Increased adoption and efficiency of self-managed teams,
through the fulfilment of basic psychological needs
(autonomy, competence and relatedness)*.

James Knupfer

Student number: 14453275

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Declaration

I declare that this research project 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 this research.

The name and the original signature of the student and the date should follow the declaration.

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James Knupfer

8th November 2015

Abstract

Organisational agility is growing more prominent within the banking sector. Performance of self-managed teams is specified as a component critical to better organisational agility. The contributing factors, which make self-managed teams, perform so well, are still not clearly understood. The high rate of failures in organisational change, brought on by employee resistance to change can also deter the adoption of these teams.

The main objective of this research was to determine whether fulfilling the intrinsic motivators of autonomy, competence and relatedness described in self-determination theory, increased the overall willingness to adopt change and a desire to be part of a self-managed team. To a lesser extent, this study sought to determine whether age, gender and ethnicity could alter the perceived fulfilment of these basic psychological needs. This research contributes to the academic understanding of self-managed teams and provides insight into future research in this field.

Using quantitative data, a descriptive research design was followed, with the data collected through the use of a questionnaire administered in a survey format. The questionnaire was put to a sample of banking employees in the process of adopting self-managed teams within their organisation.

The results revealed that the more a person perceives that a self-managed team fulfils his or her need for autonomy, competence and relatedness; the increased desire to be part of these teams exists, and more openness to adopt the change to a self-managed team. Further insight drawn from the research shows that age, gender and ethnicity have no significance to the adoption of self-managed teams. Overall this research demonstrates that leadership's consideration of the basic psychological needs can greatly increase chances for success in the change to an agile organisation.

The practical implications of this study were demonstrated in the conclusion of this research.

Keywords: Self-managed teams, Self-determination theory, Autonomy-supportive leadership, Organisational flexibility

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CHAPTER 1. Introduction

1.1   Preamble

In this chapter, the researcher will introduce this research report by outlining the research problem and the motivation behind the study. The chapter will provide detail around the aims and objective of the study, with its expected contributions to existing literature and its significance to the current business environment.

1.2   Research title

Increased adoption and efficiency of self-managed teams, through the fulfilment of basic psychological needs (autonomy, competence and relatedness).

1.3   The research problem

Organisational change has a high rate of failure (Al-Haddad & Kotnour, 2015; Appelbaum, Habashy, Malo, & Shafiq, 2012; Jacobs, van Witteloostuijn, & Christe-Zeyse, 2013; Kuntz & Gomes, 2012; Simoes & Esposito, 2014). Organisational flexibility is needed through self-managed teams. Autonomy-supportive leadership supports them (Parker, Holesgrove, & Pathak, 2015). Organisational change success statistics are not improving, showing there is a need to investigate and identify those factors that increase the probability of successful organisation change (Al-Haddad & Kotnour, 2015). However, there is also more research needed into why self-managing teams have better productivity than non-working teams (Parker *et al.*, 2015).

If research was able to determine the relationship between the intrinsically motivating, basic psychological needs of autonomy, competence, relatedness and the adoption of self-managing teams, it could be identified or discounted as a pertinent factor in change success. It could also highlight the reasoning behind the better productivity of self-managing teams.

1.4   Research motivation

The current rate of technological advancement and global competition predicts continuous change and a need to adapt to this level of constant change (Appelbaum et al., 2012). This is no less prevalent in the global banking industry, where the competition in financial services is changing dramatically, with Accenture estimating that competition from non-banks could erode one-third of traditional bank revenues by 2020 (Busch & Moreno, 2015). Start-ups have begun focusing on disrupting banking business models (Arnold & Ahmed, 2014) and Britain has issued its first banking licence to a bank with no branches and no website, operating only through a mobile app (Williams-Grut, 2015). Amazon is entering the market of financial lending in China and several other countries (Bose, 2015) and e-commerce giant Alibaba has launched its own online bank (Wildau, 2015). All of these businesses are flexible technology companies that are able to adapt quickly to changing environments. Amazon has been known to release new code into production every eleven seconds, whereas banks are dealing with antiquated legacy hardware and software (Arnold & Ahmed, 2014), limiting their capability to compete in this new environment.

In response to this, banks are now creating agile environments, which are able to adapt and address customer demand. This is evident by the international bank HSBC which announced the retrenchment of up to fifty thousand staff with an overhaul of IT and a move to a more agile methodology (finextra, 2015) and Barclays bank which is focusing on making the firm agile in a technology space (Kharpal, 2015).

If banks are to promote this radical innovation internally, they will need to move from the structure of more functional teams to more teams that are more autonomous (Koch, 2012). Functional teams usually only process tasks in a single functional area for a product, whereas autonomous teams will work across multiple functional areas to deliver a task having end-to-end accountability of the product (Koch, 2012). Institutional authority impedes functional teams. T he performance and strength of the team is based on the managers who control the resources (Koch, 2012). Unsuitable management potentially slows down new product development (Koch, 2012) and results in more and more organisations successfully adopting self-managed or autonomous teams.

With this in mind, it is safe to say that changes are inevitable (Appelbaum et al., 2012) and constant (Steigenberger, 2015). This rate and nature of change in any

organisation can destabilise it, as well as being costly and risky (Soparnot, 2011). Organisational members' involvement in the change process is also often overlooked by macro-level scholars of strategic management (Jacobs et al., 2013) and not considered in the organisational strategy. For any change to be successful, change in individual mind-sets is required (Jaynes, 2015), since resistance to change by individuals is a main reason behind change failure (Simoes & Esposito, 2014). The research aims and objectives are to provide a worthwhile academic and business contribution to the current understanding of organisational change and adoption of self-managed teams and reasons for their efficiency.

1.5   Research aims and objectives

The aim of this research will be to provide insight into the fulfilment of the intrinsic motivators in basic psychological needs of autonomy, competence and relatedness, and their effect on a desire to be part of a self-managed team as well as a willingness to accept organisational change. The researcher looks to determine the importance of these basic psychological needs in self-managed teams and whether they could increase the likelihood of successful organisational change. To a lesser extent, the contribution of age, gender, ethnicity to a willingness to adopt organisational change, will also be investigated.

1.6   Scope of the research

This research focused on individuals currently working in a South African financial institution, which has begun to adopt self-managed teams as a new way of working. The researcher relied on the respondents' view of self-managed teams after completion of an Agile fundamentals full-day workshop. It was determined that these respondents were better positioned to understand the questions posed to them in the survey. The focus was to evaluate their perceived views on self-managed teams and how their responses related to the constructs of motivation and adoption, identified by the researcher and outlined, in detail, in chapter 2.

1.7   Key concepts defined

Agile Methodology: is an alternative to traditional project management, which is being adopted by organisations globally. Emphasis is placed on empowering people

to collaborate and make team decisions in addition to continuously planning, testing and integrating.

Self-managed teams: self-organising, semi-autonomous groups -- of between three and nine members -- of employees within a large organisation, which are empowered to decide, plan, and manage their day-to-day activities and duties under reduced, or no, supervision.

Autonomy: in the context of this study, autonomy refers to the perceived empowerment of individuals to act on their own volition in respect of their role within a self-managed team.

Competence: is also referred to as mastery and within this study speaks to someone's confidence in his or her own capability to complete a task.

Relatedness: is the way in which someone considers his or her ability to relate to others within a self-managed team.

1.8   Outline of research report

1.8.1   *Chapter 1: Introduction*

This chapter will detail the business justification of this research study, which will include the motivation, research objectives, aims and the significance of the research.

1.8.2   *Chapter 2: Literature review*

In this chapter, the researcher will discuss the themes of the research study and the focus of the study. The available literature considered, will provide insight into the theoretical constructs of the study.

1.8.3 *Chapter 3: Research hypotheses*

Based on the concepts and literature review set out in Chapter 2 of this study, the researcher will construct the hypotheses to be able to answer the research question. (Objectives of this research set out in Chapter 1).

1.8.4 *Chapter 4: Research design*

In Chapter 4, the role of the researcher in the study is introduced, the research design, how the data will be collected, the method of analysis as well as the limitations of the study.

1.8.5 *Chapter 5: Results*

The responses to the data collected as part of the questionnaire in Appendix 1, will be presented in Chapter 5, with a description and analysis of the data by the researcher. This chapter will detail the process followed in the analysis of the hypotheses set out in Chapter 3.

1.8.6 *Chapter 6: Discussion*

In this chapter the results from chapter Chapter 5 will be analysed through the lens of the literature reviewed in chapter Chapter 2. The chapter will discuss in detail the interpretation of the results, inn line with the hypotheses that will be set out in chapter Chapter 3.

1.8.7 *Chapter 7: Conclusion*

In this chapter the pertinent findings on the contribution of autonomy, competence and relatedness to the desire to be part of self-managed teams and a willingness to adopt will be discussed further. This chapter also include the implications of the findings, recommendations to stakeholders based on these findings as well as future research suggestions identified from this research.

1.9 Summary

This chapter has introduced the research problem being addressed by this study as well as the motivation behind the study. It has provided insight into the aims and objectives of the study, as well as the significance of the study to the current environment, with its contribution to the existing academic literature. The next chapter will provide the theoretical concepts related to the research problem.

CHAPTER 2.   Literature Review

2.1   Introduction

In this chapter, the researcher will discuss the themes of the research study and the focus of the study. The available literature considered, provides insight into the theoretical constructs of the study. Self-determination theory's basic psychological needs of autonomy; relatedness and competence were reviewed as well as willingness to adopt organisational change. Organisational flexibility and autonomy-supportive leadership were investigated to understand the environment required to support the transfer to self-managed teams.

In 1999, Moravec argued that more research is needed into why self-managed teams have better productivity than non-team working (Parker et al., 2015) and the business justification for such teams.

The implementation of autonomous or self-managing teams can be costly to an organisation (Patanakul, Chen, & Lynn, 2012). These teams have been known to disrupt the wider organisation and its policies, are seen to have limited management and be difficult to integrate, as individuals, back into the organisation when delivery within a self-managed team has been completed (Patanakul et al., 2012).

If organisational structures are becoming more team based, individual behaviour must be a function of the group environment and should be seen in terms of a group (Al-Haddad & Kotnour, 2015). This study looked to further understand what motivates the productivity of individuals within self-managed teams and what provides the benefits of these teams to an organisation. In current market organisations, flexibility within self-managing teams and autonomy-supportive leadership must be in place to support that adoption (Parker et al., 2015).

Therefore, this chapter begins with a discussion of need for organisational flexibility and then provides detail on self-managed teams, the importance of autonomy-supportive leadership to self-managed teams and then motivation of individuals within those teams. It concludes with how to support the adoption of self-managed teams.

2.2 Organisation flexibility

Organisations operating in the twenty-first century need to understand the criticality of enhancing their flexibility to adapt to external changes, while also becoming proactive towards technological and market transformations in the face of environmental uncertainty and unpredictability (Maimone & Sinclair, 2014). Organisations operate in an increasingly uncertain macro environment and are subjected to shocks and disturbances due to increasing dynamic market changes (Koch, 2012; Lehman, Jr, Appley, Jr, & Slevin, 2011). These changes are an everyday phenomenon and inevitable, as organisations continue to adapt to technological advancement, growing global competition and stakeholder pressure (Appelbaum et al., 2012; Steigenberger, 2015). If businesses want to stay competitive, they need to become comfortable with continuous change (Koch, 2012), as it is the norm and will sustain the success and existence of the organisation (Al-Haddad & Kotnour, 2015).

A large number of organisations are now adopting cultures of learning or are becoming agile , in order to cope with the constant evolution of environments which could determine their short- or long-term success (Appelbaum et al., 2012). The reality is that managerial controlled systems cannot predict the continuous change of complex systems and organisations as well as their environments, which must evolve faster than policy processes and procedures (Maimone & Sinclair, 2014). The ability to work in contemporary organisations has become increasingly complex, less routine, more multi-dimensional and more strictly defined (Dysvik & Kuvaas, 2013). The changing economy alters not only the services customers need, but also the price points the market will accept (Lehman et al., 2011). Organisations are crippled by red tape that involves excessive rules and regulations that do not advance the legitimate purposes that the rules were intended to serve (S. M. Park & Rainey, 2012).

As people daily discover new ideas and new ways to solve problems in organisations (Maimone & Sinclair, 2014) and as stated by Koch (2012), firms need self-managing innovative groups to respond to varied changes and these innovative ideas. Chaordic change theory talks to the ability of an organisation to facilitate innovation and continuous change (Maimone & Sinclair, 2014). Whereas continuous change refers to an evolving and cumulative process of change based on organising in the absence of prior intentions, it also encourages improvisation, continuous adaptation

and learning (Maimone & Sinclair, 2014). This supports the research that organisations are more effective if their structures are adaptive and that organic organisations possess decentralised decision making, lots of communication, fluidity, flexibility in task execution with high levels of organisational integration and few formal procedures (Patanakul et al., 2012). Control theory suggests that organisations should implement self-managed teams to become more adaptive and flexible (Parker et al., 2015). To this end, many companies have introduced self-managing teams to improve employee attitudes, productivity and effectiveness, customer satisfaction and organisational commitment (R. Park, 2012)

For this reason, in the next section, the literature details self-managed teams and how they can support organisations to be adaptive and flexible.

2.3   Self-managed teams

Parker et al. (2015) states that effective teams are groups that achieve high levels of both task performance and human resource maintenance. A good team is defined as having effective strategic decision makers, who implement and evaluate their solutions and decisions and tolerate task-related deviance. The team's norm is to encourage high performance, quality, success and innovation (Parker et al., 2015). These teams must consist of the smallest possible number of members to achieve their goal and each must have sufficient time together to develop a cohesive and cooperative mature working group (Parker et al., 2015). Thirty years ago when the concept of self-leadership teams was introduced, it looked at a different approach to how people managed themselves, and claimed that people are driven by internal, rather than external, forces (Stewart, Courtright, & Manz, 2011). Self-leadership occurs when teams and individuals perceive a situation and choose to engage in behaviour that aligns their actions with standards (Stewart et al., 2011). They monitor activities to encourage the desired behaviours and assess how those behaviours influence the situation (Stewart et al., 2011). Stewart et al. (2011) posits further that internal rather than external forces ultimately control actions and these collective groups have the capacity to regulate their behaviour internally.

The internal control of one's actions begins to support the emergence of a group methodology, where a team would have more freedom and stronger capabilities, would be innovative and entrepreneurial, have a high degree of autonomy, independence, leadership, dedication and collocation (Patanakul et al., 2012). These

teams are empowered to regulate their own behaviour, they can select and terminate workers, set their own work schedules, determine budgets, order materials and monitor product quality (Stewart et al., 2011). These self-managed teams require team performance measures because existing individual performance measures allow individuals to hide behind the excuse of doing self-important things or being too busy to support the team or other people (Parker et al., 2015). These measures should focus on the team performance -- and not pit individuals against each other -- while supporting team bonding and a collective spirit (Parker et al., 2015).

Self-managed teams are also known as self-organised, self-regulated, self-directed or semi-autonomous teams; a small group of employees who determine, plan and manage their day-to-day activities with minimal or no supervision (R. Park, 2012; Parker et al., 2015; Patanakul et al., 2012). Teams operating with this type of self-management are provided a blank slate to develop new products and are required to oversee members from different functional areas from ideation to product launch (Koch, 2012). These teams are perceived to be separate from the mainstream organisation and they develop their own strategy, incentives and rewards (Patanakul et al., 2012).

Self-managed teams are able to react quickly, accelerate development speed while simultaneously reducing cost and improving overall product success (Patanakul et al., 2012), through adaption and continuous improvement (Maimone & Sinclair, 2014). Self-managed teams are effectively able to solve problems or deal with the unexpected by exploring, improvising and through creating collectively, new strategies and tools (Maimone & Sinclair, 2014).

Most procedures created by a group can only apply to the specific context of that group and not the larger organisation (Koch, 2012). This can be advantageous as it avoids unnecessary approval processes within the hierarchy (Koch, 2012) and allows them to act quickly without being held back by organisational formalities (Patanakul et al., 2012).

Self-managed teams are seen as core knowledge communities, supplying focus for individuals and teams, managing relationships more effectively and hence improving product development (Parker et al., 2015). Communities of practice have also been known to emerge spontaneously from employees with a shared interest in a body of knowledge and they are typically self-organising (Koch, 2012). Supportive research that has gained prominence in this field is emergent theory, focusing on teamwork,

total quality management and employee empowerment (Parker et al., 2015). Emergent theory as well as control theory encourages the creation of self-managed teams as part of organisational strategy (Parker et al., 2015).

The benefits of self-managed or self-organised teams have been studied and proven to provide the following to employees and organisations:

- Job descriptions are not dictated as everyone is prepared to do the jobs of others in the groups, should it be required (Parker et al., 2015).
- Autonomous teams perform better in delivering radical innovation (Patanakul et al., 2012) practising in an environment of continuous evolution (Maimone & Sinclair, 2014).
- The team structure has a significant impact on project performance in speed of development, costs and success of the product (Patanakul et al., 2012).
- They are able to deal with spontaneous and unplanned change through the horizontal process of knowledge creation (Maimone & Sinclair, 2014).
- They are the best placed teams to run with an organisation's breakthrough projects and major platform projects (Koch, 2012).
- They promote the values of putting the customer first by removing productivity waste and improving service recovery which has resulted in increased sales (Parker et al., 2015)

Hyper-flexible organisations are known to be composed of semi-autonomous business units based on project teams and inter-organisational networks (Maimone & Sinclair, 2014). Self-managing teams make organisations more effective and productive (Parker et al., 2015) and many organisations have introduced self-managing teams to improve their staff's attitudes, productivity and effectiveness (R. Park, 2012). The realisation is that creativity tends to be simulated by empowering work, free flowing interaction, the freedom to experiment and fail but with organisational and supervisory encouragement (Maimone & Sinclair, 2014).

Even though organisations are beginning to adopt self-managing teams there is still a less than 10% adoption of this methodology (Patanakul et al., 2012). Park (2012) states that 79% of Fortune 1000 companies have self-managing teams. He continues that this high rate of adoption is due to self-managing teams improving employee attitudes, increasing productivity and effectiveness and reducing attrition rates. It should be considered that self-managed teams might not be suitable for all organisations as they have shown mixed results: in some cases, with increases in

turnover and absenteeism (Parker et al., 2015). Patanakul et al. (2012) posits that this could be due to the independence of the team and limited control from management, or that it is costly due to the limited ability to share resources and capabilities with other teams. This could also be attributed to limited resources, insufficient training and coaching time and supervision of newly formed self-managed teams (Parker et al., 2015).

The reluctance by organisations to implement autonomous teams could be due to the historical leadership trends of deterministic, reductionist approaches focused on creating stability (Parker et al., 2015). To this end, not all leaders see self-managed teams as effective, but more as informal and chaotic, fostering insubordination (Parker et al., 2015). Parker et al. (2015) states that self-managing teams are most effective when working under the six agile leadership concepts of:

- Guiding vision
- Teamwork
- Collaboration
- Simple rules
- Open information
- Light touch and agile vigilance

These leadership concepts highlight the importance of the role that leadership needs to play in an organisation with self-managed teams.

To respond to change in the market place, leaders need to make use of different ways in which groups manage themselves, particularly in large organisations. Given the important role that self-managed teams could play in an organisation's ability to adapt and be flexible, we need to research what is the necessary type of leadership required to enable these self-managed teams.

Table 1: Description of a self-managed team.

