance in different work teams and employee job satisfaction. Furthermore the research aims to investigate the relationship that the utilisation of technology determines levels job satisfaction in virtual teams and in face-to-face teams.

CHAPTER 3: Research Questions and Hypotheses

The research is a study about the relationship between two independent variables, a subset independent variable and one dependent variable. The subset variable (utilisation of technology) surfaced as a key component to tackling the research problem from the literature review on virtual teams and generation theory.

Independent Variables:

- Virtual teams
- Generation Theory
- Utilisation of Technology

Dependent Variables:

- Job satisfaction

There are two research questions and four hypotheses that have been drawn from the literature discussed in the previous chapter.

3.1 Research Questions

I. Is there a significant difference in the level of job satisfaction between employees in virtual teams and face-to-face teams?

II. Is there a significant difference in the level of job satisfaction between Baby Boomers and Generation X & Y?

3.2 Research Hypotheses

- **Hypothesis 1**

H_0: Baby Boomers experience similar or less job satisfaction in a face-to-face team than in a virtual team.

H_1: Baby Boomers experience more job satisfaction in a face-to-face team than in a virtual team.

- **Hypothesis 2**

H_0: Generation X and Y experience similar or less job satisfaction in a virtual team than in a face-to-face team.

H_1: Generation X and Y experience more job satisfaction in a virtual team than face-to-face team.

- **Hypothesis 3**

H_0: Utilisation of technology is at most equally associated with job satisfaction in virtual teams than in face-to-face teams

H_1: Utilisation of technology is highly associated with job satisfaction in virtual teams than in face-to-face team.

- **Hypothesis 4**

H_0: Low utilisation of technology is at most equally associated with job satisfaction in face-to-face teams than in virtual teams.

H_1: Low utilisation of technology is highly associated with job satisfaction in face-to-face teams than in virtual teams.

CHAPTER 4: Research Methodology

4.1 Research Design

The research design that was adopted for the study is a quantitative and descriptive approach. According to Atieno (2009), a quantitative research method involves a method of deductive reasoning by use of measurable tools to collect relevant data. Descriptive studies seek to determine answers to who, what, when, where and how questions (Zikmund, 2003).

This design was appropriate for the study because the hypotheses put forward were about employees, work teams and how job satisfaction is impacted. The research method involved the analysis of data from relatively large numbers of respondents from which the information could be projected to represent the population as a whole by using a representative sample and various statistical techniques (Zikmund, 2003).

4.2 Population

The population for the study consisted of permanent employees of a business unit which is part of a multinational organisation with the head office based in the United Kingdom. The population was restricted to employees in levels M to Q of the organisation. Levels M to Q represent middle to senior management as proposed by commonly used human resources grading systems such as Hay

and Patterson. The years of service in the population ranges from two months to ten years. In terms of gender, there were 131 males and 159 females. The total number of employees in organisational levels M – Q is 290.

The business unit has four geographical locations in South Africa namely; Johannesburg, Cape Town, Durban and Port Elizabeth. The business unit is divided into seven departments namely; Actuarial, Sales, Product Development, Marketing, Operations, Finance and Human Resources.

4.3 Sampling

The sample for the study was a composition of employees working in virtual and face-to-face teams. A non-probability sampling method was chosen as the study's purpose was to test hypotheses for a specific situation. This sampling method was practical, cost and time efficient (Blumberg, Cooper and Schindler, 2005). A purposive heterogeneous sampling method was deployed to enable the sample to test the research hypotheses.

4.3.1 Sampling Frame

The sampling frame for the study was the permanent employee list which was obtained from the human resources department. The employee list was of employees who had been with the business unit for a minimum of five months on the date the data collection process started. This ensured that a) the sample

was from an updated population list and b) the sample was representative of employees who had the experience of working in teams in one particular business unit.

4.3.2 Sample Size

A total number of hundred and five (105) respondents participated in the study. This represented 36% of the population.

4.4 Unit of Analysis

The unit of analysis was the individuals of different generations in organisational levels M to Q who work in virtual and face-to-face teams.

4.5 Data Collection Instruments

A questionnaire was been developed to cover the various aspects to test in the hypotheses put forward.

- The questionnaire was accompanied by a letter of Consent for the participants (see appendix A).
- The introduction in the questionnaire positioned the study to the respondents and included instructions to complete the questionnaire. It also stated that participation is voluntary and participants could withdraw at any time without penalty. Confidentiality was assured and participant identity was not required and will not be captured.

- Section A comprised of questions to determine the demographic profile of each respondent. These included gender, age, job level, tenure in organisation and type of team (virtual or face-to-face).
- Section B comprised of a questionnaire to determine the level that respondents are familiar with and utilise technological communication tools.
- Section C comprised of a job satisfaction questionnaire measured on a five-point Likert scale. The already existing survey used was the Minnesota Satisfaction Questionnaire which will be discussed below.

4.6 Utilisation of technological communication tools questionnaire

The questions in section B were constructed by the research as an existing instrument covering the technology aspects discussed could not be sourced. The question statements were based on the literature on technology in the daily lives of individuals and how that impacts on utilisation and enablement of performance at work.

This section of the questionnaire was tested to clarify ambiguity and establish reliability of the instrument. The section was administered to a group of eighteen MBA part-time students who were employed on a full-time basis. Using the Cronbach Alpha coefficient, the reliability score for the 14 items was 0.753. When two items (play games and conduct research) were deleted the reliability of the instrument improved to 0.791. The details of the reliability scores are attached as appendix F.

4.6.1 Job satisfaction survey

The Minnesota Satisfaction Questionnaire (MSQ) which measures job satisfaction was administered in section C of the research instrument. The MSQ has been widely used in previous studies on job satisfaction. This tool can measure the intrinsic and extrinsic aspects of job satisfaction. It can also provide specific information on the aspects of a job that an individual finds rewarding and leads to job satisfaction. The MSQ is useful in exploring employee needs, and in generating information about the re-enforcers in jobs. The instrument is available in the long (100 questions) and short version where 20 items are utilised from the extended form (Weiss, Dawis, Englnad and Lofquist, 1967).

The MSQ was selected because it is a self-administered, untimed, hand scored instrument that takes about 10 minutes to complete. The Cronbach's Alpha reliability of the short version of the MSQ in previous studies has ranged from .74 to .96 on each of the 20 job facets and from .95 to .98 for the longer version (Anderson, 1982; R. E. Brown, 1997).

Evidence for the validity of the MSQ is derived mainly from its performing according to expectations, or its construct validity. Evidence of concurrent validity of the MSQ was collected from 25 occupational groups (Bolton, 1986).

a) Data Collection

The questionnaire was distributed by hand and emailed to employees. The self-administered questionnaire had a cover page that introduced the survey, the researcher and the purpose of the exercise. The cover page noted the assurance of confidentiality on the responses of employees.

The completed surveys were collected in three different ways.

- The completed questionnaires were collected by the researcher herself
- The respondents at other geographic locations submitted via e-mail
- The respondents posted the questionnaires to the researcher's work address.

b) Data Analysis

Statistical analysis was carried out using the SPSS statistical tool. The control variables identified for the study are organisation levels, tenure and gender.

It is important to identify the control variables in this study as previous studies have differing views on whether organisational level, tenure and gender have a significant effect influence employees' job satisfaction (Smith, 2009; Duffy, Ganster, Shaw, 1998).

Descriptive statistics was used to organise into frequency distributions, mean, standard deviation, skewness and kurtosis categories. Inferential statistics was used to test the hypotheses put forward for the research. To test the hypotheses one and two, the non-parametric sample test was used. Parametric tests are preferred because, in general, for the same number of observations, they are more likely to lead to the rejection of a false hull hypothesis (Polonsky and Waller, 2011). To test hypotheses three and four, a factor analysis to reduce the number of variables was carried out. This was to enable a cross-tabulation analysis of two variables captured in different sections of the survey. To test whether the associations in the three Tables are statistically significant, the chi square test of independence was carried out as it is an appropriate technique to use when one is testing for an association between two or more independent variables (Polonsky et al., 2011)

d) Research Limitations

There are a number of limitations that have been identified for the proposed study:

- The virtual teams in the proposed study form part of a permanent structure of the organisation. Therefore the views expressed by the respondents in the study are of employees who are not on short to medium term assignments as is suggested in some research about virtual teams. Therefore the findings may not be used to generalise for all types of virtual teams.

- The virtual teams in the population are all based in South Africa. A similar geographic location may bring a 'singular culture' bias to the responses of participants.
- The responses about job satisfaction will be from the questions asked through the chosen instrument. It should however be noted that the MSQ instrument is one of the globally accepted surveys to measure job satisfaction.