Characteristics of a self-managed team	Leadership abilities required to support self-managed teams	Conditions needed for a self-managed team	Associated risks of self-managed teams
Job descriptions are not dictated as everyone is prepared to do the jobs of others in the groups, should it be required (Parker et al., 2015).	An intrinsic ability to deal with change.	Require team performance measures and individual performance measures allow individuals to hide behind the excuse of doing self-important things or being to busy to support the team or other people (Parker et al., 2015).	The independence of the team and limited control from management makes then difficult to control (Patanakul et al., 2012).
Autonomous teams perform better in delivering radical innovation (Patanakul et al., 2012) practicing in an environment of continuous evolution (Maimone & Sinclair, 2014).	They have a view of organisations as fluid, adaptive systems composed of intelligent people.	Limited resources, insufficient time on training, coaching and supervision of newly formed self-managed teams (Parker et al., 2015).	Self-managed teams might not be suited for all organisations and have shown mixed results with increases in turnover and absenteeism in some cases (Parker et al., 2015).
The team structure has a significant impact on project performance in speed of development, costs and success of the product (Patanakul et al., 2012).	They recognise the limits of external control in establishing order; and of the role of intelligent control that employs self-organisation; an overall problem solving approach that is humanistic in that it regards people as skilled and valuable stakeholders in the management of a team.	Guiding vision for the team so that they always have a view on the strategy and intent of the organsiation.	It is costly due to the limited ability to share resources and capabilities with other teams (Patanakul et al., 2012).
They are able to deal with spontaneous and unplanned change through the horizontal process of knowledge creation (Maimone & Sinclair, 2014).	They rely on the collective ability of autonomous teams as the basic problem solving mechanism.	The team must be allowed to collobaorate through teamwork.	Not all leaders see self-managed teams as effective but more as informal and chaotic, fostering insubordination (Parker et al., 2015).
They are best placed teams to run with an organisations breakthrough projects and major platform projects (Koch, 2012).	They limit the up-front planning to a minimum based on an assumption of unpredictability; and instead, lays stress on adaptability to changing conditions.	The team must have simple rules so that they are easy to follow and apply quickly.	Are known to disrupt the parent organisation.
Promotes the values of putting the customer first by removing productivity waste and improving service recovery which has resulted in increased sales (Parker et al., 2015).	They reacts accordingly to emergent outcomes from the self-organised team.	The team must have acces to all the required data and details through open information	The teams are difficult to integrate back into the organisation once they have completed their delivery (Patanakul et al., 2012).
Smallest number of members neededed to achieve its goal and have sufficient time together to develop a cohesive and cooperative mature working group (Parker et al., 2015).	They Manage for outcomes, i.e., removes obstacles that prevent the team achieving their goals.	The team must be given a high-level of autonomy through light touch leadership.	
Empowered to regulate their own behaviour can select and terminate workers, set their own work schedules, determine budgets, order materials and monitor product quality (Stewart et al., 2011).		The team requires agile vigilance to ensure they are not impacted by other deparrments or processes within the organisation impeding their ability to deliver.	
core knowledge communities supplying focus for individuals and teams to manage relationships more effectively and hence improve product development (Parker et al., 2015).			
Improved attitudes, productivity and effectiveness of people (R. Park, 2012).			

2.4   Autonomy-supportive leadership

The market place is changing and, within large organisations, leaders must use different methods to manage their groups in order to respond to the changing market place (Koch, 2012). To change an organisation to this new way of working, leaders must understand that these change programmes only work if they are finely tuned and adjusted by the organisational actors involved and the specific contexts within which they are implemented (Maimone & Sinclair, 2014). Parker et al. (2015) posit that this change in leadership style can prove difficult; early leadership was based on the concept of domination. Later behavioural theories took a popular contextual approach to leadership and followers, which was adopted by leaders (Parker et al., 2015). Leadership can be described as people who influence and direct others to accomplish certain objectives or achieve a common goal, while making sure the organisation is heading in the right direction (Al-Haddad & Kotnour, 2015). Maimone and Sinclair (2014), state that leadership must cultivate the sense of common mission, which can be a challenge in flexible working environments. They should be stewards of the change process, focused on value management (Al-Haddad & Kotnour, 2015).

Traditional leadership cannot sufficiently apply to the autonomous principles of self-managed teams, as there is a need to overcome the operational rigidity of normal processes (Parker et al., 2015). Traditional management theory assumes that leadership requires tight controls in times of market volatility (Parker et al., 2015). Operational management or controlling management of self-managed teams has become for the most part redundant (Parker et al., 2015). Modern leadership theories state that empowerment is the central element and talk to themes of influence in a reciprocal process of achieving shared goals (Parker et al., 2015). Self-managed teams need agile leadership, also known as autonomy supportive leadership, which operates with the understanding that teamwork is synonymous with excellent leadership, as these leaders devote an inordinate amount of time and effort to getting the team right (Parker et al., 2015). These leaders operate in an organic organisation with decentralised decision making, frequent communication, fluidity and flexibility in delivering actions; there are no hierarchies, explicit rules or regulations (Patanakul et al., 2012). They also fulfil more of a facilitation role, managing outcomes and removing obstacles that hinder performance (Parker et al., 2015).

An autonomy-supportive style of leadership encourages subordinates' self-regulation or self-leadership by allowing them to make choices (Amoura, Berjot, Gillet, Caruana, & Finez, 2015). A controlling style of leadership is known to thwart a subordinate's need for autonomy and demotivates individuals (Amoura et al., 2015). Autonomy-supportive leadership requires a form of servant leadership: a leader who is motivated by the desire to serve and empower followers and influence them through the act of service (Parker et al., 2015).

Guntert (2015), confirmed that autonomy-supportive leadership was a positive predictor of someone's self-determined behavioural regulation. Previous literature has looked at the influential effect different styles of leadership can have on a team's performance (Parker et al., 2015). Present-day views on management measures lack insight into team members' perceptions of goals and performance requirements, highlighting the need for agile or autonomy-supportive leadership to develop new, unconventional, performance measures that are more empowering to the team (Parker et al., 2015).

Parker et al. (2015) refer to an authentic leadership framework that provides teams implementing agile methodologies with some guiding principles for agile leadership. Leaders need to view the organisation as fluid and adaptive systems with intelligent people. They must recognise the limits of external control in establishing order, using an overall problem solving approach that is humanistic (Parker et al., 2015). Soparnot (2011) described a humanistic organisation as one where behaviour is governed by emotion and anticipated in terms of action reaction. Agile leaders rely on the collective ability of autonomous teams as the basic problem-solving mechanism and see people as skilled and valuable stakeholders in the management of a team (Parker et al., 2015). Agile leaders have an intrinsic ability to deal with change and react accordingly to emerging team outcomes, while removing obstacles that prevent the team from achieving its goals (Parker et al., 2015).

Organisations in a continuous state of change, composed of semi-autonomous business units using project teams and inter-organisational networks, are referred to as hyper-flexible organisations (Maimone & Sinclair, 2014). In hyper-flexible organisations, participative leadership and a collaborative work environment based on trust, facilitates organisation structuring (Maimone & Sinclair, 2014). Simoes and Esposito (2014) found in their study that to reduce resistance to change, individuals must trust their management. Research has shown that trust in leadership and

perception of a manager's ability to plan and implement change processes are positively associated with readiness for change (Kuntz & Gomes, 2012).

Leaders should manage the authority boundary: listening, accepting constructive criticism and stimulating staff to challenge their opinion (Maimone & Sinclair, 2014). Leaders must understand that change violates personal expectations and that emotional reaction to that violation influences how they will experience the situation (Steigenberger, 2015). This is referred to as sense-making and leaders must attempt to influence the sense-making and meaning construction of these individuals towards the preferred redefinition of the organisation's reality; this is referred to as sense-giving (Steigenberger, 2015).

The degree to which leaders and stakeholders facilitate this sense-making process in a sense-giving capacity will greatly determine the pace of the processes' subsequent outcomes (Kuntz & Gomes, 2012). Previous studies have shown that self-determined types of behavioural regulation have been confirmed as being positively predicted by autonomy supportive leadership (Güntert, 2015), though not all leaders support this premise and believe there is high risk in giving away too much responsibility for decision making (Parker et al., 2015).

Al Haddad and Kotnour (2015) developed two basic change theories for leading change. Theory E focuses on the hard approach to change, using economic incentives or downsizing. It talks to Theory O, which represents a soft approach to leadership, focusing on developing organisational culture and people's capabilities and usually welcoming people' involvement, feedback and reflections. This theory supports the premise that the more leaders support autonomy in their relationships with their subordinates, the more they satisfy subordinates' basic psychological need of autonomy and the more they promote autonomous motivation (Amoura et al., 2015). Self-leadership theory accepts that internal regulation can be externally supported and that the reward for self-leadership is external reinforcement, which emphasises its importance (Stewart et al., 2011). Researchers relate the idea of autonomy-supportive leadership to that of transformational leadership, of which both are linked to organisational citizenship behaviour (Güntert, 2015). Transformational leaders transform and inspire followers to perform beyond expectations, while transcending self interest for the good of the team and organisation (Avolio, Walumbwa, & Weber, 2009). This highlights that leaders need to know their teams better and understand what motivates them, using a light touch to maintain a level of emergent order (Parker et al., 2015). This style of leadership allows employees to

make their own choices and has been shown to provide higher satisfaction for their motivational need for autonomy and competence (Amoura et al., 2015).

Autonomy-supportive leadership is a requirement for the adoption and development of self-managed teams, which is critical for organisations to become adaptable and flexible. For organisations to be able to transition to this structure of self-managed teams, they need to include the people they employ as part of that change and be able to motivate them to adopt the change.

2.5   Motivation

In this section the researcher defines the concept of motivation and focuses on self-determination theory's intrinsic and extrinsic motivators; in particular, the basic psychological needs of autonomy, competence and relatedness in self-determination theory.

Several motivation theorists have posited a number of constructs on how motivation influences choice, persistence and performance (Wigfield & Eccles, 2000). These three characteristics try to explain how well we do in activities and the extent to which we value the activity (Wigfield & Eccles, 2000). An individual's behaviour can also be expected to be influenced by three factors: motivation, opportunity and ability (Lin, Wang, & Wang, 2013).

The understanding and definition of motivation continues to evolve (Cerasoli, Nicklin, & Ford, 2014), so the researcher defined it as an intervention to move individuals to energise their behaviour or intention to act on something, for the purposes of this study. Figure 1 attempt's to reflect the influence of motivation, opportunity and ability on behaviour and how that in turn can affect choice, persistence and performance.

Figure 1: Factors that influence behaviour and action
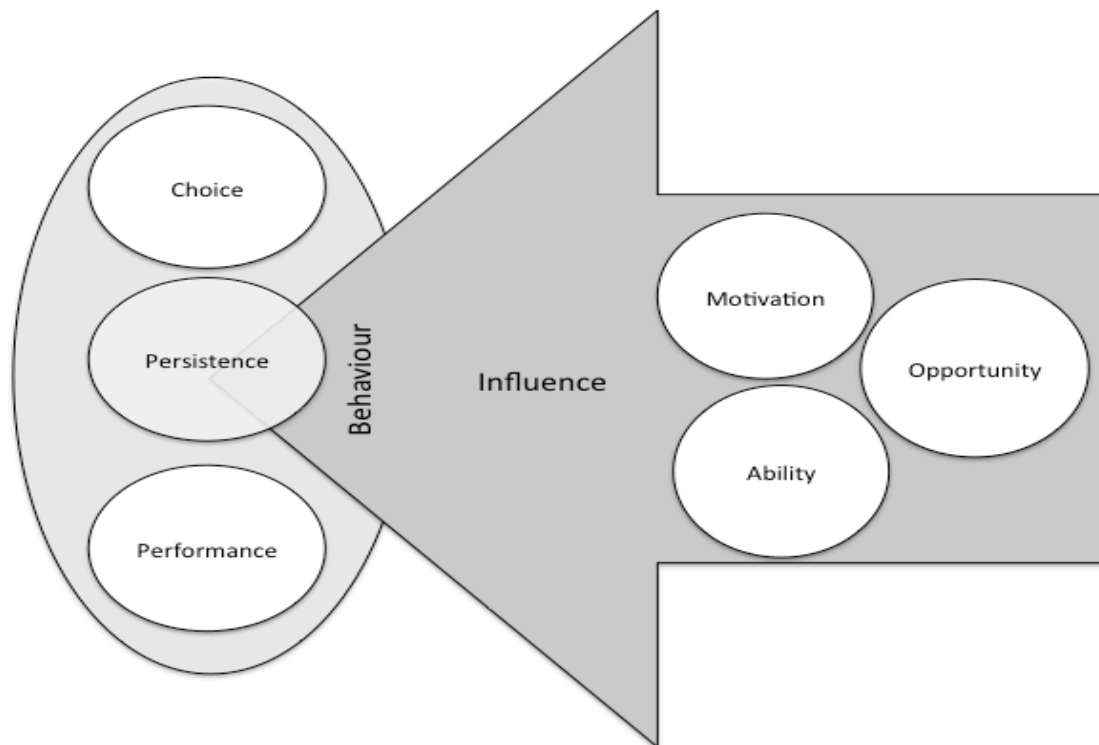
According to Lin, Wang & Wang (2013) motivation is direction, arousal, amplitude and persistence of an individual's behaviour. Stewart et al., (2011) supported that setting specific, challenging but achievable goals facilitates individual motivation and, in turn, performance. Motivation can be defined as an intervention to move an individual to do something (Elias, Smith, & Barney, 2012). What energises a person's behaviour, directs, sustains and maintains it (S. M. Park & Rainey, 2012), is the deciding factor in personal health and well-being and is considered the fundamental component to any credible model of human performance (Cerasoli et al., 2014).

Both in cultural and psychological theory, the value of choice in motivating behaviour and evoking adaptive responses is pervasive (Hagger, Rentzelas, & Chatzisarantis, 2014). The provision of choice is empowering and provides individuals with a sense of personal causation, agency and control (Hagger et al., 2014). The two types of motivational forces guiding the direction, intensity and persistence of performance behaviours are intrinsic and extrinsic motivation (Cerasoli et al., 2014; Houston, McKirnan, Cervone, Johnson, & Sandfort, 2011).

2.5.1 *Self determination theory*

Self determination theory distinguishes between different types of motivations based on the different reasons or goals that give rise to action (Lin et al., 2013) and promotes an individual's capacity to act independently, while remaining the origin of his or her own behaviour (Hagger et al., 2014). Self-determination theory distinguishes between autonomous and controlled motivation (Dysvik & Kuvaas, 2013). Autonomous motivation occurs when someone acts from his or her own perceived volition and choice. Conversely, controlled motivation describes someone acting on the perceived pressure of having to engage in actions (Dysvik & Kuvaas, 2013). People with a keen sense of their capability find this influences their perception, motivation, and performance (Lunenburg, 2011).

Self-determination theory refers to the innate need for autonomy, competence and relatedness for an individual (Deci & Ryan, 1985). These traits are regarded as nutrients for psychological growth and integrity (Güntert, 2015). Stated differently: self-determination theory is the basic psychological need for autonomy, competence and relatedness that fosters well-being and strengthens inner resources which will contribute to subsequent individual resilience (Vansteenkiste & Ryan, 2013).

Guntert (2015) describes self-determination theory as an approach to humane motivation and personality which addresses the quality and the quantity or intensity of the motivation and can link the quality of motivational linking characteristics of the working and individual differences to behavioural and attitudinal outcomes. Whereas Houston et al. (2011) state that self-determination theory may explain the amount of effort a person will exert based on the work motivation that drives them.

Work design is expected to be an important predictor of self-determined motivation; a well-designed job must offer interesting and challenging tasks covering a complete and coherent range of activities with which employees can identify (Güntert, 2015). In the work environment there is a well documented association between basic psychological needs' satisfaction and strengthened engagement of individuals (Vansteenkiste & Ryan, 2013). Leaders need to actively manage the emotional climate of an organisation so that it nurtures physical and emotional attributes of the workspace, which makes staff feel comfortable and true to themselves (Maimone & Sinclair, 2014). When the environment is controlling, critical or rejecting of social contexts, organisations are at risk of defensive functioning and these environments could thwart psychological needs (Vansteenkiste & Ryan, 2013). Self-determination

theory needs supportive environments that provide meaningful choice or deliver effective relevant feedback and facilitate intrinsically motivated behaviour through the satisfaction of needs for autonomy, competence and relatedness (Vansteenkiste & Ryan, 2013).

Figure 2: Self-determination theory graphic overview on the role of need satisfaction and need frustration
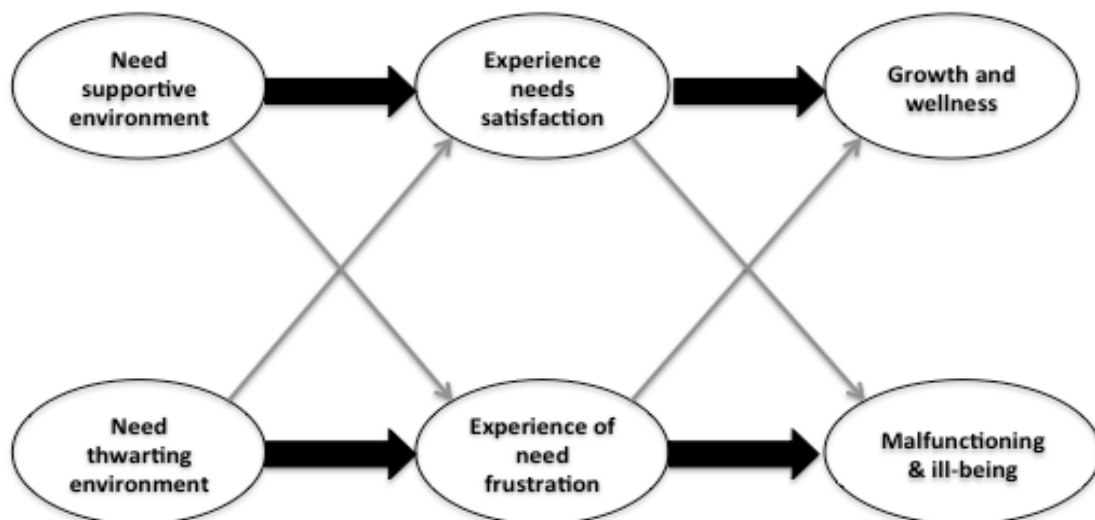
Source: (Vansteenkiste & Ryan, 2013)

Figure 2 reflects a graphical representation of the contextual need-supportive and need-thwarting environments and how individuals experience satisfaction or frustration within those environments, ultimately leading to a positive or negative outcome. The smaller arrows moving between these environments show that even within a need-supportive or need-thwarting environment, the outcome is not absolute and individuals can still experience satisfaction and frustration in both, albeit less strongly than within a specific environment.

An individual's need to reduce the discrepancies between their own established internal goals and the outcomes they achieve is known as control theory (Kuntz & Gomes, 2012). This desire for control has been shown to be related to basic psychological needs' satisfaction in self-determination theory and autonomous motivation (Amoura et al., 2015). People are considered proactive organisms with the inclination to shape and optimise their own life conditions (Vansteenkiste & Ryan, 2013). Individuals who feel imbued with a sense of choice, feel more autonomous and competent in their environment and behaviour (Hagger et al., 2014). The self-concordance model posits that individuals who pursue personal goals for

autonomous reasons, put more sustained effort into achieving those goals and thus are more likely to attain them (Dysvik & Kuvaas, 2013).

These individuals are considered to have satisfied their needs for autonomy, competence and relatedness (Dysvik & Kuvaas, 2013), which are also referred to as basic psychological needs. Basic psychological needs satisfaction can substantially account for the dark and bright side of people's functioning (Vansteenkiste & Ryan, 2013).

Figure 3: Self-determination theory basic psychological needs

2.5.2 *Basic psychological needs*

A number of studies have shown that basic psychological needs can be indicators of wellness and have had people reportedly feeling better about themselves and their lives (Vansteenkiste & Ryan, 2013). When these needs are thwarted, they feel less well-being (more ill being) and tend to develop a number of coping strategies or engage in compensatory behaviour, which results in mood swings. (Vansteenkiste & Ryan, 2013).

Figure 4: Graphic overview of the consequences related to the experience of need frustration
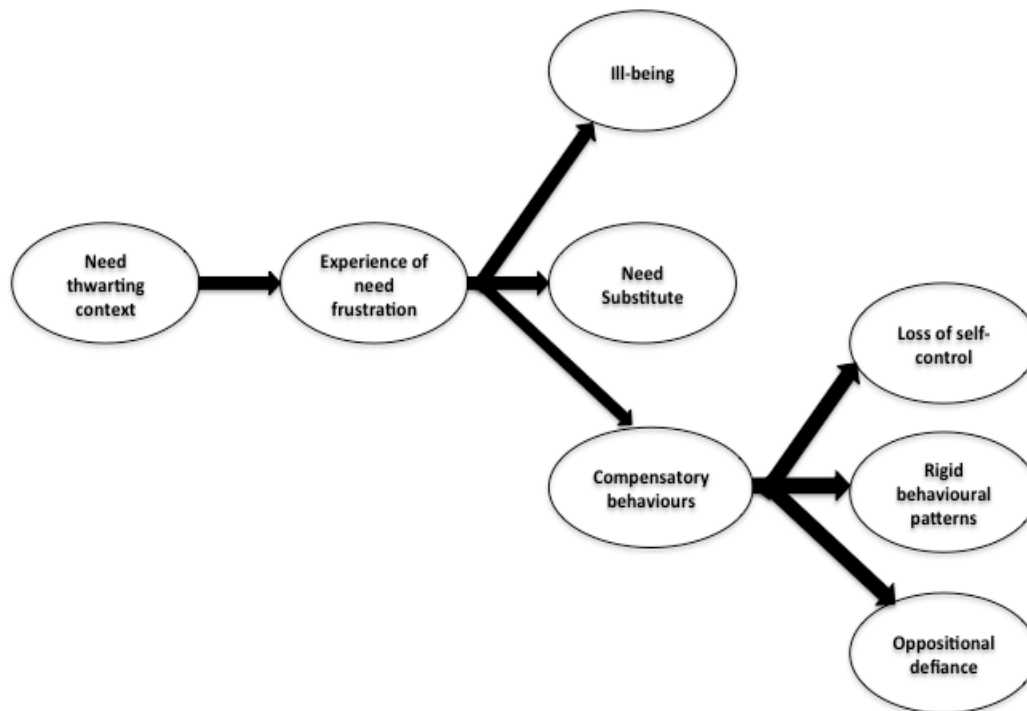
Source: (Vansteenkiste & Ryan, 2013)

Figure 4 reflects the impact of thwarting an individual's needs, which leads to frustration that creates ill-being within the individual. The individual will then search for need substitutes through compensatory behaviour (Vansteenkiste & Ryan, 2013). This compensatory behaviour can occur as a loss of self-control, rigid behavioural patterns and oppositional defiance, all of which can negatively affect the person's motivation.

The substitution of these needs could mean that more importance would be put on extrinsic goals and compensatory behaviour by the individual, resulting in the release of self control, rigid behaviour patterns and defiant behaviour (Vansteenkiste & Ryan, 2013). Previous studies have shown that satisfaction of the basic psychological needs tends to lead to autonomous motivation, which can predict positive outcomes (Amoura et al., 2015). To better understand basic psychological needs, an understanding of autonomy, competence and relatedness is necessary.

Autonomy allows people to adapt to change, naturally, drawing on their strengths. It enables them to handle complexity in a flexible way and to rely more on their intuition (Maimone & Sinclair, 2014). Autonomous people are known to regulate their behaviour based on interests, authentic preferences and integrated values while autonomous orientation predicts more disclosure, trust and honesty (Vansteenkiste & Ryan, 2013). In the study by Vansteenkiste and Ryan, (2013) they showed that those people higher in trait autonomy, had lower discrepancies between implicit and explicit assessments of achievements and were able to cope with stressful situations better. In other words it can be inferred that people working in autonomy-supportive environments have a higher likelihood of managing stress brought about by changing environments.

Competence is the experience of a sense of effectiveness in interacting with one's environment and being able to exercise ones capabilities (Dysvik & Kuvaas, 2013; Gillet, Lafrenière, Vallerand, Huart, & Fouquereau, 2014; Vansteenkiste & Ryan, 2013). Bandura (1997) refers to this as self-efficacy or belief in his or her ability to accomplish specific tasks (Lunenburg, 2011). Mastery goals are those which employees are concerned about: developing their competence or mastering tasks, whereas performance goals are those where employees are concerned with demonstrating their competence relative to others (Dysvik & Kuvaas, 2013; Gillet et al., 2014). Quick absorption of new material and skills that build on an individual's competence occurs when curiosity is driving discovery; by learning through them, the individuals experience a sense of astonishment and sincere surprise (Vansteenkiste & Ryan, 2013). Individuals see this as being themselves, which also contributes to their own sense of autonomy (Vansteenkiste & Ryan, 2013).

Relatedness concerns the experience of love and care by significant others. In circumstances where there is low relatedness to one's colleagues, it has been shown that the workplace creates less vitality and excitement for work (Vansteenkiste & Ryan, 2013). The social structure that creates, develops and facilitates individual actions and decisions -- and hence generates autonomous motivational behaviours -- is referred to as social capital (S. M. Park & Rainey, 2012).

Autonomy, relatedness and competence are said to be integral to the development and maintenance of intrinsically motivated activities (Vansteenkiste & Ryan, 2013). Intrinsic motivation results from people engaging in behaviours that are inherently interesting (coming from inside the individual), are appealing, pleasurable and engaging them for their own sake *(Houston* et al., 2011; Lin et al., 2013;

Vansteenkiste & Ryan, 2013). Extrinsic motivated behaviours are governed by the prospect of instrumental gain and loss, induced by reward or punishment. There, the incentive is instrumental towards other things of value, independent of the activity (Cerasoli et al., 2014; Dysvik & Kuvaas, 2013; Lin et al., 2013; S. M. Park & Rainey, 2012).

Though intrinsic and extrinsic are opposite forms of motivation, they have been known to overlap (S. M. Park & Rainey, 2012). Deci and Ryan, (2000) have shown that if the conditions of basic psychological needs of autonomy, relatedness and competence are met, they can foster the internalisation of extrinsic motivation (Güntert, 2015). When regulation of behaviour is not dependent on external contingencies but has already been internalised to a certain extent, it is known as introjected regulation (Güntert, 2015).

People who have participated in behaviours that are intrinsically motivated, have been shown to yield significant advantages, such as greater learning and greater creativity (Cerasoli et al., 2014; Vansteenkiste & Ryan, 2013). A study by Lin, Wang and Wang (2012), showed that extrinsic motivation exerted no significant influence on behavioural intention to learn business skills. The emotions associated with intrinsic motivation are joy, interest and excitement, but can be undermined by extrinsic rewards if they are seen as controlling (Güntert, 2015). This can be understood as that, if organisations want to change behavioural intention to support self-managed teams, then organisational change programmes will need to look at intrinsic motivators and not external motivators.

Self-determination theory begins to explain how intrinsic motivation fuels the direction, intensity and persistence of motivated behaviour and why those finding a task more motivating, will expend more intensity and persist longer on it (Cerasoli et al., 2014). According to Deci and Ryan (2000), intrinsic motivation is associated with people's long-term engagements and durable behaviour change (Houston et al., 2011).

Even though the research shows significant benefit of using intrinsic motivation to fuel the desired behaviour, many organisations and institutions still endorse or rely on the carrot and stick type of incentive plan on the assumption that this will exert more desirable behaviour (Cerasoli et al., 2014). This is based on solid empirical backing for this belief (Cerasoli et al., 2014); however, other research has shown that

positive emotions lead to a more positive evaluation of a change proposal (Steigenberger, 2015).

Organisational change is known to destabilise organisations, is costly and often risky (Soparnot, 2011), and the degree to which implemented changes are successful and sustainable is highly contingent upon the workforce's willing acceptance of change (Kuntz & Gomes, 2012). Now that the role of self-determination theory, intrinsic and extrinsic motivation has been discussed, the importance of creating an environment to support an individual's basic psychological needs is evident, if there is to be successful adoption of self-managed teams.

2.6 Adopting the change to a self-managed team

Organisational change is still often associated with failure; as many as 80% of attempted change efforts (Appelbaum et al., 2012; Kuntz & Gomes, 2012). Even with these failures, only a few researchers have focused on what organisational change does to individuals and their attitude to the change in general (Jacobs et al., 2013). There is considerable disagreement regarding appropriate change methods. It is clear that change methods should be developed within context of the organisation and that applying a one size fits all change methodology usually ends in failure (Al-Haddad & Kotnour, 2015).

In today's business environment, frequent change to structural, cultural and functional features of the work environment have become emblematic of the modern organisation worldwide (Kuntz & Gomes, 2012). There is a balance to the change that organisations should be concerned with: not to drive the speed of change focusing on opportunity costs resulting, without understanding the impact to the organisation's talent pool (Jacobs et al., 2013). The deeper the organisational change, the more important for people to alter their values and perspectives. For change success, more attention must be given to people (Al-Haddad & Kotnour, 2015).

Kotter, (2002) highlights that people will not change if they cannot see the need to do so and that the core problems people face in implementing his eight steps, is the behaviour of people affected by the change (Appelbaum et al., 2012). Every day, people try new ways to adapt prescribed procedures and practices to an environment characterised by continuous evolution (Maimone & Sinclair, 2014). Changes to an organisation's identity are often experienced as threats to members' individual

identities, which can lead to a less appealing organisation, increasing sick leave and an inability to mobilise additional human resources (Jacobs et al., 2013).

Change forces people to rethink their current situation by developing a plausible story of meaning, cause and consequence, determining the meaning a certain development has and what appropriate course of action they should take (Steigenberger, 2015). An individual's perception of change is affected by perceived discrepancies between their personal beliefs, change scenarios and expected change outcome and can be based on past experiences of change implementation and change climate perceptions (Kuntz & Gomes, 2012). Age must also be considered; people 40 years and older are seen to be less likely to adapt to changes at work and this can moderate the relationship between them and their attitude towards technology as well intrinsic and extrinsic motivation (Elias et al., 2012).

This change process is viewed as an individual's violated expectations and is known as sense-making, which can lead to a positive or negative stance towards the change proposal as well as how long he or she will be motivated to uphold the determination (Steigenberger, 2015). Change often triggers resistive actions from stakeholders (Steigenberger, 2015). Resistance to change is seen as the important reason change fails; however if the resistance is properly understood, it can be an important resource in improving the quality and clarity of the objectives and strategies at the heart of the change proposal, thus increasing the chances of success (Simoes & Esposito, 2014).

An individual's propensity to support or resist change will reassure as to whether the capacity to successfully conduct the change is available, as well as that the overall effect of the change will be positive (Steigenberger, 2015). Readiness to change is an individual level phenomenon impacted by dispositional, structural and functional elements of the work environment (Kuntz & Gomes, 2012). Previous empirical findings have shown that individuals with low neuroticism and high openness to experience, tend to show a more positive attitude towards change (Kuntz & Gomes, 2012). The inverse is that individuals could prescribe anger to a certain type of organisational change and not re-evaluate this emotional response to any future change proposal that they consider similar (Steigenberger, 2015). Affective reactions, particularly emotions, influence how individuals experience a situation and how we interpret information (Steigenberger, 2015).

Further complexity is added to this process because not all team change efforts are successful, since organisations find it difficult to change from hierarchical to autonomous structures (Parker et al., 2015). Employees in self-managed teams still have a reluctance to adapt due to concerns such as loosely defined job descriptions (Parker et al., 2015). Teams must be introduced in a way that builds mutual understanding and allows all members to develop leadership skills (Parker et al., 2015). Groups required to act in a coordinated way, also face the challenge of making sense of the information. Individuals in a group perceive different parts of the full complexity of an event, depending on their role in the group (Steigenberger, 2015). Supporters of the group dynamics' perspective claim that change has to occur at a team level and should concentrate on changing and influencing the norms, roles and values of its members (Al-Haddad & Kotnour, 2015).

To increase the likelihood of change in an organisation, it is good practice to foster positive attitudes towards change in the early stages, with organisation wide communications underscoring the criticality of the changes to the future of the organisation (Kuntz & Gomes, 2012). Later in the change process, individual level approach, training and intra-departmental communication emphasising the personal benefits of the change, will further foster this positive attitude (Kuntz & Gomes, 2012). Thought communication of information influences the behaviour and cognitive dimensions. It depends heavily on the content rather than the mere existence of information and the manner in which it is communicated (Simoes & Esposito, 2014).

2.7   Summary

To adopt self-managing teams there must be a bridging of the identity boundary between multiple identities, such as that of individual versus the collective; a framework where people can feel included and share a sense of "we-ness" (Maimone & Sinclair, 2014). It is critical to the successful creation of self-managing teams, for individuals to feel motivated to adopt this change through a change in behaviour (Houston et al., 2011). In order to adopt this change, individuals within these self-managed teams need to meet their basic psychological needs of autonomy, competence and relatedness, if the change is to be sustainable and long-term, (Gillet et al., 2014). Leadership will play a crucial role in this motivation, as it will need to empower employees rather than restrict non-conformance (Parker et al., 2015).

In the following chapters the researcher will analyse data collected from two hundred and ninety-nine individuals in a banking organisation, which is in the early stages of adopting self-managed teams as the way of working. Using the lens of self-determination theory, specifically the basic psychological needs of autonomy, competence and relatedness, the researcher will attempt to identify the strength of the relationship between the three basic psychological needs, the willingness to adopt change and the desire to be part of a self-managed team.

CHAPTER 3. Research Hypotheses

3.1 Introduction

In this chapter, the researcher, based on the concepts and literature review set out in Chapter 2 of this study, constructed the hypotheses to be able to answer the research question. The constructed hypotheses tested the relationships of autonomy, competence, relatedness, willingness to adopt change and the desire to be part of a self-managed team. The relationship and predictability of age, gender and ethnicity, was also tested by the hypotheses.

The researcher has taken into consideration the purpose of the research question and the determined measures and variables that are required to address the question, as well as the method of data analysis. These statistical data methods are outlined in chapter four.

3.2 Hypotheses

3.2.1 *Hypothesis 1*

Hypothesis 1 determines the relationship among the variables of autonomy, competence, relatedness, and a willingness to adopt change as well as the desire to be part of a self-managed team.

H0: Null Hypothesis	There exists no relationship between autonomy, competence, relatedness, willingness to adopt change and the desire to be part of a self-managed team
Ha: Null Hypothesis	There exists a relationship between autonomy, competence, relatedness, willingness to adopt change and the desire to be part of a self-managed team

3.2.2 *Hypothesis 2*

Hypothesis 2 determines the individual relationship of each of the independent variables of autonomy, competence, relatedness and willingness to adopt with the dependent variable of the desire to be part of a self-managed team.

Hypothesis 2 (a)

H0: Null Hypothesis	There exists no relationship between autonomy and the desire to be part of a self-managing team
Ha: Null Hypothesis	There exists a relationship between autonomy and the desire to be part of a self-managing team

Hypothesis 2 (b)

H0: Null Hypothesis	There exists no relationship between relatedness and the desire to be part of a self-managing team
Ha: Null Hypothesis	There exists a relationship between relatedness and the desire to be part of a self-managing team

Hypothesis 2 (c)

H0: Null Hypothesis	There exists no relationship between competency and the desire to be part of a self-managing team
Ha: Null Hypothesis	There exists a relationship between competency and the desire to be part of a self-managing team

Hypothesis 2 (d)

H0: Null Hypothesis	There exists no relationship between willingness to adopt and the desire to be part of a self-managing team
Ha: Null Hypothesis	There exists a relationship between willingness to adopt and the desire to be part of a self-managing team

3.2.3 *Hypothesis 3*

Hypothesis three will determine whether there is a relationship between the demographics of age, gender, ethnicity and willingness to adopt change.

Hypothesis 3 (a)

H0: Null Hypothesis	There exists no relationship between age and the willingness to adopt change
Ha: Null Hypothesis	There exists a relationship between age and the willingness to adopt change

Hypothesis 3 (b)

H0: Null Hypothesis	There exists no relationship between gender and the willingness to adopt change
Ha: Null Hypothesis	There exists a relationship between gender and the willingness to adopt change

Hypothesis 3 (c)

H0: Null Hypothesis	There exists no relationship between ethnicity and the willingness to adopt change
Ha: Null Hypothesis	There exists a relationship between ethnicity and the willingness to adopt change

3.3   Summary

The hypotheses outlined in this chapter focus on the relationship between the desire to be part of a self-managed team, a willingness to adopt change and the basic psychological needs of autonomy, competence and relatedness in self-determination theory. Age, gender and ethnicity and their relationship with willingness to adopt change are also evaluated. In the following chapter the research design to test these hypotheses will be discussed.

CHAPTER 4. Research Methodology

4.1 Introduction

The purpose of this research was to demonstrate the existence of a relationship between the fulfilment of the basic psychological needs of autonomy, competence and relatedness and self-managed teams. The research also determined whether the fulfilment of the basic psychological needs could support an individual's willingness to adopt the organisational change and influence a desire to be part of a self-managed team. The literature review in Chapter 2 established that self-managed teams are more productive and effective than other types of team. The research was also intended to establish whether intrinsic motivation is supported by someone's perceived control over his or her behaviour. The detail outlined in Chapter 2 also informed the research methodology chosen for this study. Chapter 3 asked empirical questions of both a descriptive and exploratory nature.

To achieve the research objectives, the researcher had to determine whether self-managing teams are seen as part of a needs-supportive or needs-thwarting environment and how individuals perceive the experiences created by that environment. The research also needed to identify whether a willingness to adopt organisational change was effected by the perceived satisfaction of basic psychological needs in self-managing teams.

4.2 Role of the researcher

This study was possible due to the advantageous position the researcher currently holds within the organisation in which the study was completed, as the Head of Agile. Agile is an alternative to traditional project management; it was initially used in software development but has since expanded into other areas of business. It promotes self-managed teams able to respond to unpredictability through incremental, iterative work cadence. It talks to the principles of empowering people, removing waste from delivery and bringing focus to the work at hand. Agile is an alternative to the popular waterfall approach of sequential development. Through this leadership role the researcher had unrestricted access to all individuals who are currently in the process of transitioning to self-managed teams. This role also puts the researcher in a unique position to further influence and support the existing

adoption of self-managing teams in the current organisation as well as future organisations.

4.3 Research design

4.3.1 *Introduction*

Research design requires an activity and time-based plan always based on the research question; it is a guide for selecting sources and types of information and is a framework for specifying the relationship among the study of variables (Zikmund, Carr, & Griffin, 2012). To produce an accurate representation of someone's events or situations (Saunders & Lewis, 2012), or to describe systematically a situation, problem, phenomenon, service or programme (Kumar, 2011), the research design called for a descriptive study.

Literature previously reviewed highlighted that there has not been specific research on the fulfilment of basic psychological needs through self-managed teams. For this reason, exploratory research was chosen because it answers the objective of studying an area where little is known (Kumar, 2011; Neuendorf, 2002; Saunders & Lewis, 2012). A correlational study was also chosen as this focuses on establishing whether there is a relationship, association or interdependence between two or more aspects of a situation being studied (Kumar, 2011).

Rea and Parker (2014) determined that survey research is appropriate if sufficient secondary data is not available, there is a desire to generalise the findings, there is accessibility to the respondent population and that the data is of a self-reportable nature. Based on the large sample size chosen (Saunders & Lewis, 2012), the accessibility the researcher had to the respondents and the intention to generalise the findings (Creswell, 2008), it was determined that survey research was an appropriate research methodology for this study.

Administering a questionnaire is not quick and easy and there are concerns around sample representation, response rates, designing and piloting your data collection instrument (Saunders & Lewis, 2012). To mitigate these concerns the following measures were put in place for the study:

- The survey was added as part of the Agile fundamentals training programme, to be completed post each training session held.
- A paper-based questionnaire was physically distributed to each respondent, to ensure that all would receive the survey after the completion of the Agile fundamentals training programme. This removed the risk of technology issues such as access to on-line surveys.
- A simple Likert scale design was used to assist with the capturing of the data after its collection, which disrupted the research only minimally.

Kumar (2011) posits that qualitative research is restrictive of sample size and can be unstructured with more of the focus on describing a phenomenon than explaining it. Quantitative research has been defined as the explaining of phenomena through the collection of numerical data and analysing that using mathematically based methods (Muijs, 2004). Based on the use of numerical data, the desired ability to test the hypotheses in an attempt to explain the relationship of fulfilment of basic psychological needs and self managed teams, as well as the effects on willingness to adopt change, a quantitative research methodology was chosen (Muijs, 2004). The reliability and validity of the data was also important to the study. Subjectivity of data is a major criticism of qualitative research as well as the increased risk of response bias (Creswell, 2008) which further supported the choice of a quantitative approach

4.3.2 *Universe and Population*

The financial industry, and in particular the banking industry, encompasses a large field across the global environment. As demonstrated in Chapter 1, the financial industry is changing and a number of the institutions within that industry are adopting a more adaptable and flexible operating model, which includes self-managing teams.

A population is defined in the context of analysing behavioural observation data as the group of individuals who a researcher wishes to generalise for the results of the study (Suen & Ary, 2014), and refers to the complete set of group members (Saunders & Lewis, 2012). This definition is further detailed as employees within the identified financial institution who are in the early stages of adopting self-managing teams and who have completed the Agile fundamentals training. These employees come from various levels of the organisation

hierarchy including middle and executive level management. The employees were of mixed ethnicity, gender and age. They were selected due to the ease of access the researcher had to them.

4.3.3 *Unit of Analysis*

Graneheim and Lundman (2004) define a unit of analysis as the theme or abstract of the data identified in a study. As this study focused on both male and female employees of the designated organisation, they were considered the unit of analysis and each of them was compared at an individual level.

4.4   Sampling

4.4.1 *Sampling technique*

Probability sampling is a sampling technique for selecting a sample at random from a complete list of your population (Neuendorf, 2002; Saunders & Lewis, 2012). Simple random sampling is where each respondent in the sample had a non-zero chance of being included in the sample (Suen & Ary, 2014). This sampling technique was deemed appropriate as attendance at each of the training sessions, where the survey was distributed, was based on employee availability to attend the training. The training was also open to all thirty-eight thousand employees of the studied financial organisation, based on seat availability, which increased the confidence that the sampling approach would provide an unbiased sample, as the researcher was not involved in the respondent selection process.