CHAPTER FIVE: RESULTS

5.1 Introduction

This chapter presents the results of the data collection phase of the research. The data was collected through a survey questionnaire from 105 respondents.

5.2 Control Variables

It is important to identify the control variables in this study as previous studies have differing views on whether organisational level, tenure and gender have a significant effect influence employees' job satisfaction (Smith, 2009; Duffy, Ganster, Shaw, 1998).

Analysis of covariance was used to test if the identified control variables (organisational levels, tenure and gender) have an effect on the outcome of job satisfaction in this study.

Table 5.1 below shows the results of testing the three control variables against the outcome of job satisfaction of the respondents. The R squared statistic for all the items in the job satisfaction questionnaire ranges between 0.7% and 15.2%. The p-values are above 0.05% except for the 'competence of supervisors in making decision' and the 'chance for advancement on this job'. Overall, this result shows that the identified control variables account for only 15.2% or less of the influence on job satisfaction.

Table 5.1: Analysis of covariance for tenure, organisational levels & gender

Dependent variables	R-Squared	P-value
Being able to keep busy all the time	0.015	0.813
The chance to work alone on the job	0.007	0.951
The chance to do different things from time to time	0.071	0.116
The chance to be "somebody" in the community	0.039	0.406
The way my boss handles his / her workers	0.080	0.077
The competence of my supervisor in making decisions	0.095	0.039
Being able to do things that don't go against my conscious	0.064	0.154
The way my job provides a steady employment	0.070	0.119
The chance to do things for other people	0.051	0.261
The chance to tell people what to do	0.034	0.484
The chance to do something that makes use of my abilities	0.021	0.701
The way company polices are put into practice	0.057	0.203
My pay and the amount of work I do	0.030	0.541
The chance for advancements on this job	0.152	0.002
The freedom to use my own judgement	0.058	0.199
The chance to try my own methods of doing the job	0.027	0.591
The working conditions	0.063	0.160
The way my co - workers get along with each other	0.040	0.386
The feeling of accomplishment I get from the job	0.029	0.564
The praise I get for doing a good job	0.059	0.192

5.3 Descriptive Statistics

The frequency distributions for the control variables of the study are presented as appendix B of the report. The demographic information of the sample used for the study is presented in the figures (5.1 – 5.2) below. Figure 5.1 and figure 5.2 represent how the sample was split between virtual and face to face teams. A positive response (yes) to achievement of 60% of team goals with a virtual team and a positive response (yes) to 40% of team members in a different geographical location indicated that the employee was part of a virtual team.

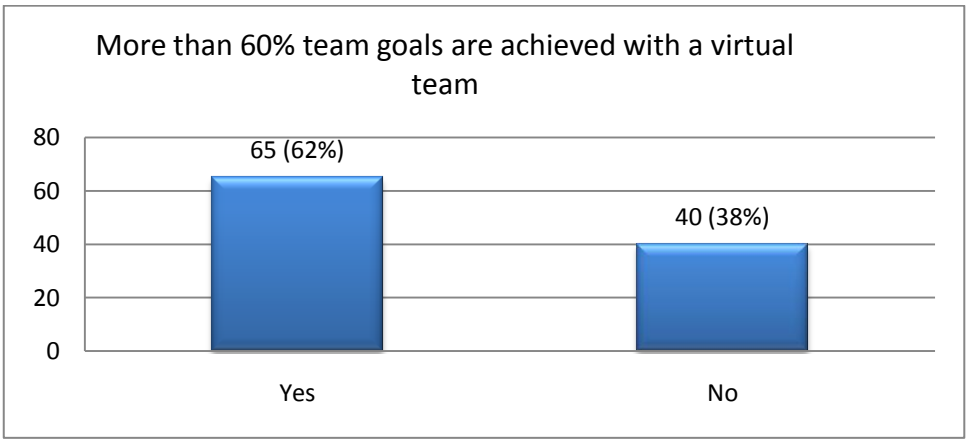

Figure 5.1: Frequency of team goals achieved with virtual team

Table 5.2 indicates the representation of the generations in virtual and face to face teams. There is a relatively equal split of baby boomer respondents between virtual and face to face teams. In contrast there are more Generation X and Y respondents in virtual than in face to face teams.

Table 5.2: Split of generations in virtual and face to face teams

		Generations		Total
		Generation X and Y	Baby boomer	
More than 60% team goals are achieved with a virtual team	Yes	45	20	65
	No	17	23	40
Total		62	43	105

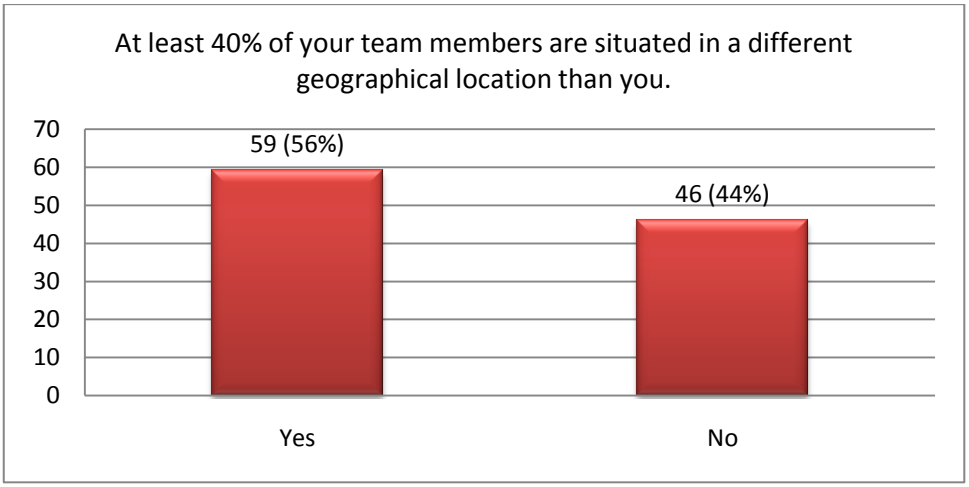

Figure 5.2: Frequency of geographical location of virtual team members

Appendix C shows that 80.9% of the respondents use technological tools as a significant part of their work activities. This high percentage of respondents to the utilisation of technological tools was indicator of the appropriateness of the chosen sample to conduct the research. Appendix D shows the age category distributions as discussed in the generational theory literature.

In section B of the questionnaire, appendix E presents the distribution of applications that respondents use outside of their work. A computer, laptop and cell phone are used by more than 93% of respondents outside of work. In addition, face-book which is closely associated with computers and mobile phone devices is used by 55% of respondents.

Table 5.3 and table 5.4 below presents the respondents' uses of technology in their daily lives. There is a skewness of an increasing level of usage from 'Sometimes' to 'Always' on eight out of the twelve items. The skewness towards a decreasing level of usage from 'Sometimes' to 'Never' is for items; to shop, participate in chat rooms, and make restaurant reservation.

Table 5.3: Frequency distribution of level of familiarity with technology

	Never	Almost Never	Sometimes	Almost Always	Always
To establish social networks	17	7	33	21	27
To pay bills	12	5	23	19	46
To keep personal financial records	11	11	16	30	37
To make investments in stocks and bonds	32	10	21	20	22
To shop	28	19	35	15	8
To get information about current events	3	5	14	36	47
To get information about entertainment, sports, and hobbies	5	10	11	32	47
To find news about travel or make travel arrangements	3	6	15	29	52

To participate in chat rooms	49	8	22	10	15
To get health or medical information	9	6	32	28	30
To make restaurant reservations	28	14	25	19	19
To make flight and holiday reservations	11	7	18	25	44

Table 5.4: Mean, Standard Deviation, Skewness 7 Kurtosis

	N	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic
To establish social networks	105	3.32	1.362	-.376	-.914
To pay bills	105	3.78	1.359	-.836	-.463
To keep personal financial records	105	3.68	1.334	-.747	-.615
To make investments in stocks and bonds	105	2.90	1.535	.000	-1.473
To shop	105	2.58	1.239	.229	-.869
To get information about current events	105	4.13	1.010	-1.243	1.238
To get information about entertainment, sports, and hobbies	105	4.01	1.173	-1.113	.306
To find news about travel or make travel arrangements	105	4.15	1.054	-1.215	.858
To participate in chat rooms	104	2.37	1.501	.581	-1.128
To get health or medical information	105	3.61	1.205	-.616	-.311
To make restaurant reservations	105	2.88	1.452	.047	-1.321
To make flight and holiday reservations	105	3.80	1.333	-.891	-.352

Table 5.5 and table 5.6 below present the frequency distribution of the responses to the job satisfaction section of the survey. In all the items, there is a significant skewness to the 'satisfied and very satisfied' responses except in the items 'My pay and the amount of work I do'.