4.4.2 *Sampling frame*

The sampling frame refers to the complete list of the population (Saunders & Lewis, 2012) used as part of the study. Employees making up the sample frame were identified as the best representation of the researcher's study, based on the fact that the training was available to all persons within the organisation, regardless of position, grade or role. This allowed for a broad-based representation of the organisation as part of the sample. It was critical that the respondents understood the principles and concepts around self-managing

teams to be able to complete the questionnaire, since self-managed teams were a new concept for the organisation.

4.4.3 *Sample size*

Kumar (2011) stated that the larger the sample size the more accurate estimations will be and the greater the number of elements you find the better the representation of your population. The sample size used 299 employees of the identified financial industry who met the following criteria:

- Employees would have had to complete the Agile fundamentals training, which required attendance at a face-to-face, 1-day workshop.
- The identified financial institution currently employs all selected respondents. This was used to ensure that all employees were eligible to participate in the agile fundamentals training.

This group was identified as homogenous as they had all been exposed to the same set of training and had established their views of self-managed teams based in a similar context. This ensured that all the respondents completing the questionnaire had received the same perspective on self-managed teams. Their responses would have been on their perceived benefit or lack thereof.

4.5. Data Collection

4.5.1 Questionnaire design

The complete questionnaire provided to respondents can be found in Appendix 1. The questionnaire was also piloted with five other individuals to ensure that the questions were understandable and relevant to the constructs of the research.

Saunders and Lewis (2012) state that a questionnaire must provide sufficient data to be able to answer the research question, plus meet all the objectives set out in the research. This required the questionnaire to be compiled based on the concepts outlined in Chapter 2 and the hypotheses detailed in Chapter 3.

Deci and Ryan developed a Likert scale questionnaire focused on obtaining responses on the three basic psychological needs of autonomy, competence and relatedness, which form part of their research into self-determination theory (Deci,

Edward L., Ryan, 2015.). This questionnaire was adopted and adapted as part of the design of the questionnaire for this specific study (Deci and Ryan give permission on their website to use it, as long as it is to contribute to the academic understanding of self-determination theory). Additional questions to determine an individual's willingness to adopt change when presented with a self-managed team were developed by the researcher and included in the questionnaire distributed. These constructs were added to the questionnaire in a non-sequential manner so as to avoid the respondent identifying which questions were testing which construct.

The following constructs were tested as part of the questionnaire:

Autonomous Satisfaction -- The respondent feels that the need for autonomy is satisfied as part of a self-managed team.

Autonomous Frustration -- The respondent feels frustrated that the need for autonomy has not/will not be met in a self-managed team.

Relatedness Satisfaction -- The respondent feels that the need to relate to others in the work environment is satisfied as part of a self-managed team.

Relatedness Frustration -- The respondent feels frustrated that he or she will not be able to relate to others in a self-managed team.

Competence Satisfaction -- The respondent feels that he or she will feel competent as part of a self-managed team.

Competence Frustration -- The respondent feels frustrated that his or her need for competence has not/will not be met in a self-managed team.

Willing Adoption – The respondent is a willing adopter of self-managed teams and is open to the change.

Forced Adoption – The respondent feels that the adoption has been forced upon him or her.

Each of the constructs in the questions was measured using a Likert scale, also known as a summated rating scale. A Likert scale was used to place different respondents in relation to each other in terms of intensity of their attitude towards each construct (Kumar, 2011). The researcher, choosing to take a pragmatic approach to the research, decided to use a closed question survey, where

respondents were asked to provide a level of agreement or disagreement on thirty-four questions relating to the constructs. The questions were classified into a two-directional category measure with a negative and positive position for each of the four constructs, with five points to distinguish between each of the points in the Likert scale (Kumar, 2011).

The questionnaire was paper-based and distributed to all respondents at the end of the Agile fundamentals face-to-face training programme; it was completed as part of the education session. The researcher chose this method as it increased response rates: not all attendees of the Agile fundamental education sessions had access to online devices during the session, which would have decreased the number of completed questionnaires.

Respondents were also asked to provide categorical demographics of age, gender and ethnicity, which would allow for further analysis of the completed questionnaire.

4.4.4 *Data collection*

The data was collected through a physical, paper-based questionnaire. No on-line or electronic resources were used in the collection of the data. The data was captured into Microsoft Excel to be imported into SPSS for statistical analysis. The questionnaire's time frame was considered too long by some of the respondents and this should be considered for any future studies in this research. The workshop facilitator collected all questionnaires immediately after they were completed and were collected from the facilitator, by the researcher, on the same day.

4.4.5 *Reliability and validity*

As per Chapter 1, this study looked to contribute to the academic understanding of self-managing teams and the fulfilment the basic psychological needs of autonomy, competence and relatedness. The research also determined the importance of the effects of basic psychological needs on a willingness to adopt organisational change and a desire to be part of a self-managed team. However, if the data collected was to contribute academically, it had to be both reliable and valid.

Saunders and Lewis (2012) consider the reliability of the data as critical, to ensure that the collection and analysis procedures would produce consistent findings.

Reliability refers to the extent to which the measurement of a phenomenon can provide stable and consistence results (Wilson, 2014).

There were a number of principal factors that could have affected the reliability of the research findings and conclusions (Kumar, 2011). Due to the nature of this study, the principal factors considered as pertinent were subject bias and observer bias. Subject bias is defined as respondents providing unreliable information in case the truth was seen in a bad light (Saunders & Lewis, 2012). In an attempt to elicit truthful responses, all respondents who participated were granted anonymity. . Observer bias speaks to the method in which different researchers may interpret the same data differently, which could bias the findings and conclusions (Saunders & Lewis, 2012). Although observer bias could not be completely mitigated, by the use of a quantitative research methodology, with numerical data in the statistical interpretation of the data, the researcher attempted to limit the impact of differing interpretations of the data.

Wilson (2014) states that even though reliability is important to a study, it is insufficient if not combined with validity. Validity is the extent to which the study's data collection methods accurately measured what they were intended to measure and that the research findings are what they profess to be about (Kumar, 2011). In terms of this research, the data collection tool was deemed valid as it was based on previous academic bodies of knowledge in self-determination theory from Deci and Ryan and will be further validated through statistical testing (Dillon, 2004).

4.4.6 *Generalisability and time dimensions*

Wilson (2014) states that research which attempts to take an interpretivist approach, must aim to have a representative sample. A previous study by Parker et al. (2015), posits that empowerment of self-managed teams in a service-orientated environment is a fitting philosophy to be reasonably judged appropriate to any other high-intensity contact setting. To this end, the researcher considered that the measures in this study could be considered common to other situations in the financial industry (or to greater extent, industries in general) adopting similar changes.

This study was limited to a specific period of time and was unable to be extended into a longitudinal study (Neuendorf, 2002; Saunders & Lewis, 2012). The data was collected between the 3rd July and 31st August 2015, which determined a cross-sectional study approach by the researcher (Kumar, 2011).

4.6 Data Analysis

4.6.1 *Data preparation*

The data for 299 respondents was populated onto a Microsoft Excel spread sheet where it was coded for analysis, as detailed in Chapter 5. The data was imported into IBM SPSS, where it was coded for compatibility, so that the identified statistical tests could be run. The data was coded into numerical values.

To be able to run descriptive or inferential statistics, running an exploratory process in a quantitative questionnaire approach by means of a missing value analysis, is considered necessary (Field, 2013). This will determine if any of the participants in the study have not answered all the questions. This study made use of both descriptive and inferential statistics to describe collected data and, as such, a missing value analysis was applied.

4.6.2 *Reliability analysis*

As stated in Chapter 4.5.3, data must be deemed reliable to be considered a contribution to the academic literature, future studies, and to validate its generalisability. To determine this, Cronbach's alpha was used to measure the internal consistency of the data, which is the most commonly used measure of scale reliability (Wilson, 2014).

A Cronbach's alpha of lower than a value of 0.7 has often been considered to indicate unreliability, though this can depend on the diversity of the constructs (Weiers, 2011). The rule of thumb developed by George and Mallory (2003), to measure the reliability of data, was used as the identifying measure for this study.

Table 2: Cronbach's alpha measurements

Cronbach's alpha	Internal consistency
α ≥ 0.9	Excellent
0.9 > α ≥ 0.8	Good
0.8 > α ≥ 0.7	Acceptable
0.7 > α ≥ 0.6	Questionable
0.6 > α ≥ 0.5	Poor
0.5 < α	Unacceptable

Source: (George D. & Mallery P., 2003)

In testing reliability, the study also needed to ensure that the appropriate variables were being tested. The Kaiser-Meyer-Olkin (KMO) index, which is part of the principal component analysis testing, was used to ensure that the appropriate variables were being tested (Weiers, 2011). KMO represents the ratio of the squared correlation between variables to the partial correlation between variables (Field, 2013). Due to the fact that this correlation can vary between 0 and 1, Field (2013) suggests that a KMO measure of 0.5 be considered as barely acceptable and that anything lower than this would need additional data. To validate that all variables in the correlation matrix did correlate, a Bartlett's test of sphericity (Weiers, 2011) was applied to identify whether the correlation matrix was significantly different from an identity matrix.

Table 3: KMO measures and meaning

KMO Measure	Meaning
KMO ≥ 9	Marvelous
0.8 > KMO ≥ 0.9	Meritorious
0.7 > KMO ≥ 0.8	Middling
0.6 > KMO ≥ 0.7	Mediocre
0.5 > KMO ≥ 0.6	Miserable
KMO < 0.5	Unacceptable

Source: (Kaiser, 1974)

4.6.3 *Descriptive tests*

To be able to describe the data collected, there needed to be an understanding of the distribution of the data from a central point, to show how that data related to each set of data collected (Field, 2013). Measures of central tendency and dispersion, as well as correlation testing, were chosen to describe the data collected as part of this research.

Confirmatory factor analysis was performed to test the structures and relations between latent variables in each of the hypotheses (Field, 2013). The results provided a beta for each of the questions for every construct and identified which of the questions had the strongest associations to the construct being tested.

Measures of central tendency and dispersion were used to calculate where the center of frequency distribution lay by using the mode, median and the mean (Weiers, 2011). These measures of dispersion quantified the spread or dispersion of scores in the data using the sum of squares, variance and standard deviation as measures (Field, 2013).

Table 4: Measures of central tendency

Mean	The average score of the central tendency when all scores were added up and divided by the total number of scores
Median	A way to quantify the centre of a distribution (middle score) when ranked in order of magnitude
Mode	The mode was the score that occurred most frequently in the data set. The distribution could have had two modes (bimodal) or multiple modes (multimodal)

For the purposes of this research only standard deviation was used as it is a good measure for dispersion on a five-point Likert scale (Field, 2013). A low mean for a variable was representative of the general agreeability response with the lowest (1) being Strongly Agree and the highest (5) being Strongly Disagree. This was inversed for the questions that were reverse phrased to highlight frustration of the participant. Where a small standard deviation and variance for a variable was evident, this

showed consistency in the responses with little to no difference in the responses across the data.

Table 5: Standard Deviation

Large Standard Deviation	Indicated that the data points were distant from the mean
Small Standard Deviation	Indicated that the data points were close to the mean

Correlation tests determined whether a positive relationship, no relationship or a negative relationship existed between the two groups of variables used Pearson's correlation analysis (Weiers, 2011). Pearson's correlation was measured by the correlation coefficient, which was expressed as "r" and reflected a value between +1 and -1, with 1 being a positive correlation, 0 being no relationship and – 1 reflecting a perfectly negative relationship (Field, 2013).

Effect size was the statistical identifier for the strength of a relationship and the Cohens'd D index was used to indicate effect size (Weiers, 2011).

4.6.4 *Inferential Statistics*

The researcher has stated, within this chapter, the importance of being able to generalise the results from this study to other organisations. Data was not only used as a descriptive measure, but also to infer conclusions from data collected, and to be able to make generalisations about the population from which the data was collected (Field, 2013). The study applied inferential statistical analysis to the hypotheses set out in chapter 3. The statistical tests were determined based on the level of data, the number of groups or samples that were part of the study as well as where the data was collected and the characteristics of the data.

Hypotheses 1: A simple-effects test, also known as a univariate analysis of variance, was performed.

Hypotheses 2: A Pearson's Chi-squared procedure was performed.

Hypotheses 3: A Pearson's Chi-squared procedure was performed.

A level of confidence on the results from inferential statistics run on the hypotheses was required to ensure that the results did not occur by chance (Field, 2013). As part

of this study, the level of confidence was set at 95% which was expressed as a 'p' value or $p = 0.05$. Any finding that had a probability of less than 0.05 indicated that the results could not have occurred by chance and that there is a 95% certainty by the researcher that the results are significant (Weiers, 2011). Any significant null hypothesis greater than 95% was rejected.

The researcher applied the following statistical tests in the analysis of the hypothesis:

- Univariate of variance analysis
- Pearson's Chi-square procedure
- Significance testing

To be able to apply the statistical tests, the researcher had to identify the variables in the study and whether they were dependent or independent variables.

Table 6: Variables

Description	Definition	Research Variables
Dependent	Defined as the caused variables that were determined from the independent variable	Willingness to adopt Desire to be part of a self-managed team
Independent	Defined as the causal variables, which were variables that could be manipulated	Autonomy Relatedness Competence

Univariate analysis of variance

To test the significance of the effect of autonomy, competence, relatedness and willingness to adopt change on self-managing teams, it was necessary for the researcher to apply a simple effects test. A full factorial univariate analysis of variance was used to test the effects of each of the independent variables (Field, 2013). Each of the survey's questions was tested against the proxy question "I feel

that self-managed teams would be beneficial to me and the organisation" for self-managing teams, to determine the significance of each to the self-managing teams. Significance was determined by applying the level of confidence measure set out in this chapter.

A simple interaction effects test was then conducted to see the cross effects of each independent variable identified as significant, on the others, in groups of two and three and then all together against self-managed teams. The researcher used R-Squared as a statistical measure of how close the date was to the fitted regression line and the fit of the model to the data (Field, 2013).

Difference tests

The researcher analysed the differences between the independent variables of the basic psychological needs, autonomy, competence and relatedness, against the dependent variables, willingness to adopt change and the desire to be part of a self-managed team. To determine whether the two groups were significantly different from each other, the researcher applied a t-test to determine if the means of autonomy, competence, relatedness, willingness to adopt and the desire to be part of a self-managed team had a statistical differentiation by either a little or a lot (Weiers, 2011).

The researcher tested for homogeneity using a Levene's t-test based on the large sample size and equal group sizes (Field, 2013). Homogeneity refers to the variance of your outcome. Any variable or variables should be the same in the group of basic psychological needs and willingness to adopt (Field, 2013). Should the test show significance, less than 0.5, it would reflect that the two groups are indeed different and that no homogeneity (similarity) exists in either of the two groups.

4.7   Limitations of the study

This research should make a valuable contribution to the understanding of intrinsic motivation on individuals adopting a self-managed way of working, though there were some limitations:

- The research study only involved behaviour of individuals in one organisation in the industry. The consequence and implication of the population used in this research was that the findings of this study

could be inferred to be across the industry, based on similar environmental variables (Saunders & Lewis, 2012).

- The time frame of the research is limited to a snapshot of the early stages of change adoption, which could result in biased information from employees at a single point in time. The benefit of cross-sectional studies are that they are a good way of gaining insight into the thinking of participants at a specific point in time (Saunders & Lewis, 2012).

- Though all participants completed the Agile fundamentals training, there is no absolute certainty that all participants completely understood the material. This could lead to responses from participants that had no relation to the material taught.

- Though the researcher attempted to mitigate researcher bias, the role of the researcher within the organisation the study was completed could still encourage researcher bias.

4.8 Summary

Chapter 4 introduced the role of the researcher in the study, the research design, how the data was collected, the method of analysis and the limitations of the study. In Chapter 5 there will be a presentation and description of the data analysed from that which was collected.

CHAPTER 5. Results

5.1 Introduction

In Chapter 5, the responses to the data collected as part of the Appendix 1 questionnaire, are presented with a description and analysis of the data. This chapter will detail the process followed in the analysis of the hypotheses set out in chapter 3. This analysis will be the basis of the interpretation of the data in Chapter 6.

5.2 Data preparation

A Microsoft Excel spread sheet was used to capture the data from the questionnaire, which was then coded before being validated. Missing value analysis was then applied to the data to identify any erroneous inputs, but none were found as seen in Appendix 4. Based on the findings set out in Appendix 4, all 299 respondents were validated as applicable to the research.

The results were then divided into four constructs for analysis:

1. Autonomous satisfaction and frustration
2. Relatedness satisfaction and frustration
3. Competence satisfaction and frustration
4. Willing and forced adoption

As the questionnaire contained both positive and negative questions, there was a risk that the negative questions would provide negatively skewed data. To ensure the reliability of the survey responses, reverse score transformations to correct negatively skewed data, were applied. Reverse score transformation is applied to data to correct distributional problems or outliers (Field, 2013). Table 7 below reflects how the scores were reversed for the negative questions.

Table 7: Positive and negative skew coding

Positive			Negative	
Strongly Agree	1		Strongly Agree	5
Agree	2		Agree	4
Partially Agree	3		Partially Agree	3
Disagree	4		Disagree	2
Strongly Disagree	5		Strongly Disagree	1

The demographic data of age, gender and ethnicity was then entered into SPSS and coded as nominal data. The age, gender and ethnicity details were coded as shown in table 8.

Table 8: Demographic coding

Age Coding			Gender Coding	
Age	Code		Gender	Code
0-24	1		Male	1
25-40	2		Female	2
40+	3			

Ethnicity Coding	
Ethnicity	Code
Black	1
Coloured	2
Indian	3
Other	4
White	5

A Cronbach's alpha was then performed on the coded data to determine relatedness to the questions in the constructs. The test resulted in a Cronbach's alpha of 0,903, which, as per table 2 in Chapter 4, reflects high validity and is extremely favourable and considered marvellous.

5.3   Characteristics of sample obtained

This section provided insight into the age, gender and ethnicity of the respondents.

5.3.1   *Descriptive statistics of respondents*

Table 9, below, details the biographical information of all respondents that were deemed valid to the study. As stated earlier, all 299 respondents selected were considered valid.

Table 9: Summary of biographical information

Number of respondents	299	Total	Percent
	0-24	5	2%
Age	25-40	177	59%
	40+	117	39%
Gender	Female	133	44%
	Male	166	56%
	Black	75	25%
	Coloured	13	4%
Ethnicity	Indian	58	9%
	Other	4	1%
	White	149	50%

The detail in the table above highlighted that the respondents were an almost similar number of male and female. This was seen as a positive outcome as results of the inferential statistics were close to a gender-even spread of employees.

5.4   Response rate

The response rate in this study was very high due to the respondents being readily available through the Agile fundamentals training programme that was on-going in the identified organisation during the period of data collection. Two hundred and ninety-nine (299) fully completed surveys were selected for the study, which was deemed a suitable sample size.

5.5   Analysis

Descriptive and inferential statistic testing was performed on the hypotheses set out in Chapter 3, to summarise the collected data in a meaningful way and to allow the researcher to observe any patterns within the data. The aim of this section was to describe the descriptive and inferential results of the tests performed.

5.5.1   *Descriptive statistics*

In this section, the aim was to describe some of the descriptive results from the measures of central tendency and dispersion, as well as frequency tests that were performed. These statistics identified the validity and the characteristics of the data, but did not answer the research questions of this study.

Confirmatory factor analysis

By performing a confirmatory factor analysis, each of the constructs was tested. This produced the beta for each of the questions in the construct. The tables below show the betas for the willing adoption and the forced adoption constructs.

Tables 10: Willing adoption and forced adoption betas.

Question	Estimate
WA1	.630
WA9	.709
WA17	.584
WA25	.404
WA33	.723

Question	Estimate
FA2	.025
FA10	.374
FA18	.604
FA26	.469
FA34	.595

The betas show that question 33*:* "I feel positive about the new direction the organisation is taking with this new way of working", measuring willing adoption of change, is the one most closely associated with the construct. Even though this was the case the study applied question 9: "I feel that self-managed teams would be beneficial to me and the organisation", as the proxy question to reflect the desire to be part of a self-managed team. Both question 9 and 33 had betas of 0.7. However, question 9 was deemed more appropriate by the researcher to the construct for desire to be part of a self-managed team.

The Tables below reflect the betas tested for each of the constructs for basic psychological needs.

Tables 11: Autonomous satisfaction and frustration betas.

Question	Estimate
AS3	.425
AS11	.660
AS19	.740
AS27	.633

Question	Estimate
AF4	.059
AF12	.700
AF20	.466
AF28	.368

Question 19: "I feel that I would be comfortable to express myself through my choices in a self-managed team" identified a measure of autonomy satisfaction as associated most to the construct. In the measure of autonomy frustration, question 12: "I feel that in a self managed team I would still be required to do many actions that I would not choose to do",

Tables 12: Relatedness satisfaction and frustration betas.

Question	Estimate
RS5	.548
RS13	.747
RS21	.680
RS29	.671

Question	Estimate
RF6	.510
RF14	.596
RF22	.623
RF30	.504

The tables, above, reflect that question 13: "I would feel connected with my colleagues as part of a self-managed team" most closely associated a measure of relatedness satisfaction with the construct. Question 22: "I would feel in a self-managed team that the colleagues in my team would dislike me" was identified as the most closely associated with the relatedness frustration construct.

Tables 13: Competence satisfaction and frustration beta's.

Question	Estimate
CS7	.662
CS15	.688
CS23	.841
CS31	.574

Question	Estimate
CF8	1.000
CF16	1.390
CF24	1.421
CF32	.935

 "I would feel confident that I would achieve my goals as part of a self-managed team", identified as question 23 in the questionnaire, was the most closely associated with construct of competence satisfaction. In the construct of competence frustration, question 24: "I would feel insecure about my abilities in a self-managed team" was identified as the most closely associated.

Measures of central tendency and dispersion

Table 14 reflects the results from the measures of centrality and dispersion tests performed on the collected data. The purpose of this test was to determine whether a positive or negative skew reflected. The researcher was looking to identify a positive or negative skew which would reflect too many low scores, or a build up of high scores, respectively (Field, 2013). The key identifier is a positive or negative kurtosis on the distribution of the tails. A positive value kurtosis would indicate a pointed heavy-tailed distribution whereas a negative value would indicate a flat light-tailed distribution.

Tables 14: Measures of central tendency table.

	N	Range	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
WA33	299	4.00	1.7492	.79467	.632	1.167	.141	1.990	.281
FA18	299	4.00	2.1505	.93806	.880	.825	.141	.436	.281
AS19	299	4.00	1.8796	.68460	.469	.600	.141	1.135	.281
AF12	299	4.00	2.9030	.98680	.974	.069	.141	-.618	.281
RS13	299	4.00	1.8896	.68873	.474	.953	.141	2.742	.281
RF22	299	4.00	1.8930	.79126	.626	1.175	.141	2.306	.281
CS23	299	4.00	1.8194	.69090	.477	.930	.141	2.521	.281
CF24	299	4.00	1.8261	.80050	.641	1.114	.141	1.729	.281

The extract from the descriptive statistics shows that the average of the number of responses related to frustration is very low, between 1 and 2 except for autonomous frustration, where they were closer to 3 and 4. This reflects that most of the responses for frustration were generally skewed towards strongly disagree except for autonomous frustration where they were skewed towards strongly agree.

The numbers of responses, averaged, related to satisfaction were also very low, between 1 and 2. It reflects that generally the responses for these questions were skewed towards strongly agree. In questions AS19 and RS13, the mean was 1.87 and 1.88 respectively, which indicated that the responses, on average, were skewed towards strongly agree.

Standard deviation with a large variance reflects a lack of consistency in responses to a particular question. In the results from the descriptive tests, there is generally not a large variance in the standard deviation of the data set, which indicates consistency in the responses to most questions.

Frequency distribution

Frequency distribution describes plotting the values of observations and the frequency with which each value occurs (Field, 2013). Question 9 of the questionnaire: "I feel that self-managed teams would be beneficial to me and the organisation" reflects willing adoption and was used as a proxy question to measure understanding and acceptance of self-managed teams.

Figure 5: Willing adoption frequency graph.
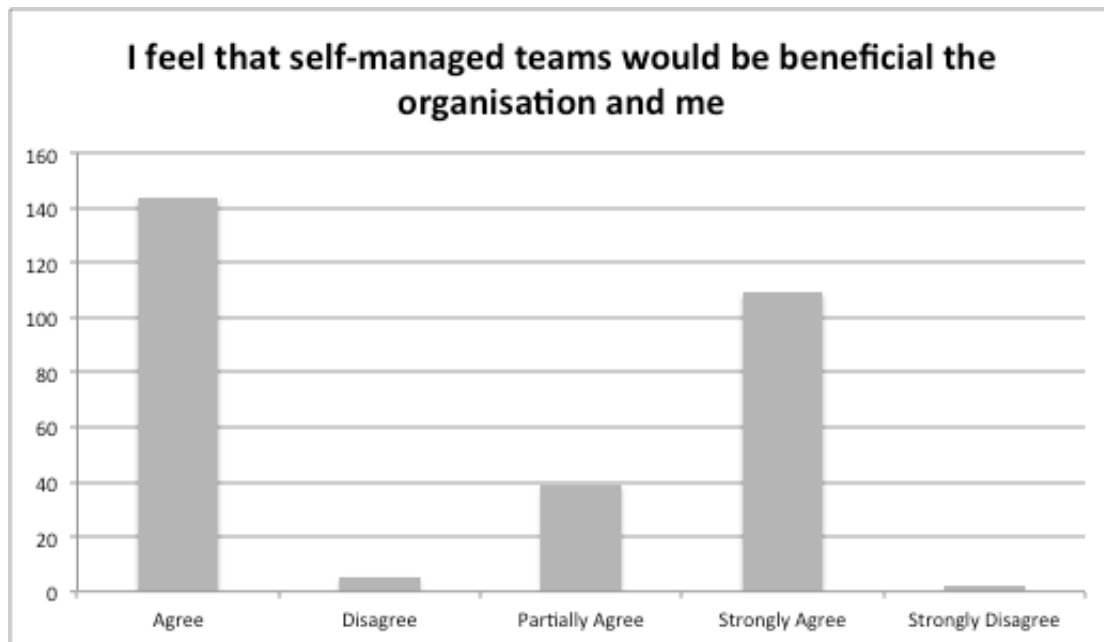
The figure, above, shows that 48% of respondents agreed that self-managed teams would be beneficial and that a further 36.5% strongly agreed out of the 299 respondents. This indicated that over 80% of respondents clearly believed that self-managed teams would be beneficial, not only to themselves, but also to the organisation. Though this question was part of a series of questions to measure willing adoption, there were also those that measured forced adoption such as question 18: "I will participate in a self-managed team though I do not believe that it will work".

Figure 6: Forced adoption frequency graph
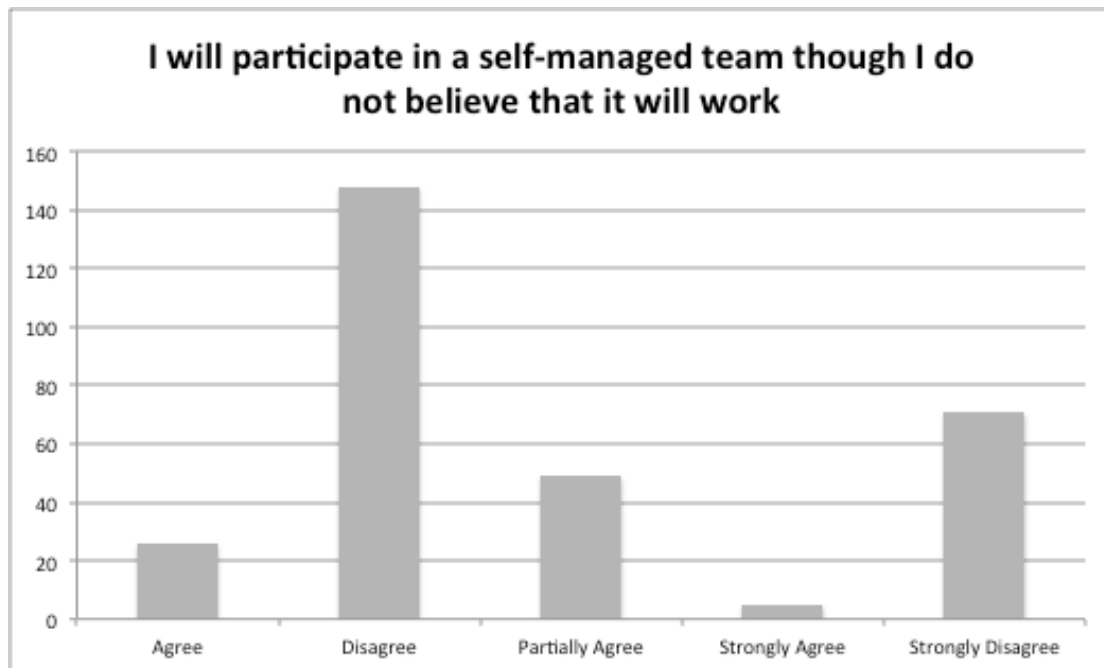
Figure 6 identified that within the 299 respondents, 49.5% disagreed with question 18 and that a further 23.7% strongly disagreed. Though this accounts for 70% of the respondents, there was a further 16.4% who partially agreed, which indicated that further analysis would be required to understand why.

The following graphs are extracts from further frequency tests that were performed on the basic psychological needs of autonomy, competence and relatedness.

Autonomy satisfaction, as tested in question 19: "I feel that I would be comfortable to express myself through my choices in a self-managed team" was a measure of the fulfilment as perceived by the respondent.

Figure 7: Autonomy satisfaction frequency graph
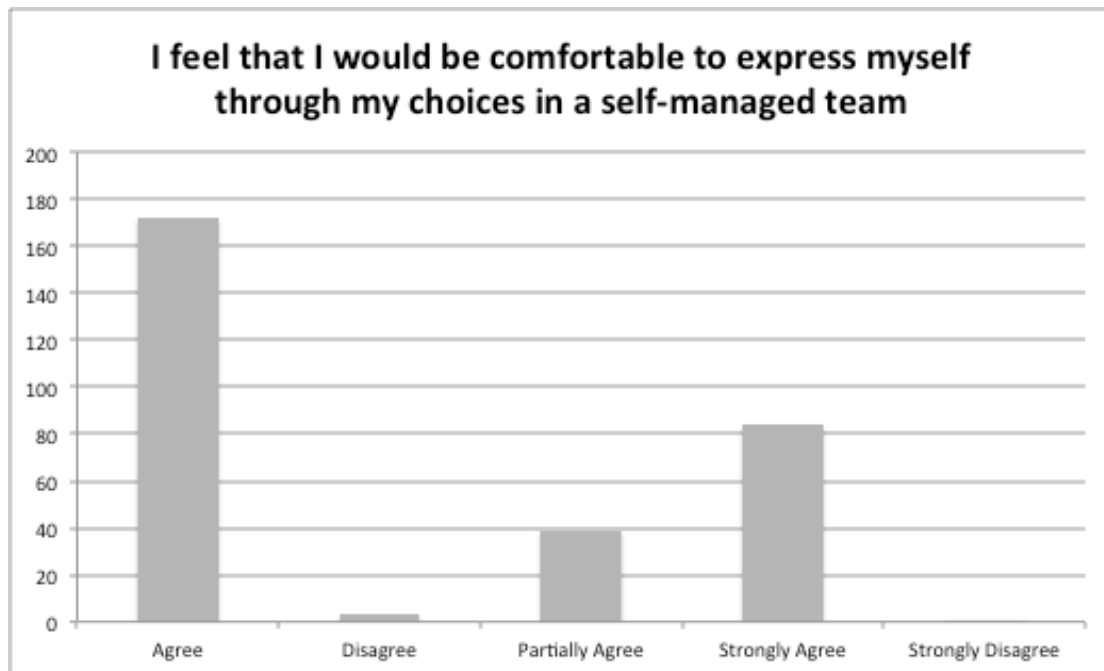
Figure 7 details that 169 of the 299 respondents or 57.5%, agreed that they would feel they have more freedom and choice in an autonomous way of working, with 28.1% strongly agreeing and a further 13% partially agreeing. This indicated a strong sense of autonomy satisfaction among the respondent base. The inverse of autonomy satisfaction was also tested, which was autonomy frustration as in question 12: "I feel that in a self managed team I would still be required to do many actions that I would not choose to do".

Figure 8: Autonomy frustration frequency graph
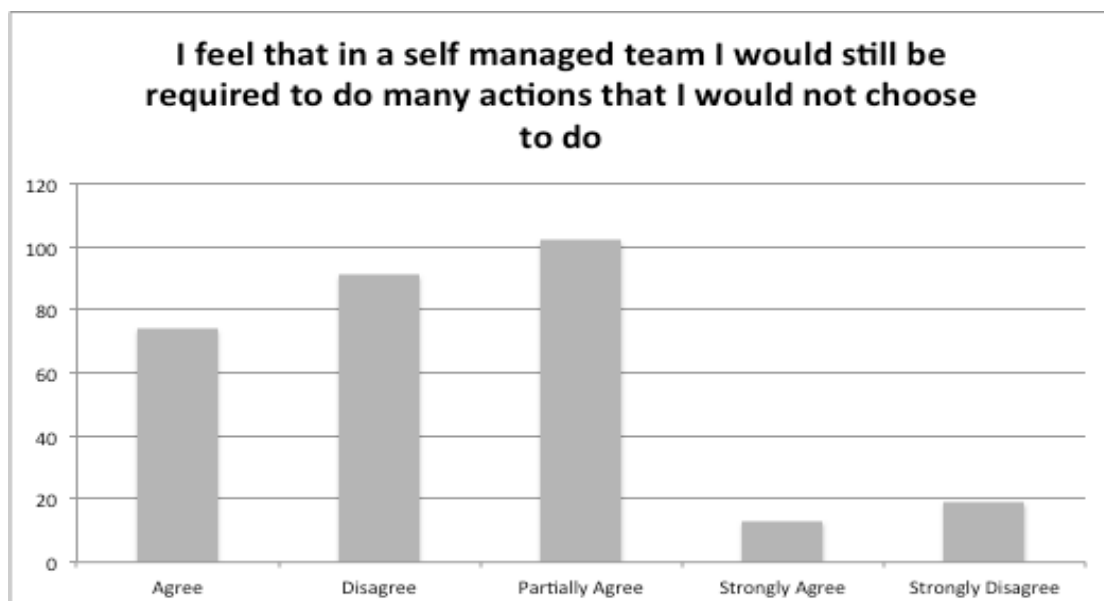
The preceding figure reflects that almost 30% of the respondents agreed that they would not have freedom of choice in a self-managed team, with an additional 34% partially agreeing on that point.

Relatedness satisfaction as tested in question 13: "I would feel connected with my colleagues as part of a self-managed team" of the questionnaire, reflected the following:

Figure 9: Relatedness satisfaction frequency graph
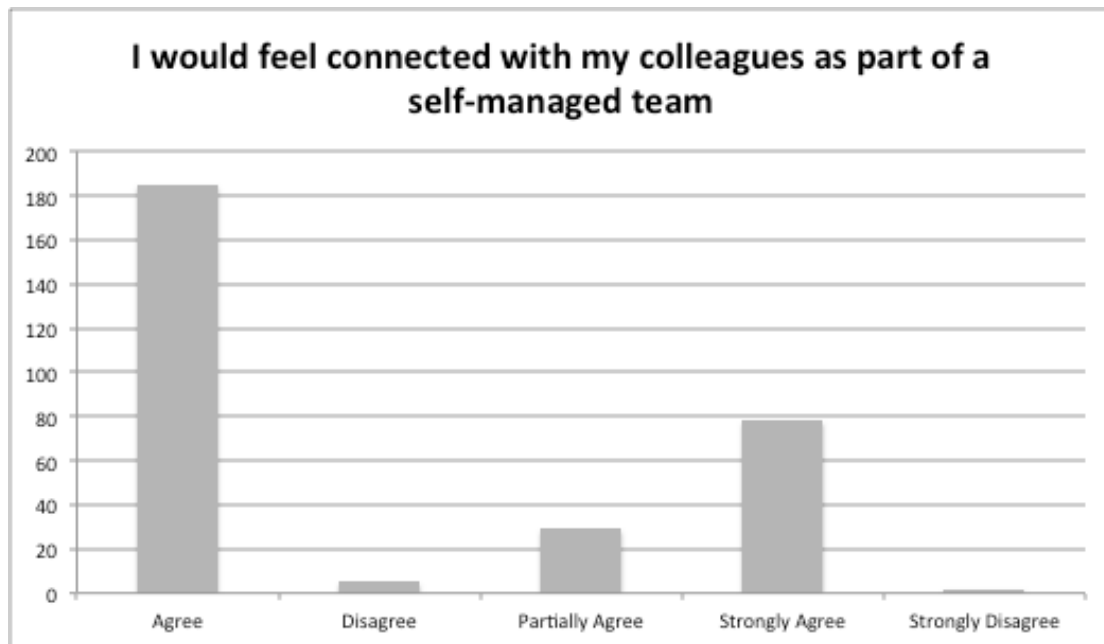
Of the 299 respondents reflected in figure 9, 185 of them, or 61.9%, agreed that they would be able to work better on a personal level in a self-managed team. This was further supported by an additional 26.1% who strongly agreed. This described that over 80% of the respondents had a feeling of relatedness satisfaction with self-managed teams. The alternative to satisfaction: relatedness frustration, was tested in question 22: "I would feel in a self-managed team that the colleagues in my team would dislike me".

Figure 10: Relatedness frustration frequency graph
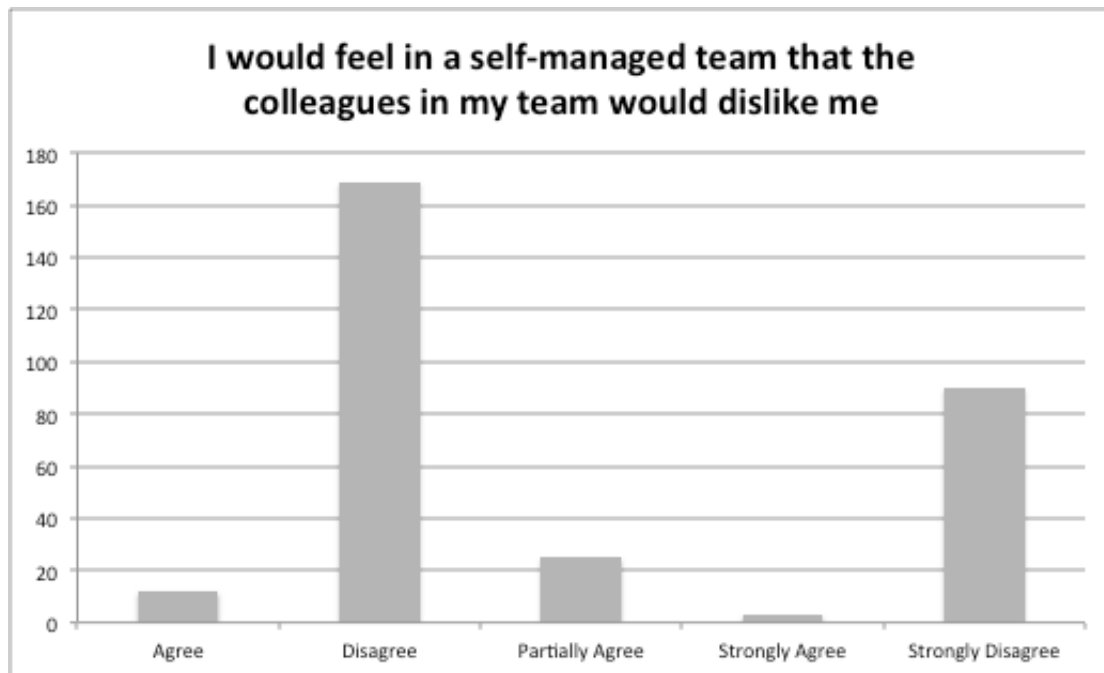
Figure 10 described the disagreement of 169 of the 299 respondents, or 56.5%, and 30.1% of strong disagreement to the question posed, reflecting that over 80% of the respondents disagreed with the statement posed.

The final construct tested was that of competence satisfaction and frustration. Competence satisfaction was tested in part by question 23: "I would feel confident that I would achieve my goals as part of a self-managed team".