Table 5.5: Frequency distribution of the level of job satisfaction

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Being able to keep busy all the time	33	48	17	4	3
The chance to work alone on the job	31	53	15	5	1
The chance to do different things from time to time	41	35	23	4	2
The chance to be "somebody" in the community	23	46	25	7	4
The way my boss handles his / her workers	27	45	18	11	4
The competence of my supervisor in making decisions	27	48	15	10	5
Being able to do things that don't go against my conscious	33	36	23	8	5
The way my job provides a steady employment	37	43	18	6	1
The chance to do things for other people	26	50	20	6	3
The chance to tell people what to do	22	45	27	7	4
The chance to do something that makes use of my abilities	30	51	13	8	3
The way company polices are put into practice	11	44	33	9	8

Table 5.5: Frequency distribution of the level of job satisfaction continued…

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
My pay and the amount of work I do	8	38	32	20	7
The chance for advancements on this job	14	36	32	15	8
The freedom to use my own judgment	22	50	20	10	3
The chance to try my own methods of doing the job	21	55	18	9	2
The working conditions	28	48	18	10	1
The way my co - workers get along with each other	17	54	19	7	8
The feeling of accomplishment I get from the job	23	59	17	5	1
The praise I get for doing a good job	26	48	22	6	3

Table 5.6: Mean, Standard Deviation, Skewness & Kurtosis

	N	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic
Being able to keep busy all the time	105	2.01	.946	1.094	1.414
The chance to work alone on the job	105	1.97	.849	.921	1.097
The chance to do different things from time to time	105	1.96	.970	.851	.378
The chance to be "somebody" in the community	105	2.27	1.003	.782	.472
The way my boss handles his / her workers	105	2.24	1.070	.805	.086

Table 5.6: Mean, Standard Deviation, Skewness & Kurtosis continued…

	N	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic
The competence of my supervisor in making decisions	105	2.22	1.083	.940	.356
Being able to do things that don't go against my conscious	105	2.20	1.113	.789	.028
The way my job provides a steady employment	105	1.96	.919	.834	.356
The chance to do things for other people	105	2.14	.955	.923	.909
The chance to tell people what to do	105	2.30	.999	.730	.407
The chance to do something that makes use of my abilities	105	2.08	.987	1.067	.968
The way company polices are put into practice	105	2.61	1.042	.689	.152
My pay and the amount of work I do	105	2.81	1.048	.341	-.524
The chance for advancements on this job	105	2.69	1.112	.396	-.454
The freedom to use my own judgement	105	2.26	.991	.791	.332
The chance to try my own methods of doing the job	105	2.20	.924	.856	.662
The working conditions	105	2.12	.948	.715	.040
The way my co - workers get along with each other	105	2.38	1.078	1.020	.615
The feeling of accomplishment I get from the job	105	2.07	.812	.866	1.288
The praise I get for doing a good job	105	2.16	.962	.857	.734

5.4 Reliability of Questionnaire Items

The Cronbach's Alpha coefficient was used to measure the reliability of the questionnaire used in the study. Table 5.7 shows the results of the reliability of the questionnaire. The Cronbach's Alpha coefficients are more than 0.70 (70%) for all the items. The detailed report of all items is represented as appendix F of the report. The Cronbach's Alpha does not increase when each particular item is deleted. This is an indication that in section B and C of the questionnaire, the questions are very consistent.

Table 5.7: Results of the reliability analysis of the questionnaire

Section	Number of items or variables	Cronbach' Alpha coefficient
B. Aims of the use of internet and technology tools	12	0.847
C. Feelings about the job satisfaction	20	0.882

5.5 Research Questions

Question 1: Is there a significant difference in the level of job satisfaction between employees in virtual teams and face-to-face teams?

The table 5.8 below presents the results of the test of difference in job satisfaction between virtual teams and face-to-face.

Table 5.8: Median, Range, P-value for virtual team and face-to-face team

Being able to keep busy all the time		Median	Range	P-value
The chance to work alone on the job	Virtual team	2	4	0.661
	Face-to-face team	2	3	
The chance to do different things from time to time	Virtual team	2	4	0.931
	Face-to-face team	2	3	
The chance to be "somebody" in the community	Virtual team	2	3	0.297
	Face-to-face team	2	4	
The way my boss handles his / her workers	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The competence of my supervisor in making decisions	Virtual team	2	4	1.000
	Face-to-face team	2	4	
Being able to do things that don't go against my conscious	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The way my job provides a steady employment	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The chance to do things for other people	Virtual team	2	4	0.067
	Face-to-face team	2	3	
The chance to tell people what to do	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The chance to do something that makes use of my abilities	Virtual team	2	4	0.010
	Face-to-face team	3	4	
The way company polices are put into practice	Virtual team	2	4	0.626
	Face-to-face team	2	3	

Table 5.8: Median, Range, P-value for virtual team and face-to-face team continued…

Being able to keep busy all the time		Median	Range	P-value
My pay and the amount of work I do	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The chance for advancements on this job	Virtual team	2	4	0.463
	Face-to-face team	3	4	
The freedom to use my own judgement	Virtual team	2	4	0.171
	Face-to-face team	3	4	
The chance to try my own methods of doing the job	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The working conditions	Virtual team	2	4	0.085
	Face-to-face team	2	3	
The way my co - workers get along with each other	Virtual team	2	4	0.072
	Face-to-face team	2	3	
The feeling of accomplishment I get from the job	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The praise I get for doing a good job	Virtual team	2	3	0.557
	Face-to-face team	2	4	
	Virtual team	2	4	1.000

Question 2: Is there a significant difference in the level of job satisfaction between Baby Boomers and Generation X & Y?

Table 5.9 below presents the results of the test of difference in job satisfaction between Baby Boomers and Generation X & Y.

Table 5.9: Median, Range, P-value for Baby Boomers and Generation X & Y

Being able to keep busy all the time			Median	Range	P-value
The chance to work alone on the job	Generations	Generation X and Y	2	4	
		Baby boomer	2	3	0.536
The chance to do different things from time to time	Generations	Generation X and Y	2	4	
		Baby boomer	2	3	0.837
The chance to be "somebody" in the community	Generations	Generation X and Y	2	4	
		Baby boomer	2	4	1.000
The way my boss handles his / her workers	Generations	Generation X and Y	2	4	
		Baby boomer	2	4	1.000
The competence of my supervisor in making decisions	Generations	Generation X and Y	2	4	
		Baby boomer	2	4	1.000
Being able to do things that don't go against my conscious	Generations	Generation X and Y	2	4	
		Baby boomer	2	4	1.000
The way my job provides a steady employment	Generations	Generation X and Y	2	4	
		Baby boomer	2	4	
		Baby boomer	2	3	1.000

Table 5.9: Median, Range, P-value for Baby Boomers and Generation X & Y continued…

Being able to keep busy all the time			Median	Range	P-value
The chance to tell people what to do	Generations	Generation X and Y	2	4	
		Baby boomer	2	3	0.560
The chance to do something that makes use of my abilities	Generations	Generation X and Y	2	4	
		Baby boomer	2	4	1.000
The way company polices are put into practice	Generations	Generation X and Y	2	4	
		Baby boomer	2	4	1.000
My pay and the amount of work I do	Generations	Generation X and Y	2	4	
		Baby boomer	3	4	0.327
The chance for advancements on this job	Generations	Generation X and Y	3	4	
		Baby boomer	3	4	1.000
The freedom to use my own judgement	Generations	Generation X and Y	2	4	
		Baby boomer	3	4	0.235
The chance to try my own methods of doing the job	Generations	Generation X and Y	2	4	1.000
		Baby boomer	2	4	
The working conditions	Generations	Generation X and Y	2	4	0.054
		Baby boomer	2	3	

Table 5.9: Median, Range, P-value for Baby Boomers and Generation X & Y continued…

Being able to keep busy all the time			Median	Range	P-value
The way my co - workers get along with each other	Generations	Generation X and Y	2	4	0.243
		Baby boomer	2	3	
The feeling of accomplishment I get from the job	Generations	Generation X and Y	2	4	0.128
		Baby boomer	3	4	
The praise I get for doing a good job	Generations	Generation X and Y	2	4	0.153
		Baby boomer	2	3	

5.5 Inferential Statistics

The results of the hypothesis tests that were conducted are presented below.

5.5.1 For Hypothesis 1:

H_1: Baby Boomers experience more job satisfaction in a face-to-face team than in a virtual team.

Table 5.10 below presents the results of the Mann-Whitney U test for each item on the job satisfaction scale for Baby Boomers in a virtual team and a face-to-face team. The p-values for each item in both teams are presented.

Table 5.10: Mann-Whitney U test (mean, range & p-values)

		Median	Range	P-value
Being able to keep busy all the time	Virtual team	2	3	1.000
	Face-to-face team	2	3	
The chance to work alone on the job	Virtual team	2	3	1.000
	Face-to-face team	2	3	
The chance to do different things from time to time	Virtual team	2	3	0.868
	Face-to-face team	2	4	
The chance to be "somebody" in the community	Virtual team	2	2	0.916
	Face-to-face team	2	4	
The way my boss handles his / her workers	Virtual team	2	3	0.791
	Face-to-face team	2	4	
The competence of my supervisor in making decisions	Virtual team	2	4	1.000
	Face-to-face team	2	4	
Being able to do things that don't go against my conscious	Virtual team	2	4	0.908
	Face-to-face team	2	3	
The way my job provides a steady employment	Virtual team	2	2	0.543
	Face-to-face team	2	3	

Table 5.10: Mann-Whitney U test (mean, range & p-values) continued…

		Median	Range	P-value
The chance to do things for other people	Virtual team	2	3	1.000
	Face-to-face team	2	3	
The chance to tell people what to do	Virtual team	2	2	0.138
	Face-to-face team	2	4	
The chance to do something that makes use of my abilities	Virtual team	2	4	0.866
	Face-to-face team	2	3	
The way company polices are put into practice	Virtual team	3	4	1.000
	Face-to-face team	3	4	
My pay and the amount of work I do	Virtual team	3	4	1.000
	Face-to-face team	3	4	
The chance for advancements on this job	Virtual team	3	4	1.000
	Face-to-face team	3	4	
The freedom to use my own judgement	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The chance to try my own methods of doing the job	Virtual team	2	3	1.000
	Face-to-face team	2	3	

Table 5.10: Mann-Whitney U test (mean, range & p-values) continued…

		Median	Range	P-value
The working conditions	Virtual team	2	3	1.000
	Face-to-face team	2	3	
The way my co - workers get along with each other	Virtual team	3	4	0.075
	Face-to-face team	2	4	
The feeling of accomplishment I get from the job	Virtual team	2	3	1.000
	Face-to-face team	2	3	
The praise I get for doing a good job	Virtual team	2	4	1.000
	Face-to-face team	2	4	

5.5.2 For Hypothesis 2:

H_1: Generation X and Y experience more job satisfaction in a virtual team than face-to-face team.

Table 5.11 below presents the results of the Mann-Whitney U test for each item on the job satisfaction scale for Generation X & Y in a virtual and a face-to-face team. The p-values for each item in both teams are presented.

Table 5.11: Mann-Whitney U test (mean, range & p-values)

		Median	Range	P-value
Being able to keep busy all the time	Virtual team	2	4	0.918
	Face-to-face team	2	2	
The chance to work alone on the job	Virtual team	2	4	0.620
	Face-to-face team	2	3	
The chance to do different things from time to time	Virtual team	2	2	0.227
	Face-to-face team	2	4	
The chance to be "somebody" in the community	Virtual team	2	4	0.264
	Face-to-face team	3	4	
The way my boss handles his / her workers	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The competence of my supervisor in making decisions	Virtual team	2	4	1.000
	Face-to-face team	2	4	
Being able to do things that don't go against my conscious	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The way my job provides a steady employment	Virtual team	2	4	0.259
	Face-to-face team	2	3	

Table 5.11: Mann-Whitney U test (mean, range & p-values) continued…

		Median	Range	P-value
The chance to do things for other people	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The chance to tell people what to do	Virtual team	2	4	0.212
	Face-to-face team	3	4	
The chance to do something that makes use of my abilities	Virtual team	2	4	0.821
	Face-to-face team	2	3	
The way company polices are put into practice	Virtual team	2	4	0.378
	Face-to-face team	2	2	
My pay and the amount of work I do	Virtual team	2	4	0.887
	Face-to-face team	3	3	
The chance for advancements on this job	Virtual team	2	4	0.293
	Face-to-face team	3	4	
The freedom to use my own judgement	Virtual team	2	4	0.165
	Face-to-face team	2	3	
The chance to try my own methods of doing the job	Virtual team	2	4	0.254
	Face-to-face team	2	2	

Table 5.11: Mann-Whitney U test (mean, range & p-values) continued…

		Median	Range	P-value
The working conditions	Virtual team	2	4	0.376
	Face-to-face team	2	3	
The way my co - workers get along with each other	Virtual team	2	4	1.000
	Face-to-face team	2	4	
The feeling of accomplishment I get from the job	Virtual team	2	3	0.865
	Face-to-face team	2	4	
The praise I get for doing a good job	Virtual team	2	3	0.186
	Face-to-face team	2	4	

5.5.3 Factor Analysis for Hypotheses 3 and 4

Before investigating the association between utilisation of technology and job satisfaction in Hypotheses 3 and 4, a factor analysis was carried out to a) reduce the number of variables from each instrument and to b) to group items that correlate into fewer variables.

The results of the factor analyses for section B (utilisation of technology) and section C (job satisfaction) are presented below in tables 5.12 and 5.13. The factors highlighted in a similar colour indicate correlation to each other and have been grouped into one variable identified by the researcher in table 5.14.

Table 5.12: Factor analysis for section B of questionnaire

	Component		
	1	2	3
To get information about current events	.804	.084	-.093
To get information about entertainment, sports, and hobbies	.727	.375	.000
To find news about travel or make travel arrangements	.710	.246	.269
To pay bills	.628	-.002	.548
To make flight and holiday reservations	.604	.439	.233
To participate in chat rooms	.010	.876	-.020
To make restaurant reservations	.114	.663	.337
To establish social networks	.332	.616	-.009
To shop	.160	.536	.403
To get health or medical information	.385	.532	.069
To make investments in stocks and bonds	-.075	.172	.758
To keep personal financial records	.566	.018	.633

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 5 iterations.

The factors highlighted in a similar colour indicate correlation to each other and have been grouped into one variable in table 5.14.

Table 5.13: Factor analysis for section C of questionnaire

	Component					
	1	2	3	4	5	6
The way my boss handles his / her workers	.770	.032	.122	.269	.084	.285
The competence of my supervisor in making decisions	.760	.016	.214	.154	.133	.418
The praise I get for doing a good job	.692	.307	.121	-.085	.088	-.033
The working conditions	.651	.284	.210	.095	-.005	-.170
The chance to do something that makes use of my abilities	.074	.731	.290	.071	.155	.065
The feeling of accomplishment I get from the job	.518	.653	.050	.191	-.072	-.110
The way my co - workers get along with each other	.403	.639	.186	.052	.083	.139
The chance to work alone on the job	.050	.587	.051	-.011	.437	.150
The way company polices are put into practice	.218	.571	.065	.256	-.101	.448
The chance to try my own methods of doing the job	.198	.073	.771	-.064	.228	.072
The freedom to use my own judgement	.235	.179	.681	.257	.272	-.215
The chance for advancements on this job	.317	.303	.645	.205	-.160	.141
My pay and the amount of work I do	-.034	.373	.496	.261	-.095	.371
The chance to tell people what to do	-.044	.072	.287	.730	.032	-.129
The chance to be "somebody" in the community	.293	.099	.080	.713	.060	.096
The chance to do things for other people	.073	.141	-.188	.624	.445	.237
The way my job provides a steady employment	-.124	.046	.202	.010	.717	.305
Being able to do things that don't go against my conscious	.288	.025	.066	.351	.550	.017
The chance to do different things from time to time	.460	.254	.087	.116	.548	-.251
Being able to keep busy all the time	.098	.178	.024	-.018	.243	.778

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. A rotation converged in 9 iterations.

Table 5.14: New factor grouping

Factors	Description/label	Number of variables loaded	Total % of variance explained
Section B: Utilisation of technological tools (n = 12)			
F1	Social	5	61.13
F2	Information gathering	5	
F3	Finances	2	
Section C: Feelings about job satisfaction (n = 20)			
F1	Recognition	4	69.40
F2	Management	5	
F3	Independency	4	
F4	Company policy	3	
F5	Time management and job security	4	

In order to conduct the chi-square tests, the responses from section B (utilisation of technology) and section C (job satisfaction) were coded into four groups. The two groups for Utilisation of Technology are a) rarely occurring (responses 1 and 2 on the applied likert scale) and b) occurring (responses 3, 4 and 5) on the applied likert scale. The two groups for Job Satisfaction are a) satisfied (responses 1 and 2 on the likert scale applied) and b) dissatisfied (responses 3, 4 and 5) on the likert scale applied. Table 5.15 below presents the codification to be used for the chi-square test.