Figure 11: Competence satisfaction frequency graph
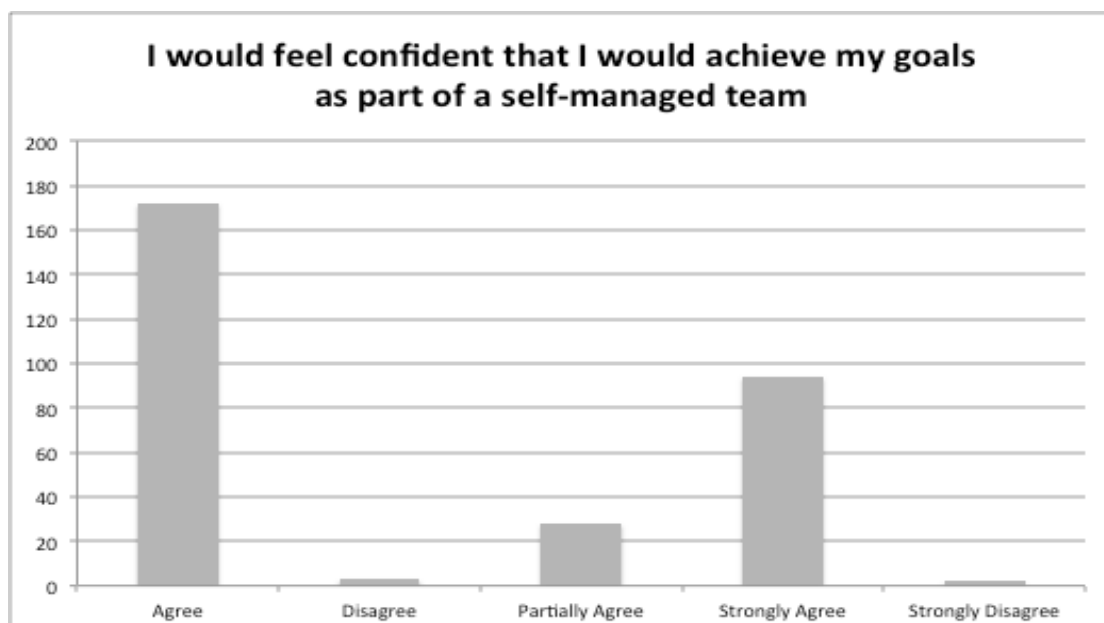
The figure above shows that 57.5% of the respondents, or 172 of the 299 employees, felt that they would be able to do better within a self-managed team, with a further 31.4% strongly agreeing. This reflects that almost 90% of the respondents were supportive of the statement. Inversely question 24: "I would feel insecure about my abilities in a self-managed team" poses the exact opposite of question 23 and was used in part to measure competence frustration.

Figure 12: Competence frustration frequency graph
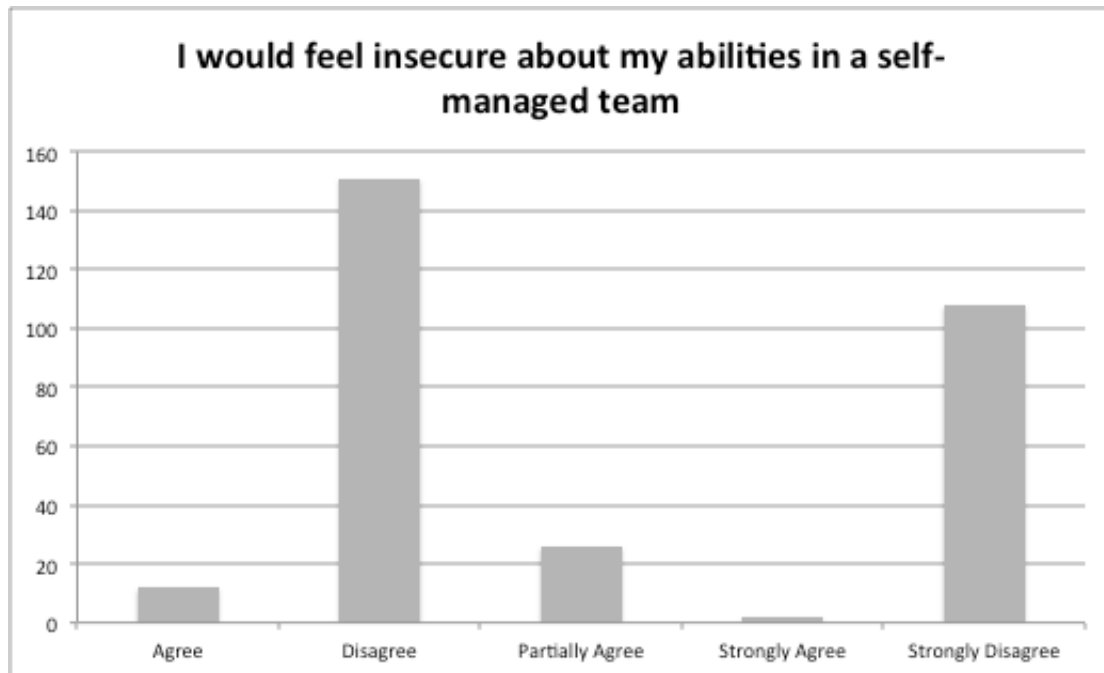
In contrast to figure 11, figure 12, above, reflects that 151 or 50.5% of the respondents disagreed with the statement posed in question 23. A further 36% strongly disagreed, equating to over 80% of the respondents not being supportive of the statement. Once the tests performed on frequency were completed, a correlation test was performed.

Correlation testing

To analyse the relationship between naturally occurring variables within the data collected, a correlation test was performed. The correlation test was used to determine the significance of the relationships based on the strength of those relationships against the levels of confidence set out in chapter 4.

Tables 15: Correlation table

Correlations

		AF4	AF28	FA2	RF30	RS29
AF28	Pearson Correlation	.140[*]	1	.130[*]	.163[**]	.013
	Sig. (2-tailed)	.015		.025	.005	.816
	N	299	299	299	299	299
CF8	Pearson Correlation	-.015	.151[**]	.034	.331[**]	.232[**]
	Sig. (2-tailed)	.795	.009	.553	.000	.000
	N	299	299	299	299	299
RS5	Pearson Correlation	-.198[**]	.025	-.139[*]	-.003	.341[**]
	Sig. (2-tailed)	.001	.671	.016	.960	.000
	N	299	299	299	299	299
CS15	Pearson Correlation	-.219[**]	.010	.026	.204[**]	.562[**]
	Sig. (2-tailed)	.000	.869	.650	.000	.000
	N	299	299	299	299	299

Table 15, above, reflects that the relationship between AF28: "I feel that my daily activities would still be a chain of obligations in self-managed team" and question RF30: "I feel that the relationships I would have in a self-managed team would be superficial" has a significance of 0.005. As the researcher adopted a level of confidence of 95% or 0.05, the relationship between AF28 and RF30 is significant.

The relationship between RS5: "I feel that working in a self-managed team will enable team members to work better together on a personal level" and AF28: "I feel that my daily activities would still be a chain of obligations in self-managed team" has a significance of 0.671. This significance is below the researcher's level of confidence and the relationship is not significant.

5.5.2   *Testing for hypothesis 1*

The null hypothesis (H0) is stated as:

There exists no relationship between autonomy, competence, relatedness, willingness to adopt change and desire to be part of a self-managed team.

A simple effects test was performed on the dependent variable, question 9, a proxy for desire to be part of a self-managed team and the independent variables of autonomy, competence and relatedness, as well as willingness to adopt change to determine the significance between each of them. The level of significance was set at 0.05%. Table 16 reflects an extract of the results from the simple effects test.

Tables 16: Simple effects test table

Dependent Variable: WA9

Source	Type IV Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	138.566[a]	130	1.066	4.752	.000
Intercept	12.221[b]	1	12.221	54.487	.000
AF4	1.678	4	.419	1.870	.118
AF12	.248	4	.062	.276	.893
AF20	.360	4	.090	.401	.808
AF28	.997	4	.249	1.112	.353

a. R Squared = 0.786 (Adjusted R Squared = 0.621)

The results from the simple effects test indicated that overall, the independent variables were significant in terms of the model, even though some of the individual questions tested did not meet the level of confidence required by the study to be significant. Since the results from the simple effects test are significant, and because there is a relationship between autonomy, competence, relatedness, willingness to adopt change and desire to be part of a self-managed team, the null should be rejected.

5.5.3   *Testing for hypothesis 2*

The null hypotheses (H0) are stated as:

a) There exists no relationship between autonomy and the desire to be part of a self-managed team.
b) There exists no relationship between competence and the desire to be part of a self-managed team.
c) There exists no relationship between relatedness and the desire to be part of a self-managed team.
d) There exists no relationship between willingness to adopt change and the desire to be part of a self-managed team.

To determine whether the null should have been rejected for each of the questions in hypothesis 2, a Pearson's chi-square procedure was performed on the data collected. The extracted tables below reflected the results of the tests performed.

The proceeding tables reflect an extract of the tables where Pearson's Chi-square test was performed. The extracts chosen reflect all the questions that were identified as being the most closely associated in each of the constructs in the confirmatory factor analysis. Overall all questions were statistically significant to the model so the null was rejected for each.

Tables 17: Question WA33 Chi-square test

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	193.274[a]	16	.000
Likelihood Ratio	124.489	16	.000
Linear-by-Linear Association	75.148	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.804	.000
	Cramer's V	.402	.000
N of Valid Cases		299	

Tables 18: Question FA18 Chi-square test

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	82.303[a]	16	.000
Likelihood Ratio	76.655	16	.000
Linear-by-Linear Association	32.620	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.525	.000
	Cramer's V	.262	.000
N of Valid Cases		299	

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Tables 19: Question AS19 Chi-square test

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	174.383[a]	16	.000
Likelihood Ratio	127.943	16	.000
Linear-by-Linear Association	67.189	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.764	.000
	Cramer's V	.382	.000
N of Valid Cases		299	

Tables 20: Question AF12 Chi-square test

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	59.317[a]	16	.000
Likelihood Ratio	58.130	16	.000
Linear-by-Linear Association	7.452	1	.006
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.445	.000
	Cramer's V	.223	.000
N of Valid Cases		299	

Tables 21: Question RS13 Chi-square test

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	213.719[a]	16	.000
Likelihood Ratio	133.959	16	.000
Linear-by-Linear Association	82.480	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.845	.000
	Cramer's V	.423	.000
N of Valid Cases		299	

Tables 22: Question RF22 Chi-square test

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	99.073[a]	16	.000
Likelihood Ratio	87.253	16	.000
Linear-by-Linear Association	23.776	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.576	.000
	Cramer's V	.288	.000
N of Valid Cases		299	

Tables 23: Question CS23 Chi-square test

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	261.624[a]	16	.000
Likelihood Ratio	151.730	16	.000
Linear-by-Linear Association	105.582	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.935	.000
	Cramer's V	.468	.000
N of Valid Cases		299	

Tables 24: Question CF24 Chi-square test

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	76.090[a]	16	.000
Likelihood Ratio	69.595	16	.000
Linear-by-Linear Association	30.415	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.504	.000
	Cramer's V	.252	.000
N of Valid Cases		299	

5.5.4 *Testing for hypothesis 3*

The null hypothesis (H0) is stated as:

a) There exists no relationship between age and willingness to adopt change
b) There exists no relationship between gender and willingness to adopt change
c) There exists no relationship between ethnicity and willingness to adopt change

The accepting or rejecting of the null was used through the application of the Person's Chi-square distribution test to the collected data. The level of significance remained at 0.05% for the tests.

From Appendix 6.3, it can be identified that overall there was no statistically significant relationship between age, gender or ethnicity and a willingness to adopt change, so the null has to be accepted. However, for question 1: "I feel motivated to adopt a more autonomous way of working" reflected as significant as per Table 25 below, but insufficient to reject the null.

Tables 25: Question WA1and Age Chi-square test

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	61.671[a]	8	.000
Likelihood Ratio	11.277	8	.186
Linear-by-Linear Association	.024	1	.876
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.454	.000
	Cramer's V	.321	.000
N of Valid Cases		299	

5.6   Summary

This chapter presented and discussed the results of the statistical tests conducted by the researcher as part of this study. The results determined that, overall, the data collected was reliable and statistically significant to the study. It also fitted well with the models used to test the data for Hypothesis 1, 2 and 4. For Hypothesis 3, the data was shown not to be statistically significant. The next chapter will discuss in detail some of the interesting points revealed in the interpretation of the data

CHAPTER 6.   Discussion

6.1   Introduction

The purpose of this research was to determine whether fulfilment of the basic psychological needs of autonomy, competence and relatedness were related to an individual's desire to adopt self-managed teams, as well as a willingness to adopt change in an organisation. The survey constructed as part of this research, was used to measure the fulfilment of those needs and the propensity to adopt change from each respondent. In Chapter 5 the results of the data collected were presented and in this chapter, the interpretation of those results will be discussed.

The constructs in the literature review of Chapter 2 discuss the constructs of self-managed teams, motivation, organisational flexibility and autonomy-supportive leadership. These constructs are central to the understanding of results from Chapter 5. Chapter 6 will provide further insight through their lens.

6.2   Discussion of the descriptive analysis

Chapter 2 highlighted a requirement for more research into why self-managed teams are more productive than non-team working (Parker et al., 2015). The researcher posited that there is an increase in fulfilment of the basic psychological needs of autonomy, competence and relatedness brought on by self-managed teams, which can lead to increased intrinsic motivation. If motivation is considered the fundamental component of any credible model of human performance, then it could be inferred that an increase in intrinsic motivation, leads to increased productivity in self-managed teams (Cerasoli et al., 2014).

When considering the respondents' overall responses, it is evident that there was an overall satisfaction of their basic psychological needs of autonomy, competence and relatedness, as part of a self-managed team.

Patanakul et al. (2012) comments in Chapter 2 that in group methodology, a high degree of autonomy exists and self-managed teams are self-directed or semi-autonomous (R. Park, 2012; Parker et al., 2015). It became clear that a high number of respondents felt autonomous satisfaction from self-managed teams. Though, in

perhaps a contradiction to this, they also felt a high level of autonomy frustration. Using factor analysis, the researcher identified that question 19: "I feel that I would be comfortable to express myself through my choices in a self-managed team" was one of the best measures in the construct of autonomous satisfaction. In the inverse question 12: "I feel that in a self managed team I would still be required to do many actions that I would not choose to do" of the autonomous frustration construct was found to be the better measure.

In the determination of autonomous satisfaction from question 19, there can be seen a strong agreement overall with autonomous satisfaction. However, with question 12, there was a strong partial agreement with autonomous frustration. It can be deduced that even though respondents believe that self-managed teams will give them a freedom of expression, when working within a hierarchical, controlling environment as they currently do, there is a hesitation that the leadership will relinquish sufficient control for them to feel empowered. This is to be expected, according to Parker et al. (2015), as leaders see handing away responsibility for decisions to teams as a high risk.

The best measures of competence were questions 23: "I would feel confident that I would achieve my goals as part of a self-managed team" for satisfaction and question 24: "I would feel insecure about my abilities in a self-managed team" for frustration. It was worth noting that out of all the constructs measured in this study, the questions on competence frustration were deemed the best measures in comparison of their construct. This is important, as there was a strong disagreement from over 80% of respondents to this question. Bearing this strong disagreement and the almost 90% agreement with competence satisfaction, it can be seen that the respondents feel there would be a strong sense of competence in a self-managed team.

If teams are empowered to regulate their own behaviour, select and terminate resources, set their own work schedules and determine budgets (Stewart et al., 2011), it is understandable that a strong sense of competence, within a self-managed team, results. This level of competence can also contribute to the high level of creativity seen within self-managed teams as identified by Maimone and Sinclair (2014). If Lunenburg (2011), is accurate in his research that a keen sense of capability can influence a person's performance, then it can be safe to say that the high sense of competence provided by self-managed teams contributes to their perceived better performance.

Question 13: "I would feel connected with my colleagues as part of a self-managed team" and question 22: "I would feel in a self-managed team that the colleagues in my team would dislike me" were both identified as the best measures of relatedness satisfaction and frustration respectively. In both cases 80% of the individuals responded that there was a strong feeling of relatedness and little sense of relatedness frustration. When self-managed teams are described so and where everyone is prepared to do the jobs of others in the group (Parker et al., 2015), it speaks to the relatedness experienced between team members. According to Maimone and Sinclair (2014), creativity comes from the free flow of interactions, which can only be presumed to be further supported by a degree of relatedness of the teams.

Question 33: "I feel positive about the new direction the organisation is taking with this new way of working" and question 18: "I will participate in a self-managed team though I do not believe that it will work" were determined to be the best measures of the willingness to adopt and the forced adoption construct through factor analysis. Upon review of the frequency analysis it can be clearly seen that individuals had a strong willingness to adopt the change to self-managed teams and that they, in fact, had a strong belief that the move to these types of teams would work.

Change forces people to rethink their current situation (Steigenberger, 2015), and can be seen as a threat to their individual identities (Jacobs et al., 2013). It is, then, a plausible determination that autonomy, the feeling of competence and relatedness, perceived to be felt in a self-managed team, gives the feeling of empowerment over their individual identities. The perceived increase in the fulfilment of their basic psychological needs leads to a strong willingness to adopt the change. The importance of this determination is the possibility of counteracting the high degree of change failures (Appelbaum et al., 2012), as it provides the individual the perceived provision of choice (Hagger et al., 2014).

Upon reflection of the descriptive analysis, it is evident that the principles and values that are provided by self-managed teams have a strong association with an individual's belief in his or her own autonomy, their competence in being able to fulfil their role and their own relatedness to others in the work environment. That said, there is also a clear increase in desire to adopt self-managed teams, when it is felt that these three basic psychological needs will be fulfilled. Given this view that self-managed teams perform better (Parker et al., 2015), it can be reasonably concluded that the increased fulfilment of intrinsic basic psychological needs highly motivates

people and in turn increases performance which is in line with the study by Stewart et al. (2011).

6.3   Discussion of hypothesis 1 testing

Hypothesis 1 sought to demonstrate the relationship between a desire to be part of a self-managed team, a willingness to adopt change and the fulfilment of the basic psychological needs of autonomy, relatedness and competence. The results expected were that fulfilment of autonomy, relatedness and competence is significantly related to an individual's desire to adopt a self-managed team and his or her overall willingness to adopt change.

The results reflected the initial expectations of the study: that there is a significant relationship between the fulfilment of basic psychological needs and a personal desire to be part of a self-managed team, as well as their ultimate willingness to adopt change. These results support the literature that people manage themselves more through internal than external forces (Stewart et al., 2011) and that self-managed teams improve people's attitudes (R. Park, 2012). However, none of the variables tested independently, support the overall significant relationship between the variables tested. Competence satisfaction, though, was the most closely related of the basic psychological needs.

The reasoning behind the lack of significance of individual fulfilment of autonomy, competence and relatedness, compared to a desire to be part of a self-managed team and a willingness to adopt change, could be due to a number of reasons. Most of the literature reviewed in Chapter 2 describes self-managed teams as self-organised, self-regulated and directed to determining plans and managing themselves with minimal to no supervision (R. Park, 2012; Parker et al., 2015; Patanakul et al., 2012). This could infer that the way in which self-managed teams operate, they touch on all the basic psychological needs in unison. With this in mind, it can be suggested that self-managed teams cannot be successfully sustained without autonomy, competence and relatedness being fulfilled together at some level, and that to not fulfil one of them will mean the failure of the team.

The discussion on hypothesis 1 clarified that the fulfilment of intrinsic needs, as a whole, are a significant component of the success of organisational change. They affect the desire to be part of a self-managed team. Thus, in line with Steigenberger's (2015) research, these findings support personal perceptions of whether the basic

psychological needs have been fulfilled and determine their propensity to see this change as positive. The real world application of this suggests that significant focus needs to be put on fulfilling the intrinsic needs of an organisation's people to increase the chances of change success.

6.4   Discussion of hypothesis 2 testing

Hypothesis 2 focused on demonstrating that individually, the basic psychological needs of autonomy, competence and relatedness, as well as a willingness to adopt change, significantly contributed to the desire to be part of a self managed team. The expected results were that the desire was equally related to an individual's expected fulfilment of their needs of autonomy, competence and relatedness (Patanakul et al., 2012).

As expected, the results were that autonomy, competence and relatedness were individually significant to the desire to be part of a self-managed team. These results could be considered counter-intuitive to the findings in hypothesis 1. However, it is considered to further support those findings. It is clearly shown that the individual's desire to be part of a self-managed team can be equally affected by each of the basic psychological needs, which reflects the significance of each. This, taken into context with hypothesis 1's findings, shows that each of the basic psychological needs is as important in supporting the desire to be part of a self-managed team. However, they will individually not contribute to a desire to be part of a self-managed team or increase their willingness to adopt.

These findings provide great insight into the early adoption of self-managed teams in an organisation. According to Parker et al. (2015), organisations have difficulty moving from a hierarchical organisation to a less controlling one and that leadership can find this most difficult. With this in mind, measures must be put in place when setting up new self-managed teams, to protect them from leaders with a domination concept of leadership (Parker et al., 2015). If not, there is a risk of these leaders affecting the team's feeling of autonomy and undermining any feeling of competence which, based on these results, will dramatically decrease the chances of success. As stated in Chapter 2 of this research, leaders need to recognise the limits of external control and understand the role of intelligent leadership (Parker et al., 2015), which is now identified as a critical success factor to this type of organisational change.