Table 5.15: Codification to be used for the chi-square test

Factors	Possible minimum value	Possible maximum value	Codification (Mean)
Factors with two variables	2	10	< 6 : Rarely occurring or Satisfied >= 6: Occurring or Dissatisfied
Factors with three variables	3	15	< 9 : Rarely occurring or Satisfied >= 9: Occurring or Dissatisfied
Factors with four variables	4	20	< 12 : Rarely occurring or Satisfied >= 12: Occurring or Dissatisfied
Factors with five variables	5	25	< 15 : Rarely occurring or Satisfied >= 15: Occurring or Dissatisfied

a) For Hypothesis 3:

H_1: Utilisation of technology is highly associated with job satisfaction in virtual teams than in face-to-face team and

b) For Hypothesis 4:

H_1: Low utilisation of technology is highly associated with job satisfaction in face-to-face teams than in virtual teams

Tables 5.16 to 5.18 below present the results of association between utilisation of technology and job satisfaction. A cross-tabulation of the three factors of utilisation of technology with the five factors of job satisfaction was conducted for a virtual team and a face-to-face team.

Association of Utilisation of with technology for Social reasons and Job satisfaction

Table 5.16: Utilisation of technology for social reasons

		In Virtual team (n=65)		In Face-to-Face team (n=40)	
Job satisfaction		Rarely occurring	Occurring	Rarely occurring	Occurring
Recognition	Satisfied	7	51	2	27
	Dissatisfied	0	7	3	8
Management	Satisfied	6	51	2	30
	Dissatisfied	1	7	3	5
Independency	Satisfied	3	45	2	27
	Dissatisfied	4	13	3	8
Company policy	Satisfied	4	52	3	28
	Dissatisfied	3	6	2	7
Time management and job security	Satisfied	7	52	4	27
	Dissatisfied	0	6	1	8

Association of utilisation of technology for Information Gathering reasons and Job satisfaction

Table 5.17: Utilisation of technology for information gathering purposes

		In Virtual team (n=65)		In Face-to-Face team (n=40)	
Job satisfaction		Rarely occurring	Occurring	Rarely occurring	Occurring
Recognition P-value: /0.488	Satisfied	25	33	14	15
	Dissatisfied	3	4	7	4
Management	Satisfied	25	32	15	17
	Dissatisfied	3	5	6	2
Independency P-value: 0.779/0.727	Satisfied	20	28	16	13
	Dissatisfied	8	9	5	6
Company policy	Satisfied	23	33	17	14
	Dissatisfied	5	4	4	5
Time management and job security	Satisfied	27	32	20	11
	Dissatisfied	1	5	1	8

Association of utilisation of with technology for Finance reasons and Job satisfaction

Table 5.18: Utilisation of technology for finance reasons

		In Virtual team (n=65)		In Face-to-Face team (n=40)	
Job satisfaction		Rarely occurring	Occurring	Rarely occurring	Occurring
Recognition	Satisfied	20	38	8	21
	Dissatisfied	1	6	4	7
Management	Satisfied	19	38	8	24
	Dissatisfied	2	6	4	4
Independency P-value: 0.381/	Satisfied	14	34	6	23
	Dissatisfied	7	10	6	5
Company policy	Satisfied	17	39	9	22

	Dissatisfied	4	5	3	6
Time management and job security	Satisfied	21	38	9	22
	Dissatisfied	0	6	3	6

To infer the results of the sample to the rest of the population, a chi-square to test if the results in tables 5.16 to 5.18 are statistically significant was conducted. The results of the chi-square tests are presented below.

Tables 5.19 to 5.21 present the results of the chi-square test of independence that was conducted.

Association of utilisation of technology for Social reasons and Job satisfaction

Table 5.19: Utilisation of technology for social reasons

		In Virtual team (n=65)		In Face-to-Face team (n=40)	
Job satisfaction		Rarely occurring	Occurring	Rarely occurring	Occurring
Recognition	Satisfied	6.2	51.8	3.6	25.4
	Dissatisfied	0.8	6.2	1.4	9.6
Management	Satisfied	6.1	50.9	4.0	28.0
	Dissatisfied	0.9	7.1	1.0	7.0
Independency	Satisfied	5.2	42.8	3.6	25.4
	Dissatisfied	1.8	15.2	1.4	9.6
Company policy	Satisfied	6.0	50.0	3.9	27.1
	Dissatisfied	1.0	8.0	1.1	7.9
Time management and job security	Satisfied	6.4	52.6	3.9	27.1
	Dissatisfied	0.6	5.4	1.1	7.9

Association of familiarity with technology for information gathering reasons and Job satisfaction

Table 5.20: Utilisation of technology for information gathering reasons

		In Virtual team (n=65)		In Face-to-Face team (n=40)	
Job satisfaction		Rarely occurring	Occurring	Rarely occurring	Occurring
Recognition P-value: /0.488	Satisfied	25.0	33.0	15.2	13.8
	Dissatisfied	3.0	4.0	5.8	5.2
Management	Satisfied	24.6	32.4	16.8	15.2
	Dissatisfied	3.4	4.6	4.2	3.8
Independency P-value: 0.779/0.727	Satisfied	20.7	27.3	15.2	13.8
	Dissatisfied	7.3	9.7	5.8	5.2
Company policy	Satisfied	24.1	31.9	16.3	14.7
	Dissatisfied	3.9	5.1	4.7	4.3
Time management and job security	Satisfied	25.4	33.6	16.3	14.7
	Dissatisfied	2.6	3.4	4.7	4.3

Association of utilisation of technology for finances reasons and Job satisfaction

Table 5.21: Utilisation of technology for finance reasons

		In Virtual team (n=65)		In Face-to-Face team (n=40)	
Job satisfaction		Rarely occurring	Occurring	Rarely occurring	Occurring
Recognition	Satisfied	18.7	39.3	8.7	20.3
	Dissatisfied	2.3	4.7	3.3	7.7
Management	Satisfied	18.4	38.6	9.6	22.4
	Dissatisfied	2.6	5.4	2.4	5.6
Independency	Satisfied	15.5	32.5	8.7	20.3

P-value: 0.381/	Dissatisfied	5.5	11.5	3.3	7.7
Company policy	Satisfied	18.1	37.9	9.3	21.7
	Dissatisfied	2.9	6.1	1.1	7.9
Time management and job security	Satisfied	19.1	39.9	9.3	21.7
	Dissatisfied	1.9	4.1	2.7	6.3

6 CHAPTER SIX: DISCUSSION

6.1 Introduction

This chapter presents the discussion of the results presented in chapter 5. The discussion will structured according to the research questions and hypotheses.

6.2 Research question 1

Is there a significant difference in the level of job satisfaction between employees in virtual teams and face-to-face teams?

The results presented in table 5.10 show that there is no significant difference in the level of job satisfaction between a virtual team and a face-to-face team. Out of the twenty items measured, only three items were not similar. The difference between the two teams is one median point (virtual team = 2 and face-to-face = 3). The three items which reflected a higher level of job satisfaction in a virtual team are a) the chance to do something that makes use of my abilities; b) the chance for advancements on this job and c) the freedom to use my own judgement. This finding supports the work of Erickson et al, (2003) and Lin et al. (2008) in the following way:

- **The chance to do something that makes use of my abilities**. The task and results oriented nature of virtual teams ensures that the people with the right skills are put together. The employees are able to utilise their specialist skills to achieve the goals of the virtual team

- **The chance for advancements on this job**. From the literature, employees in virtual teams are exposed to a variety of global work projects. This multiple exposure and experience can assist employees to advance and take up more responsibilities in the virtual environment.

- **The freedom to use my own judgement**. Virtual teams allow for direct authority over own work and time management more than in a face-to-face environment.

Although the findings from the sample support the work highlighting a virtual environment, the differences are not significant enough to come conclude that the two work teams overall, foster different levels of job satisfaction in the workplace.

6.3 Research question 2

Is there a significant difference in the level of job satisfaction between Baby Boomers and Generation X & Y?

The results presented in table 5.11 show that there is no significant difference in the level of job satisfaction between Baby Boomers and Generation X and Y.

Out of the twenty items measured, only three items were not similar. The difference between the two teams is one median point (virtual team = 2 and face-to-face = 3). The three items which reflected a higher level of job satisfaction for Generation X and Y are a) my pay and the amount of work I do; b) the freedom to use my own judgement and c) the feeling of accomplishment I get from the job. One of these findings supports the work of Erickson et al, (2003) and Cordeniz (2002) in the following way.

- **The freedom to use my own judgement.** According to Cordeniz (2002), Baby Boomers prefer structure and direction in the workplace. On the other hand, Generation X and Y prefer autonomy over their work to enable them to take decisions on their own.

The median for the 'My pay and the amount of work I do' item was three, which represented neutral on the applied scale. Although this response is not negative, it does not support the literature from Wilson, Squires, Widger Cranley and Tourangeau (2008), who argued that Baby Boomers were more satisfied with pay and benefits more than Generation X and Y.

The differences identified by the findings of the study are relatively few to warrant a conclusion that there level of job satisfaction is different between Baby Boomers and Generation X and Y employees.

6.4 Hypothesis 1

H_0: Baby Boomers experience similar or less job satisfaction in a face-to-face team than in a virtual team.

H_1: Baby Boomers experience more job satisfaction in a face-to-face team than in a virtual team.

To test hypothesis 1, two samples tests were carried out on the twenty job satisfaction items for Baby Boomers in the virtual teams and in the face-to-face teams. As the responses were ranked from 'very satisfied' to 'very dissatisfied', the medians of the two samples was tested for significant difference (table 5.10).

The results from the non parametric (Mann Whitney U) test showed that the **null hypothesis cannot be rejected** and therefore the alternative hypothesis (hypothesis 1) is rejected. The p-values for all the items on the scale were above the .05 which is the confidence value that was used to test significance of difference. The only item that was close to .05 was the 'The way my co-workers get along with each other' with .075. This is the only item where a difference in median was observed and Baby Boomers agreed with the hypothesis proposed (table 5.10). The median difference was one point.

There are several other reasons that could explain the failure to reject the null hypothesis. These are:

- The literature on the characteristics of virtual teams highlights certain aspects that may appeal to Baby Boomers' character, work attitudes and contribution to job satisfaction. (Kirkman and Matieu, 2003; Martins, Gilson & Maynard, 2004). Examples of these aspects are flexibility and control.

- The finding supports the work of Reeves (2006) who argues that the border line cases in terms of classification of Baby Boomer and Generation X and Generation Y blurs the differences between the generations. The sample in this study had respondents who were on the border of the classification line and could possibly be identifying more closely with a generation group not assigned to.

- The findings of the study support the literature on the definition of job satisfaction. From the study, one deduces that the concept of job satisfaction can be determined by various factors that are beyond the scope of this research.

6.5 Hypothesis 2

H_0: Generation X and Y experience similar or less job satisfaction in a virtual team than in a face-to-face team.

H_1: Generation X and Y experience more job satisfaction in a virtual team than face-to-face team.

To test hypothesis 2, two samples tests were carried out on the twenty job satisfaction items for Generation X and Y in the virtual teams and in the face-to-face teams. As the responses were ranked from 'very satisfied' to 'very dissatisfied', the medians of the two samples was tested for significant difference (table 5.11). The results from the non parametric (Mann Whitney U) test showed that the **null hypothesis cannot be rejected** and therefore the alternative hypothesis (hypothesis 1) is rejected. The p-values for all the items on the scale were above the .05 which is the confidence value that was used to test significance of difference. The four items in the sample response that supported the hypothesis are a) the chance to be somebody in the community, b) the chance to tell people what to do c) my pay and the amount of work I do and d) the chance for advancement on this job (table 5.11). The median difference was one point.

There are other reasons that could explain the rejection of the alternative hypothesis. These are:

- Job satisfaction is possibly linked to external factors outside of the organisation. Example, ability to take a break from work (Dayan 2005, Simons, 2010) suggest regardless of type of team.

- For generation Y, although technology is a lifestyle, other aspects identified in the literature as expectations point to other variables that could influence job satisfaction. Examples of these are challenging jobs, mentoring and training (Cennamo et al., 2009). These expectations can also be accommodated in a face-to-face team. In addition, mentoring may probably require more personal interaction which is limited in virtual teams.

- Research shows that Gen X and Y are satisfied in virtual teams but not more than they are in face to face teams

- There are parts of the literature on the characteristics of Generation X and Y that supports the hypothesis. In addition to the items that have been discussed in hypothesis 1, the 'chance to tell people what to do' item supports the hypothesis proposed. This observation also links to the literature on the Generation X and Y in virtual teams. Kirkman et al. (2003) and Martins et al. (2004) argued that virtual teams are made up of function specialists. For Generation X and Y, this role enables employees to give instructions and decision-making views to team members on the specialist subject.

Although there is literature that supports certain aspects that support the hypothesis, the differences are statistically negligible.

6.6 Hypothesis 3

H_0: Utilisation of technology is at most equally associated with job satisfaction in virtual teams than in face-to-face teams

H_1: Utilisation of technology is highly associated with job satisfaction in virtual teams than in face-to-face team.

The results of table 5.16 to table 5.18 show that the utilisation of technology is associated more with job satisfaction in a virtual team than in a face-to-face team. However, the results of the chi-square test to infer the sample findings to the population do not support this finding (tables 5.19 to 5.21). One of the main assumptions to render the results of the chi-square test valid is the expected count in each cell to be equal or greater than five (5). In the study, this was not the case (see table 5.19 to 5.21). Therefore, the alternative hypothesis is rejected and the null **hypothesis cannot be rejected**.

There are other reasons that could explain the failure to reject the null hypothesis. These are:

- The job satisfaction instrument did not ask employees on whether the use of technology influences their job satisfaction perception.

- In the total sample, more than 80% of the respondents use technology for work activities (appendix C). This is also supported by the technology applications they use. For example, laptop, computer and cell phone.

- The alternative hypothesis is supported by the number of responses from the sample (table 5.16 to 5.18). This is a skew picture as the number of employees in both teams was not equal (see table 5.2). With twenty five more employees in virtual teams, there were more responses for this category.

- In addition, table 5.4 and table 5.5 in the previous chapter indicate the skewness of the responses for the utilisation of technology and job satisfaction questions. Irrespective of the nature of the team, the mean and skewness figures in the sample indicated that there is considerable utilisation of technology and a sense of satisfaction at work.

6.7 Hypothesis 4

H_0: Low utilisation of technology is at most equally associated with job satisfaction in face-to-face teams than in virtual teams.

H_1: Low utilisation of technology is highly associated with job satisfaction in face-to-face teams than in virtual teams.

The results as presented in table 5.16 to table 5.18 reject the proposed alternative hypothesis. Similar to hypothesis 3, the results of the chi-square tests did not meet the requirement of a cell count of five or more.

There are several reasons that could explain the rejection of the alternative hypothesis. These are:

- The results of the study indicate that low utilisation of technology is associated with job satisfaction in a virtual team than in a face-to-face. This could be influenced by a higher number of employees in virtual teams as discussed with hypothesis 3.

- The percentage of the total variance explained of 61% for utilisation of technology and 69% for job satisfaction.

Therefore, the alternative hypothesis is rejected and the null **hypothesis cannot be rejected**.

6.8 Summary of findings

6.8.1 Implications for theory

Sempane's define job satisfaction as an 'employee's perception on individual needs, values and expectations. These perhaps drive job satisfaction more than the generation one is classified under. Personal perceptions and expectations do not necessarily translate into group thinking and identity as a result of being born in the same period.

The results of the hypotheses tests bring out a few observations that support previous findings from other researchers. These observations do not necessarily translate into inference to a population and can therefore not form part of adding to the theory.

6.8.2 Unexpected results

Although the hypotheses proposed in the research were all rejected, the results of the statistical tests are supported by the work of other researchers.

6.8.3 Impact of the sample

The sample for the study played an influential role in the results of the research. The relatively high level of bias in the sample was evident from the concentration of responses on a certain area of the job satisfaction and the utilisation of technology scales. One of the reasons for this skewness and peakedness of the sample responses could be that the employees are employed in the same organisation and are governed by the same set of policies.

In addition, the researcher being an employee at management level where the research was conducted could have influenced the way the survey was answered. This is despite the assurance of confidentiality given.

7 CHAPTER SEVEN: CONCLUSION

7.1 Introduction

This chapter revisits the research problem/ objectives as outlined in Chapter 1 and presents the key findings of the research. Furthermore, recommendations to stakeholders will be presented as well as future areas for research.

7.2 Key Findings

This research has investigated the objectives as stated in the first chapter and has found the following findings.

- There is no significant difference in the level of job satisfaction between multiple generations.
- There is no conclusive evidence that suggests that there is significant difference in the level of job satisfaction between employees in virtual teams and face-to-face teams.
- There is no relationship established between the level of job satisfaction of multiple generations and the type of team structures assigned.
- The level of utilisation of technology does not influence the levels of job satisfaction differently for multiple generations.

The study confirms that there are differences in the three generations in the workplace. However, the differences are not significant enough to infer differences in preferences in work team and levels of job satisfaction.

7.3 Recommendations to Stakeholders

Apart from academic relevance, this research has implications for organisations.

Organisations need to be cautioned against categorising employees into different generations as proposed by certain research and thereby labeling individual behaviour and expectation into a group mindset and character. The association of world events, birth years and capability has not been statistically established. Therefore, organisations need to evaluate individual competence and not accept characteristics defined by generational theory as employee ability and aptitude.