It can be concluded from the discussion on hypothesis 2, that the success of self-managed teams is built on the fulfilment of the basic psychological needs of autonomy, competence and relatedness and that each of these needs is as important as the other. It is also evident that a willingness to adopt change must be present when creating the desire to move to a self-managed team.

6.5   Discussion of hypothesis 3 testing

In hypothesis 3, the study attempted to determine whether the demographics of age, gender and ethnicity contributed to the individual's willingness to adopt change. Using chi-square, it was evident that in the hypothesis the null had to be rejected, as there was no significant contribution between the variables. Considering that the sample consisted of 39% respondents that were 40 years and older, this contradicts the view of Elias et al. (2012) that people over 40 years and older are less likely to adapt to changes at work. However it is worth noting that in question 1: "I feel motivated to adopt a more autonomous way of working" was identified as a contributor to willingness to adopt, although this question only contributed 20% to the overall construct and did not have sufficient effect to sway the researcher.

These findings contradicted the initial expectations of the researcher. Through experience in early adoption of Agile, the researcher has found that there has been more reluctance from the older employees and that a number of the early self-managed teams already established have been made up of individuals between the ages 25-40. Though, in the interest of removing bias, the same behaviour has been experienced in individuals from specific departments who have felt that Agile or self-managed teams will not suit their environment, regardless of their age. It was expected that due to organisations finding it difficult to move from a hierarchical structure to an environment of employee autonomy (Parker et al., 2015), that age would contribute to this. The relinquishment of control required to adopt a more autonomous way of working was considered to be more difficult when you have experienced a controlling environment for most of your career. With this said, there have been instances where individuals 40 years and over, have openly welcomed the change to Agile in the organisation. This could reflect that though there might be some reluctance to adopt change, the benefits of a self-managed team are agreeable, even if they do not find it easy to adopt.

The conclusion that can be derived from these findings is that the demographics of age, gender and ethnicity have no significant contributing role to willingness to adopt. This finding, put through the lens of the previous two hypotheses' findings, suggest that the intrinsic motivation created by autonomy, competence and relatedness, are as important at any age, regardless of gender or ethnicity. From this it could be inferred that the adoption of self-managed teams in any organisation, implemented while also fulfilling these basic psychological needs, can be successful.

6.6   Productivity and efficiency model

Upon review of the literature in Chapter 2 and the results analysed from Chapter 5, a model began to appear that reflected the importance of basic psychological needs to the adoption of self-managed teams within an organisation. From the analysis in this chapter it has become evident that to ensure a willingness to adopt by individuals and to increase their desire to be part of a self-managed team, there needs to be fulfilment of all the basic psychological needs of autonomy, competence and relatedness; the more that these needs are fulfilled, the greater the willingness to adopt and the greater the desire to be part of a self-managed team. However, this adoption cannot be successful without autonomy-supportive leadership that understands these requirements. Upon the successful implementation of this there will be increased organisational flexibility, which will allow the organisation to adapt quickly to the changing markets and environments.

In Figure 13, the researcher attempts to show a model that reflects the previous comments and which, in turn, begins to explain the better efficiency seen in self-managed teams.

Figure 13: Self-managed teams efficiency model
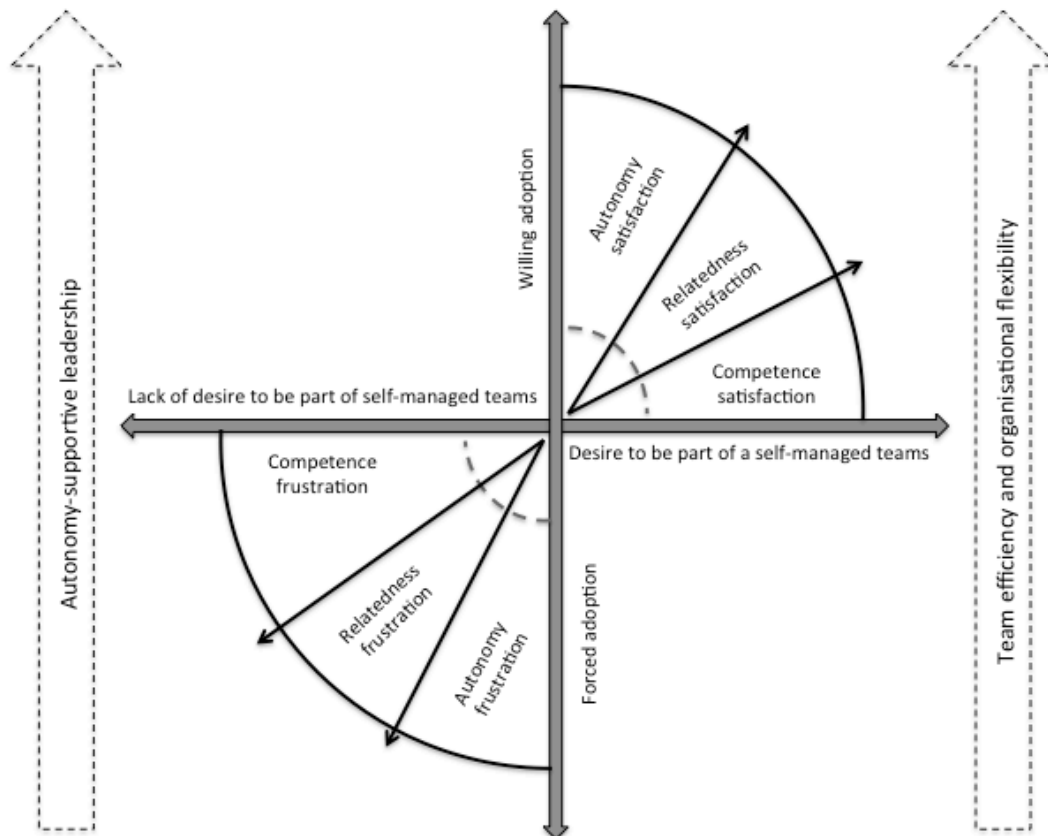
Willing adoption is plotted on the y-axis and desire to adopt self-managed teams on the x-axis to reflect the individual variables , which affect the fulfilment of the phenomena of basic psychological needs. The model proposed in Figure 13, positions that the more the basic psychological needs of autonomy, relatedness and competence satisfaction are fulfilled. The further up the x-axis the desire to be in a self-managed team becomes, the more willing a person becomes to adopt that change (on the y-axis). Autonomy-supportive leadership in the diagram reflects that the more there is of this type of leadership, the higher the chance of success in adoption. Self-managed team efficiency, as well as organisational flexibility, is accordingly increased. Any negative impact on the variables in this model will move the model towards the inverse where there will be a feeling of forced adoption and a lack of desire to be part of a self-managed team.

6.7   Chapter summary

In this chapter, the results from Chapter 5 were analysed through the lens of the literature reviewed in Chapter 2. The chapter discussed in detail the interpretation of

the results in line with the hypotheses set out in chapter 3. The following chapter will outline the implications of these results to real world application and recommendations for future research.

CHAPTER 7. Conclusion

In Chapter 5, the results of the study were presented and then discussed in Chapter 6. In this Chapter, the pertinent findings on the contribution of autonomy, competence and relatedness to the desire to be part of self-managed teams, and a willingness to adopt, are discussed further. This Chapter also includes the implications of the findings, recommendations to stakeholders based on these findings, as well as future research suggestions identified from this study.

7.1   Research background

This study investigated how the fulfilment of the basic psychological needs of autonomy, competence and relatedness, found in self-determination theory, contributed to an individual's desire to be part of a self-managed team, as well as increased their willingness to adopt change.

The research problem that defined the research objective was the high rate of failure in organisation change (Al-Haddad & Kotnour, 2015; Appelbaum et al., 2012; Jacobs et al., 2013; Kuntz & Gomes, 2012; Simoes & Esposito, 2014), and based on the need for organisational flexibility in an unpredictable environment (Maimone & Sinclair, 2014), how one can ensure the success of adoption for self-managed teams which support this organisational flexibility (Parker et al., 2015).

Through the use of literature to highlight the importance of the key constructs identified in the support of this objective, a research design was developed. This was to examine how individuals in the early adoption of self-managed teams perceive their own fulfilment of their basic psychological needs and whether there was openness and an increase in their desire to adopt self-managed teams.

7.2   Findings

The research findings provided insight into the importance of an individual's perceived fulfilment of their own basic psychological needs of autonomy, competence and relatedness in self-managed teams. It was observed that there was a more positive inclination to be part of a self-managed team based on the simple concepts of autonomy, competence and relatedness. In summary, the study found

that the more an individual feels that his or her needs of autonomy, competence and relatedness are being fulfilled in a self-managing team, the higher the desire to adopt the change to a self-managed team; there is an increase in willingness to adopt the change overall. One of the key findings is that unless all the basic psychological needs are met in some way, the chances of an increased willingness to adopt as well as a desire to be part of a self-managed team are greatly decreased. It was also identified that age, gender and ethnicity have no bearing on this desire or a willingness to adopt change. In fact it, could be inferred that an individual's personal belief of whether an organisation is able to deliver on the principles that define a self-managed team, affects a willingness to adopt more than demographics. This further complements Steigenberger's, (2015) results that an individual must believe there is capacity to successfully conduct the change if they are to support it.

Upon review of all the results, it is evident that self-managed teams are, in part, more productive and effective, based on the fulfilment of basic psychological needs of the individuals, moving them to be more intrinsically motivated. If we apply the definition of motivation from chapter 2 as an intervention to move an individual to energise his or her behaviour or intention to act, then it can be deduced that it is an increased feeling of autonomy, competence and relatedness fulfilment which energises a self-managed team's behaviour to perform better.

Ultimately these findings are further validation of self-determination theory's view that work design is an important predictor of self-determined motivation and that the work environment is closely associated with fulfilment of basic psychological needs (Güntert, 2015). New insight gained through this research shows that self-managed teams could be an effective work design, able to fulfil all of the basic psychological needs. Figure 13 depicts that if self-managed teams are established with the proper support, a person's basic psychological needs of autonomy, competence and relatedness could all be fulfilled equally, increasing motivation and ultimately, productivity. There is also evidence that the implementation of self-managed teams would have an increased chance of adoption based on the perceived fulfilment of the basic psychological needs. However, organisations would need to ensure that autonomy supportive leadership is in place, as any failed implementation could negatively affect any future attempts to adopt self-managed teams.

The implication of this is that if organisations are to be successful in the adoption of self-managed teams, they will require an autonomy-supportive leadership style to ensure that none of the basic psychological needs are thwarted when establishing these teams. Neglecting this could affect the team's productivity and efficiency, increase an individual's resistance to change and create the overall failure of the adoption.

7.3   Recommendations

At the onset of this study in Chapter 1, it was positioned that, based on the current rate of technological advancement and global competition, there will be a need for continuous change and an ability for organisations to adapt (Appelbaum et al., 2012). This issue is further emphasised when adopting this way of working, based on the high rate of organisational change failure (Al-Haddad & Kotnour, 2015; Appelbaum et al., 2012; Jacobs et al., 2013; Kuntz & Gomes, 2012; Simoes & Esposito, 2014). The research presented indicates that to support the successful adoption of self-managed teams, there needs to be considerable consideration given to fulfilling the individual's intrinsic needs.

When considering the adoption of self-managed teams, it is important for leaders to review the environment within which they are implemented. Figure 2, in Chapter 2, reflects that an environment which supports needs will lead to the experience of needs satisfaction and ultimately, growth and wellness. A thwarting environment will lead to needs' frustration and general ill-being and malfunctioning. However, in a need-supportive environment, individuals can still experience needs' frustration and vice versa, which highlights the need for close attention to the environment within which they work. Within the needs' environment, a culture of autonomy-supportive leadership will be required, because the traditional leadership styles of tight control (Parker et al., 2015) will not support the autonomous way of working in self-managed teams. In fact, leaders will need to build confidence in an organisation's capacity to adopt self-managed teams and provide meaning to the change for individuals (Steigenberger, 2015).

As managers in the process of adopting self-managed teams as a way of working, due consideration should be given to the culture of the organisation and whether the move from a strictly hierarchical structure to a flattened, more autonomous, structure is possible. If this is a concern, focus should be given to leadership change before

attempting change in the rest of the organisation. A recommendation to HR directors would be to consider the organisation's hiring practices as there would be a need to hire leaders who support this autonomous way of working. Although self-managed teams fulfil the basic psychological needs, it would be neglectful to assume that this would suit all employees and it would be pertinent to screen for this in the hiring process. A further recommendation to HR directors would be to develop a leadership and learning programme specifically associated with creating the right environment and culture to support self-managed teams within the organisation, to ensure the sustainability of such change

When considering these recommendations it should also be taken into account that although motivation is a strong contributor to performance there are other factors of opportunity and ability that need to be considered (Lin et al., 2013). These also play a part in influencing behaviour in relation to performance and should not be discounted in a concise change strategy.

7.4   Future research

This study has presented some exciting future research propositions. One of the key insights that could be derived initially, is from replicating the research to other organisations and industries using the same research design. It is critical that all organisations enhance flexibility to change towards technological and market transformations (Maimone & Sinclair, 2014). This research only sampled one banking organisation and as more organisations adopt an agile way of working to cope with this change (Appelbaum et al., 2012), comparison to other organisations would only contribute further to the academic understanding. The research only looked at self-determination theory in relation to one type of organisational change, namely self-managed teams and future studies could examine self-determination theory in relation to different change models.

This cross-sectional study only reflects a single point in time at the early stages in the adoption of self-managed teams. A qualitative, longitudinal study that looks at both before and after the intervention, as well as measures the change in performance and perceived intrinsic motivation would be useful. The conducting of in-depth interviews to get an understanding of whether the perceived fulfilment of autonomy, competence and relatedness, seen in this study, continues to be fulfilled as the teams become more embedded in the organisation, would be beneficial. A

consideration for this research could be to review organisations that have successfully implemented self-managed teams and those which have not, to provide a real world comparison to the approaches to change they applied.

A key focus of this research was the fulfilment of basic psychological needs of individuals and to reflect on the supporting environmental factors of autonomy-supportive leadership. A future study in the adoption of self-managed teams from a leadership perspective could provide additional insight on how to garner leadership support for adoption and increase the chances of successful organisational change. In the Agile methodology regarding self-managed teams, these leaders are known as product owners and would be part of the establishment of self-managed teams.

An alternative study could review the effects of self-managed teams towards fulfilling the basic psychological needs and their impact on employee retention and reward. The relationship between the fulfilment of autonomy, competence and relatedness, plus the desire for extrinsic motivators, such as reward and its effect on employee retention, should be tested. There could be a determination of whether, if it is a retention factor, it would be relational or transactional. As motivation is considered a fundamental component of any credible model of human performance (Cerasoli et al., 2014), it would be worth seeing whether this model could be integrated into any existing performance or reward models. Daniel Pink (2011) states in his book *Drive* that if you take money off the table, it is the intrinsic motivators that will drive motivation. It would be worth testing this within self-managed teams.

Lastly, this study only looked at those individuals who are in the process of early adoption of self-managed teams and not actively working in a self-managed team or a group of self-managed teams within a particular delivery. An avenue for consideration in future research would be how having more than one self-managed team deliver parts of a key deliverable. Furthermore, how that interaction impacts the perceived fulfilment of the needs of autonomy, competence and relatedness.

7.5   Summary

Start-ups are focused on disrupting banking business models (Arnold & Ahmed, 2014), while tech companies are entering the financial market (Williams-Grut, 2015). This highlights an ever-evolving market and the need for organisations, and especially the banking industry, to become flexible and adaptable to these changes. This research has demonstrated the benefits of self-managed teams and the ability

to create this flexibility within banking organisations. It contributes to the understanding of why these teams can be more productive and efficient than normal teams.

There has been more insight provided into the importance the perceived fulfilment of autonomy, competence and relatedness has to increase individual willingness to adopt, and how firms create a desire to be part of a self-managed team. Bearing these findings in mind, organisations can see the overall benefits of self-managed teams, such as increased productivity and efficiency, plus decreased time to market and more motivated people.

Although there is still a requirement for further research to understand all of the contributing factors to the performance of self-managed teams, this research has provided a unique insight into the effects of intrinsic motivators, specifically basic psychological needs, on that performance. Business and organisations can apply this understanding to the development of their adoption programmes for self-managed teams. The researcher will also look to apply these learning's to the organisation used in the study, to further the adoption of this way of working.

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Appendices

Appendix 1: The survey questionnaire

UNIVERSITY OF PRETORIA (GIBS)

Masters of Business Administration

Questionnaire

Are banking employees, in the early stages of organisational change to self-managing teams, motivated by basic psychological needs?

Researcher: James Knupfer

Supervisors: Dr Charlene Lew

Discipline: Organisational Behaviour

Application Field: Financial Industry

Institution: University of Pretoria

Thank you for participating in this study of motivation in organisational change conducted by Mr. J Knupfer.

The objective and aim of my Research:

The aim of this research will be to provide insight into the affect of autonomy, competence and relatedness on a banking employees motivation towards adopting a change of role into a self-managed team and determine whether none, one, two or all three of the basic psychological would have to be realised for individual autonomous motivation.

Significance of the study

The current rate of technological advancement and global competition predicts that there will be continuous change and that there is a need to adapt to this level of constant change. The contribution of this study will be in terms of an academic framework and business guidance.

Confidentiality:

The researcher adheres that all the information provided remains confidential and will only be used for the research purpose.

I have invited you to complete the questionnaire to assist me with my findings for the above outlined research topic.

Your participation in this study is voluntary and you may withdraw at any time without penalty. Confidentiality and anonymity is maintained and assured to you throughout the process.

If you have any further queries please contact the researcher as follows:

<u>Researcher:</u>

James Knupfer

Direct Contact: 079 492 9416

Email: james.knupfer@barclays.com or james.knupfer@hotmail.com

Thank you for your time and contribution.

Question	Strongly Agree	Agree	Partially Agree	Disagree	Strongly Agree
1. I feel motivated to adopt a more autonomous way of working					
2. I feel that forced adoption of a new way of working is the best way to implement change					
3. I feel that an autonmous way of working will give me freedom and choice in the things that I undertake					
4. I feel that I have to adopt the Agile way of working to be able to operate in Barclays					
5. I feel that working in a self-managed team will enable team members to work better together on a personal level					
6. I feel that I will be excluded from a group if I was part of a self-managed team					
7. I feel confident that working in a self-managed team that I will be able to do things better					
8. I feel that working in a self-managed team will not enable me to do things well					
9. I feel that self-managed teams would be beneficial to me and the organisation					
10. I feel that self-managed teams will not be successful as there is too much control in the organisation					
11. I feel that I will be able to voice the decisions I want in a self-managed team					
12. I feel that in a self managed team I would still be required to do many actions that I would not choose to do					
13. I would feel connected with my colleagues as part of a self-managed team					
14. I feel that people that are important to me in the organisation would still be cold and distant towards me in a self-managed team					
15. I feel capable of delivering in a self-managed team					
16. I feel that my performance would be dissapointing in self-managed team					
17. I feel that I will be given the autonomy I need to work as part of a self managed team					
18. I will participate in a self-managed team though I do not believe that it will work					
19. I feel that I would be comfortable to express myself through my choices in a self-managed team					
20. I feel I would be pressured to take on too many tasks in a self-managed team					
21. I would feel close and connencted with the people that are important to me in a self-managed team					

22. I would feel in a self-managed team that the colleagues in my team would dislike me					
23. I would feel confident that I would achieve my goals as part of a self-managed team					
24. I would feel insecure about my abilities in a self-managed team					
25. I feel that I have received sufficient communication and content on the new way of working					
26. I feel that I am being asked to particpate in a new way of working that I don't fully understand					
27. I feel that I would be able to do the things that interest me as part of a self-managed team					
28. I feel that my daily activities would still be a chain of obligations in self-managed team					
29. I feel that I would enjoy to spend time with people in a self-managed team					
30. I feel that the relationships I would have in a self-managed team would be superficial					
31. I feel that being in a self managed team I would be able to complete difficult tasks					
32. I feel that failure, due to my mistakes would be more prevelent in a self-managed team					
33. I feel positive about the new direction the organisation is taking with this new way of working					
34. I feel that I don't need to commit to this new way of working as there will eventually be another way of working					

Appendix 2: Approval letter from Barclays

BARCLAYS

Barclays Africa Group
Africa Technology
268 Republic Road, 2146
South Africa

Tel   +27 (0) 11 350 4000
Swift Address: ABSA ZA JJ
Barclaysafrica.com

Date: 2 July 2015

Researcher:	James Knupfer
Supervisor:	Dr Charlene Lew
Discipline:	Organisational Behaviour
Application Field:	Banking
Institution:	University of Pretoria

Re: The role of autonomy, competence and relatedness in self-managed team adoption by banking employees

We hereby confirm knowledge of the above named research and agree to the research being conducted at Barclays Africa Group Limited: Technology

I, Stephanie Viljoen, Human Resources: Executive Manager, Africa grant permission to James Knupfer to conduct questionnaire surveys at Barclays Africa Technology to complete his research study from the 3rd July to the 31st August 2015.