It is also important for organisations to take the broader picture into account when it comes to understanding employee perceptions about job satisfaction. The nature of the organisation, its human resources policies shape employee behaviour, attitude and perceptions of job satisfaction. Even though the percentage of the influence of these other variables was not part of this research scope, the factors play an important role in determining drivers of job satisfaction.

For organisations operating virtual teams as a business model, this research

highlights the pitfall of identifying utilisation of a few technology applications as a driver for job satisfaction in a virtual team than a face-to-face team. Utilisation of technology may be a key driver of virtual team effectiveness but this does not infer increasing levels of job satisfaction. Looking at job satisfaction as a retention strategy in virtual teams will require investigation beyond matching generation characteristics to drivers of virtual team effectiveness.

7.4 Future Research

The following are recommendations for future areas of research

- The ability to function more effectively in a high technology utilisation environment does not necessarily translate into an increased level of job satisfaction for employees. Future research can explore the factors driving job satisfaction

- The relationship between job satisfaction of employees in virtual teams and turnover

- The types of virtual teams range from temporary short-term assignments to permanent long-term operating models. Future research can focus on factors affecting job satisfaction in virtual teams and separate short term and long term/ permanent scenarios.

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APPENDINCES

Appendix A: Research Questionnaire

Universiteit van Pretoria
University of Pretoria

GORDON INSTITUTE
OF BUSINESS SCIENCE

LETTER OF CONSENT: PARTICIPATION IN RESEARCH SURVEY

Good day,

I am conducting a study on multiple generation employees working in virtual and face-to-face teams, familiarity with technological communication tools and the association with job satisfaction.

To assist with this research, please will you complete the survey below which should take approximately 10 minutes to complete. You will be requested to:

- Indicate the degree of working in a virtual team or face-to-face team
- Indicate the degree of familiarity and use of technology in all aspects of your life and
- Indicate the level of job satisfaction in your current job

Participation in this survey is voluntary. By completing the survey, you indicate that you are consenting to participating in the study. You may withdraw at any time without penalty.

All data will be kept confidential. All the information from the survey will be used exclusively for the
purposes of this research.

If you have any concerns, please contact me or my supervisor. Our details are provided below.

Researcher: Tshepisho Tabane
Email: Ttabane@oldmutual.com
Mobile: 082 043 2303

Research Supervisor: Steve Bluen
Email: Bluens@gibs.co.za
Mobile: 082 924 2003

Signature of researcher: ____R.D.T. Tabane_____

Signature of participant: _____

Date: _____

Once completed, you have two options to return it.

1. Please insert your questionnaire in the envelope provided and post it for my attention (Tshepisho Tabane, Corporate Old Mutual)
2. Please scan the questionnaire and return it via e-mail to ttabane@oldmutual.com

Please submit the questionnaire to me by 30 September 2011.

Section A:

Please mark the most appropriate with an **X**.

Virtual teams are explained as a group of people who work in an interdependent manner across space,

time and geographic locations and most commonly use technology to communicate and collaborate.

More than 60% of your team goals are achieved with a virtual team	Yes / No

At least 60% of your time at work is spent utilising technological communication tools to collaborate and make decisions with team members situated in a different geographical location than you.	Yes / No

At least 40% of your team members are situated in a different

geographical location than you.

Yes	
No	

1. Gender

Male	
Female	

2. Age (in years)

3. Job level

P - Q	
M - O	

4. Length of time in current team

Less than 1 year	
Less than 3 years	
More than 3 years	

Section B:

Please indicate with a tick next to the application(s) that you use

Computer or laptop		Twitter	
Ipad		Skype	
Cellphone		Linkedin	
Microsoft communicator		Youtube	

Facebook		Skype technology	

Please indicate other applications that you use…….

Please complete the questionnaire below relating to the role that technology and the internet play in your everyday life.

1 – Means Never

2 – Means almost Never

3 – Means sometimes

4 - Means almost always

5 – Means always

I use the internet and technology tools to:

	1	2	3	4	5
To establish social networks					
To pay bills					
To keep personal financial records					
To make investments in stocks and bonds					
To shop					
To get information about current events					
To get information about entertainment, sports, and hobbies					
To find news about travel or make travel arrangements					
To participate in chat rooms					
To get health or medical information					
To make restaurant reservations					

To make flight and holiday reservations					

Section C: Job Satisfaction Survey

The purpose of this section is to collect data about how you feel about your present job, what things make you feel satisfied and what things make you feel dissatisfied.

Below are statements relating to how you feel about your current job. Please mark with an **X** the block that best describes how you feel about your job on the scale provided.

Very sat. Means I am very satisfied with the aspects of my job

Sat. means I am satisfied with the aspects of my job

N. means I cannot decide whether I am satisfied or not with the aspects of my job

Dissat. Means I am dissatisfied with the aspects of my job

Very Dissat. Means I am very dissatisfied with the aspects of my job

---

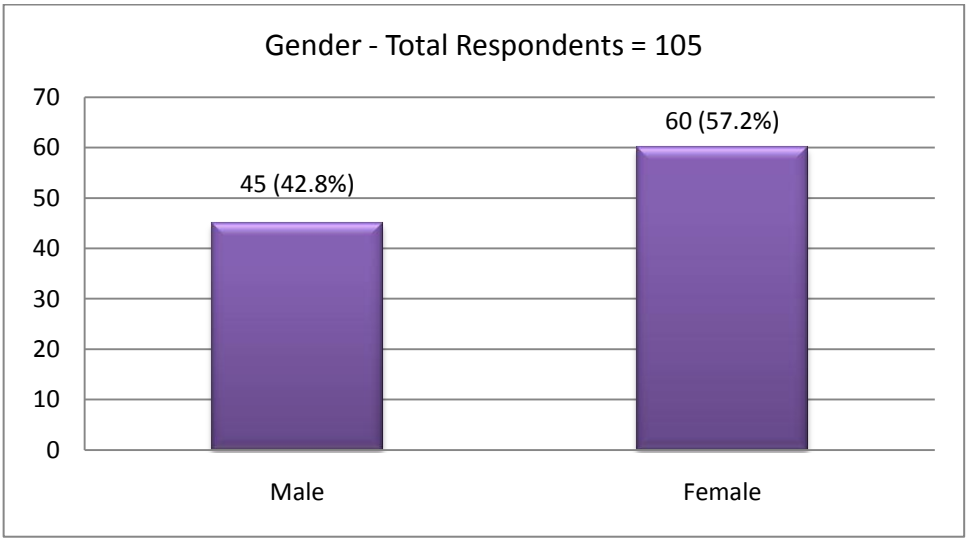
On my present job this is what I feel about...

	Very Sat.	Sat.	N.	Dissat.	Very Dissat
Being able to keep busy all the time					
The chance to work alone on the job					
The chance to do different things from time to time					

The chance to be “somebody” in the community					
The way my boss handles his / her workers					
The competence of my supervisor in making decisions					
Being able to do things that don’t go against my conscious					
The way my job provides a steady employment					
The chance to do things for other people					
The chance to tell people what to do					
The chance to do something that makes use of my abilities					
The way company polices are put into practice					
My pay and the amount of work I do					
The chance for advancements on this job					
The freedom to use my own judgement					
The chance to try my own methods of doing the job					
The working conditions					
The way my co – workers get along with each other					
The feeling of accomplishment I get from the job					
The praise I get for doing a good job					

Thank you for participating in the survey.

Appendix B: Control variables frequencies



The organisational levels that the study focused on are levels P to Q and M to O. Comparing the internal job grading system with commonly used HR grading systems such as the Hay and Patterson , levels P-Q represent senior management and M-O represent middle management in the organisation.

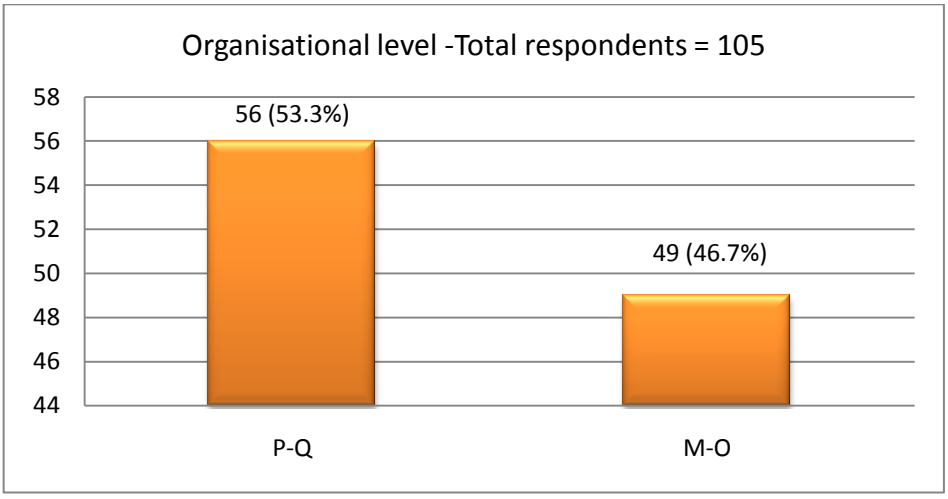
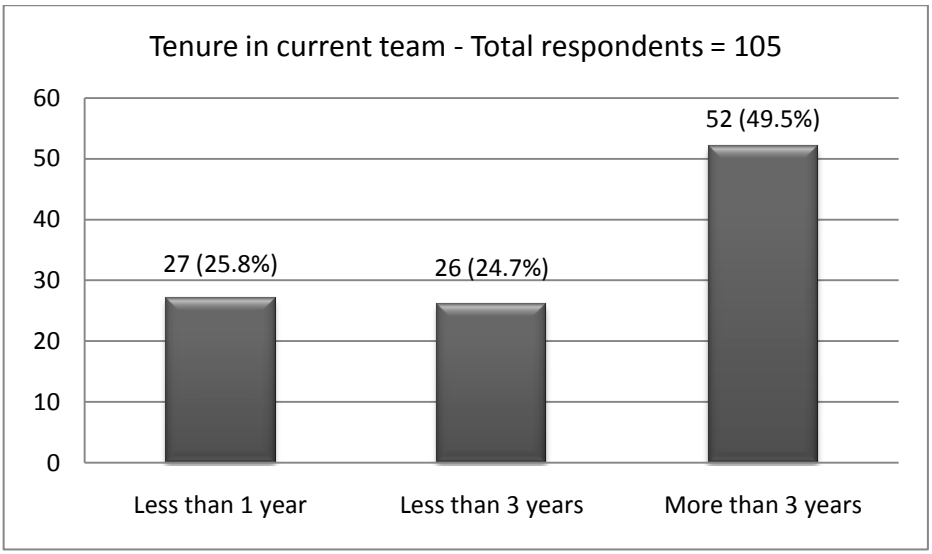
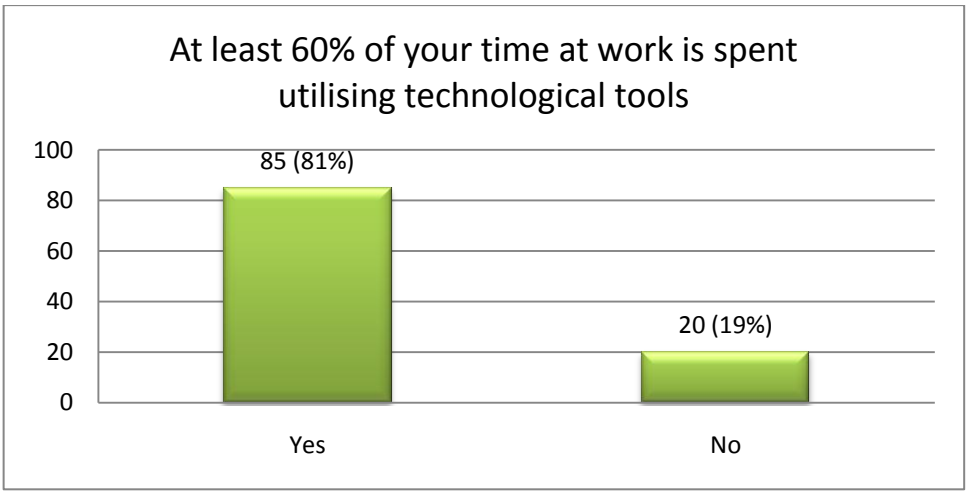


Figure 5.7 shows the length of time respondents have been in the current teams. The subcategory of less than three years, and more than three years shows a 49.5% / 50.5% split between respondents.



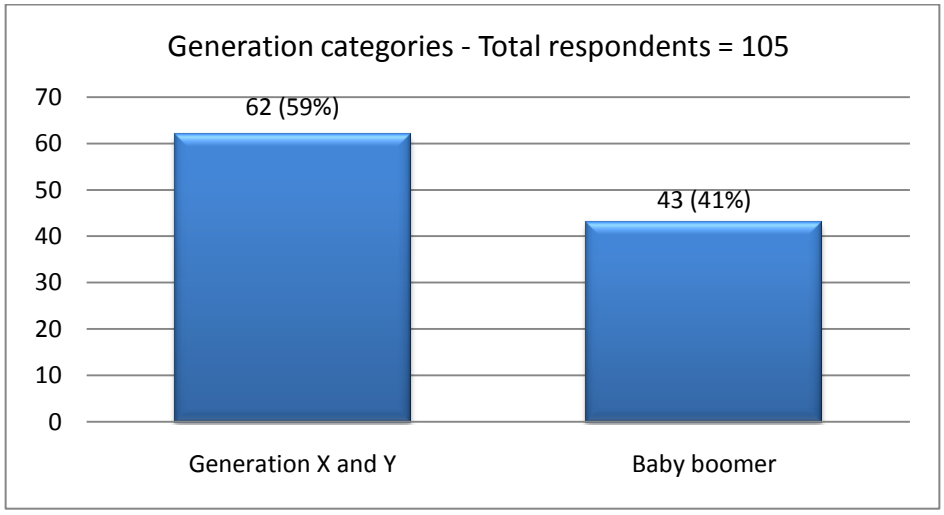
Section A of Questionnaire

Appendix C: Sample appropriateness



81% of respondents spend at least 60% of their work time utilising techonological tools.

Appendix D: Age distribution



The baby boomer category represents employees who are 47 years or older and the generation X &Y category represents a combination of employees who are 46 years or younger in the organisation.

Section B of questionnaire

Appendix E: Frequency distribution of use of technology applications

		Responses	
		N	Percent
Applications of technology	Computer or Laptop	99	22.1%
	Ipad	19	4.2%
	Cellphone	98	21.9%
	Microsoft communicator	38	8.5%

	Facebook	58	12.9%
	Twitter	29	6.5%
	Skype	27	6.0%
	LinkedIn	42	9.4%
	YouTube	19	4.2%
	Skype technology	19	4.2%
Total		448	100.0%

A computer, laptop and cell phone are used by more than 93% of respondents outside of work. In addition, facebook which is closely associated with computers and mobile phone devices is used by 55% of respondents.

Reliability of questions in sections B and C of questionnaire

Appendix F

Section B

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
To establish social networks	38.00	77.223	.508	.836
To pay bills	37.54	76.484	.543	.833
To keep personal	37.64	76.523	.554	.832

financial records				
To make investments in stocks and bonds	38.39	81.115	.285	.855
To shop	38.73	78.354	.518	.835
To get information about current events	37.17	81.950	.456	.839
To get information about entertainment, sports, and hobbies	37.30	76.988	.628	.828
To find news about travel or make travel arrangements	37.14	78.455	.641	.829
To participate in chat rooms	38.95	77.444	.439	.842
To get health or medical information	37.68	78.918	.523	.835
To make restaurant reservations	38.43	75.918	.523	.835
To make flight and holiday reservations	37.50	74.117	.675	.823

Section C

Item-Total Statistics

	Scale Mean if Item Deleted	**Scale Variance if Item Deleted**	**Corrected Item-Total Correlation**	**Cronbach's Alpha if Item Deleted**
Being able to keep busy all the time	42.63	114.428	.337	.882
The chance to work alone on the job	42.67	113.474	.439	.879

The chance to do different things from time to time	42.68	110.952	.501	.877
The chance to be "somebody" in the community	42.37	110.986	.480	.877
The way my boss handles his / her workers	42.40	107.415	.612	.873
The competence of my supervisor in making decisions	42.42	106.553	.645	.872
Being able to do things that don't go against my conscious	42.44	110.768	.432	.879
The way my job provides a steady employment	42.68	115.913	.272	.883
The chance to do things for other people	42.50	113.175	.396	.880
The chance to tell people what to do	42.34	114.401	.315	.883
The chance to do something that makes use of my abilities	42.56	109.960	.541	.875
The way company polices are put into practice	42.03	109.393	.535	.876
My pay and the amount of work I do	41.83	110.990	.455	.878
The chance for advancements on this job	41.95	107.565	.578	.874
The freedom to use my own judgement	42.38	109.603	.557	.875
The chance to try my own methods of doing the job	42.44	112.364	.455	.878
The working conditions	42.51	111.002	.513	.876

The way my co - workers get along with each other	42.26	106.943	.630	.872
The feeling of accomplishment I get from the job	42.57	111.305	.594	.875
The praise I get for doing a good job	42.48	111.021	.503	.877