We wish you success in your research.

Yours faithfully

Signed at ___Jhb ____

Date ___06.10.2015___

Signature _____

Stephanie Viljoen
Human Resources: Executive Manager, Africa
Technology

Appendix 3: Ethical Clearance

Dear James Knupfer

Protocol Number: **Temp2015-01418**

Title: **The role of autonomy, competence and relatedness in self-manging team adoption by banking employees.**

Please be advised that your application for Ethical Clearance has been APPROVED.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

Kind Regards,

Adele Bekker

Appendix 4: Missing Value Analysis

Overall Summary of Missing Values

Complete Data
Incomplete Data

Variables	Cases	Values
0 0%	0 0%	0 0%
37 100%	299 100%	11,063 100%
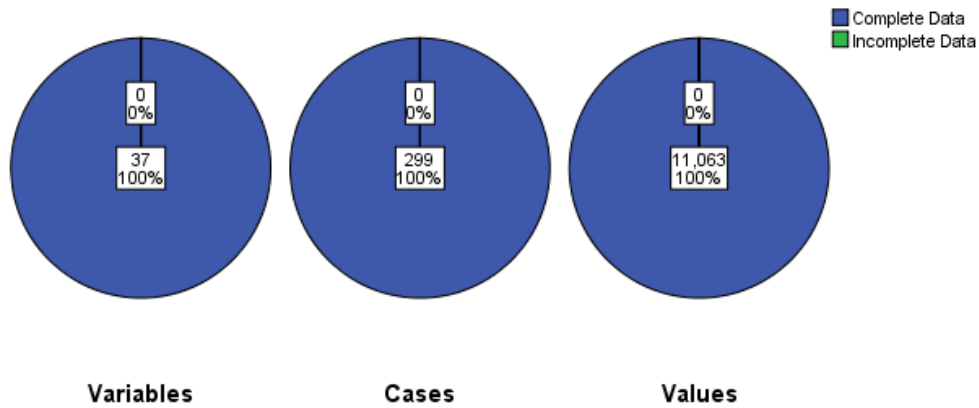
Appendix 5: Descriptive statistics

5.1 Confirmatory factor analysis

Question	Estimate
WA1	.630
WA9	.709
WA17	.584
WA25	.404
WA33	.723

Question	Estimate
FA2	.025
FA10	.374
FA18	.604
FA26	.469
FA34	.595

Question	Estimate
RS5	.548
RS13	.747
RS21	.680
RS29	.671

Question	Estimate
RF6	.510
RF14	.596
RF22	.623
RF30	.504

Question	Estimate
AS3	.425
AS11	.660
AS19	.740
AS27	.633

Question	Estimate
AF4	.059
AF12	.700
AF20	.466
AF28	.368

Question	Estimate
CS7	.662
CS15	.688
CS23	.841
CS31	.574

Question	Estimate
CF8	1.000
CF16	1.390
CF24	1.421
CF32	.935

5.2 Measures of central tendency and dispersion

	N	Range	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Gender_t	299	1	1.56	.498	.248	-.223	.141	-1.963	.281
WA9	299	4.00	1.8194	.76905	.591	.901	.141	1.304	.281
WA33	299	4.00	1.7492	.79467	.632	1.167	.141	1.990	.281
WA25	299	4.00	2.2742	.96153	.925	.681	.141	.188	.281
WA17	299	4.00	2.1271	.75789	.574	.622	.141	.940	.281
WA1	299	4.00	1.6421	.65720	.432	1.034	.141	2.395	.281
RS5	299	4.00	1.6689	.72866	.531	1.074	.141	1.564	.281
RS29	299	4.00	1.9197	.67574	.457	.558	.141	1.191	.281
RS21	299	4.00	2.1104	.77147	.595	.779	.141	1.389	.281
RS13	299	4.00	1.8896	.68873	.474	.953	.141	2.742	.281
RF6	299	4.00	2.2308	.92518	.856	1.010	.141	.868	.281
RF30	299	4.00	2.5184	1.08475	1.177	.604	.141	-.431	.281
RF22	299	4.00	1.8930	.79126	.626	1.175	.141	2.306	.281
RF14	299	4.00	2.1873	.86991	.757	.859	.141	.932	.281
FA34	299	4.00	1.9030	.89777	.806	1.285	.141	2.093	.281
FA26	299	4.00	2.2140	.94886	.900	.747	.141	.205	.281
FA2	299	4.00	2.9599	1.15787	1.341	.079	.141	-.847	.281
FA18	299	4.00	2.1505	.93806	.880	.825	.141	.436	.281
FA10	299	4.00	2.6154	1.06306	1.130	.412	.141	-.422	.281
Ethnicity_t	299	4.00	3.4649	1.68728	2.847	-.443	.141	-1.485	.281
CS7	299	4.00	1.8963	.75036	.563	.844	.141	1.246	.281
CS31	299	4.00	2.0301	.82886	.687	1.154	.141	2.457	.281
CS23	299	4.00	1.8194	.69090	.477	.930	.141	2.521	.281
CS15	299	4.00	1.6923	.69440	.482	1.285	.141	3.927	.281
CF8	299	4.00	2.0769	1.00206	1.004	1.356	.141	1.731	.281
CF32	299	4.00	2.7124	1.03830	1.078	.200	.141	-.495	.281
CF24	299	4.00	1.8261	.80050	.641	1.114	.141	1.729	.281
CF16	299	4.00	1.7425	.69314	.480	1.123	.141	3.063	.281
AS3	299	4.00	1.9565	.81190	.659	1.178	.141	2.448	.281
AS27	299	4.00	2.0602	.80875	.654	.771	.141	.865	.281
AS19	299	4.00	1.8796	.68460	.469	.600	.141	1.135	.281
AS11	299	4.00	1.9732	.78532	.617	1.052	.141	2.437	.281
Age_t	299	2.00	2.3746	.51828	.269	.154	.141	-1.169	.281
AF4	299	4.00	3.9967	.86892	.755	-.890	.141	.830	.281
AF28	299	4.00	3.0769	1.04790	1.098	.039	.141	-.744	.281
AF20	299	4.00	2.3110	.88627	.785	.745	.141	.728	.281
AF12	299	4.00	2.9030	.98680	.974	.069	.141	-.618	.281

5.3 Frequency disruption

Question 1

Question 2

Question 3

I feel that an autonmous way of working will give me freedom and choice in the things that I undertake

Question 4

I feel that I have to adopt the Agile way of working to be able to operate in Barclays

Question 5

I feel that working in a self-managed team will enable team members to work better together on a personal level

Question 6

I feel that I will be excluded from a group if I was part of a self-managed team

Question 7

I feel confident that working in a self-managed team
that I will be able to do things better

(Bar chart: Agree ≈165, Disagree ≈10, Partially Agree ≈34, Strongly Agree ≈88, Strongly Disagree ≈1; y-axis 0 to 180)

Question 8

I feel that working in a self-managed team will not
enable me to do things well

(Bar chart: Agree ≈19, Disagree ≈167, Partially Agree ≈21, Strongly Agree ≈14, Strongly Disagree ≈79; y-axis 0 to 180)

Question 9

I feel that self-managed teams would be beneficial the organisation and me

Question 10

I feel that self-managed teams will not be successful as there is too much control in the organisation

Question 11

I feel that I will be able to voice the decisions I want in a self-managed team

Question 12

I feel that in a self managed team I would still be required to do many actions that I would not choose to do

Question 13

I would feel connected with my colleagues as part of a self-managed team

Question 14

I feel that people that are important to me in the organisation would still be cold and distant towards me in a self-managed team

115

Question 15

Question 16

Question 17

I feel that I will be given the autonomy I need to work as part of a self managed team

Question 18

I will participate in a self-managed team though I do not believe that it will work
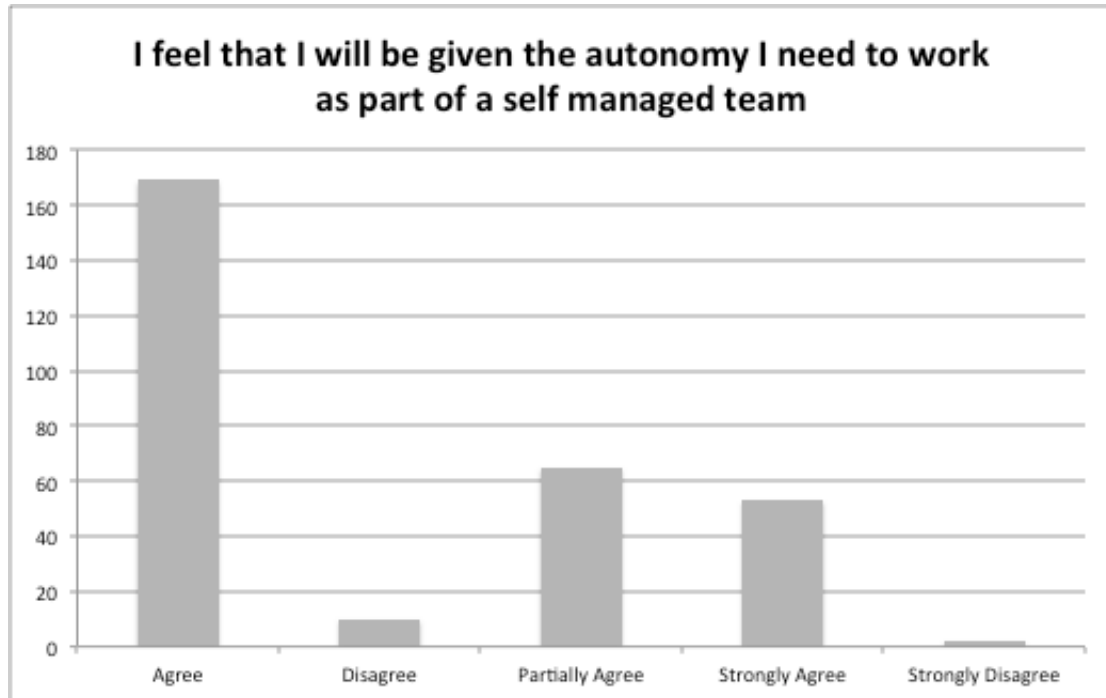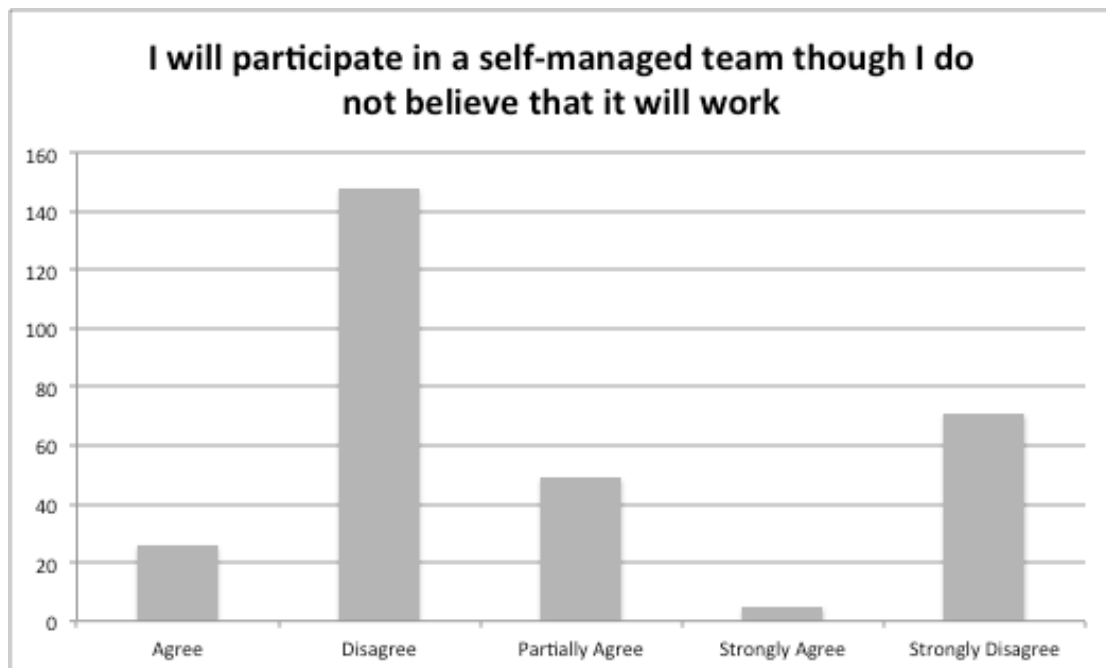
Question 19

Question 20

Question 21

I would feel close and connected with the people that are important to me in a self-managed team

(Bar chart. Y-axis from 0 to 200 in increments of 20. Categories on X-axis:)
- Agree: ~172
- Disagree: ~10
- Partially Agree: ~59
- Strongly Agree: ~55
- Strongly Disagree: ~3

Question 22

I would feel in a self-managed team that the colleagues in my team would dislike me

(Bar chart. Y-axis from 0 to 180 in increments of 20. Categories on X-axis:)
- Agree: ~12
- Disagree: ~169
- Partially Agree: ~25
- Strongly Agree: ~3
- Strongly Disagree: ~90

Question 23

I would feel confident that I would achieve my goals as part of a self-managed team

Question 24

I would feel insecure about my abilities in a self-managed team

Question 25

I feel that I have received sufficient communication and content on the new way of working

Question 26

I feel that I am being asked to particpate in a new way of working that I don't fully understand

Question 27

I feel that I would be able to do the things that interest me as part of a self-managed team

Question 28

I feel that my daily activities would still be a chain of obligations in self-managed team

Question 29

Question 30

Question 31

Question 32

Question 33

Question 34
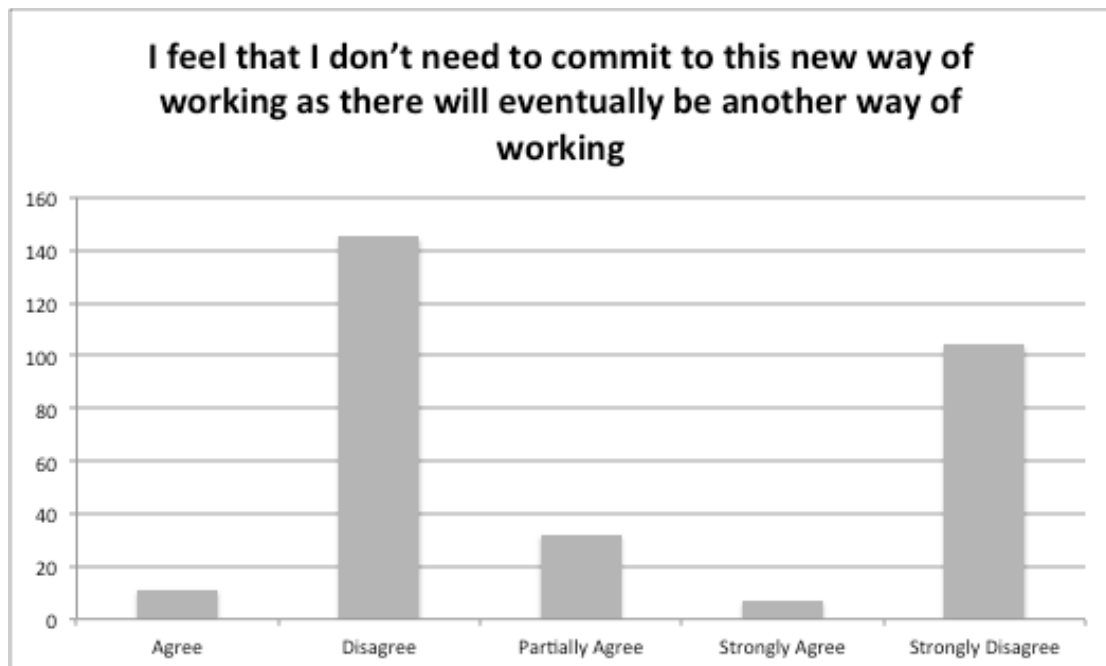
5.4 Correlation testing

		AF4	AF12	AF20	AF28	CF8	CF16	CF24	CF32	FA2	FA10
AF4	Pearson Correlation	1	.066	-.029	.140*	-.015	-.068	-.059	.040	.213**	.031
	Sig. (2-tailed)		.254	.616	.015	.795	.239	.311	.492	.000	.590
	N	299	299	299	299	299	299	299	299	299	299
AF12	Pearson Correlation	.066	1	.326**	.257**	.116*	.145*	.051	.225**	.014	.230**
	Sig. (2-tailed)	.254		.000	.000	.045	.012	.381	.000	.807	.000
	N	299	299	299	299	299	299	299	299	299	299
AF20	Pearson Correlation	-.029	.326**	1	.173**	.245**	.289**	.308**	.167**	.019	.313**
	Sig. (2-tailed)	.616	.000		.003	.000	.000	.000	.004	.747	.000
	N	299	299	299	299	299	299	299	299	299	299
AF28	Pearson Correlation	.140*	.257**	.173**	1	.151**	.097	.140*	.239**	.130*	.030
	Sig. (2-tailed)	.015	.000	.003		.009	.095	.015	.000	.025	.609
	N	299	299	299	299	299	299	299	299	299	299
CF8	Pearson Correlation	-.015	.116*	.245**	.151**	1	.285**	.222**	.196**	.034	.286**
	Sig. (2-tailed)	.795	.045	.000	.009		.000	.000	.001	.553	.000
	N	299	299	299	299	299	299	299	299	299	299
CF16	Pearson Correlation	-.068	.145*	.289**	.097	.285**	1	.506**	.232**	.083	.211**
	Sig. (2-tailed)	.239	.012	.000	.095	.000		.000	.000	.151	.000
	N	299	299	299	299	299	299	299	299	299	299
CF24	Pearson Correlation	-.059	.051	.308**	.140*	.222**	.506**	1	.230**	.076	.241**
	Sig. (2-tailed)	.311	.381	.000	.015	.000	.000		.000	.192	.000
	N	299	299	299	299	299	299	299	299	299	299
CF32	Pearson Correlation	.040	.225**	.167**	.239**	.196**	.232**	.230**	1	.127*	.127*
	Sig. (2-tailed)	.492	.000	.004	.000	.001	.000	.000		.028	.028
	N	299	299	299	299	299	299	299	299	299	299
FA2	Pearson Correlation	.213**	.014	.019	.130*	.034	.083	.076	.127*	1	.023
	Sig. (2-tailed)	.000	.807	.747	.025	.553	.151	.192	.028		.694
	N	299	299	299	299	299	299	299	299	299	299
FA10	Pearson Correlation	.031	.230**	.313**	.030	.286**	.211**	.241**	.127*	.023	1
	Sig. (2-tailed)	.590	.000	.000	.609	.000	.000	.000	.028	.694	
	N	299	299	299	299	299	299	299	299	299	299
FA18	Pearson Correlation	-.061	.241**	.343**	.121*	.305**	.406**	.317**	.113*	.027	.230**
	Sig. (2-tailed)	.292	.000	.000	.036	.000	.000	.000	.050	.639	.000
	N	299	299	299	299	299	299	299	299	299	299
FA26	Pearson Correlation	-.019	.173**	.375**	.105	.208**	.416**	.429**	.144*	.136*	.205**
	Sig. (2-tailed)	.737	.003	.000	.070	.000	.000	.000	.012	.019	.000
	N	299	299	299	299	299	299	299	299	299	299
FA34	Pearson Correlation	-.052	.167**	.181**	.076	.266**	.391**	.364**	.197**	-.004	.200**
	Sig. (2-tailed)	.370	.004	.002	.192	.000	.000	.000	.001	.948	.001
	N	299	299	299	299	299	299	299	299	299	299

		FA18	FA26	FA34	RF6	RF14	RF22	RF30	AS3	AS11	AS19
AF4	Pearson Correlation	-.061	-.019	-.052	.093	-.039	-.083	.109	-.210**	-.044	-.119*
	Sig. (2-tailed)	.292	.737	.370	.109	.500	.150	.061	.000	.444	.040
	N	299	299	299	299	299	299	299	299	299	299
AF12	Pearson Correlation	.241**	.173**	.167**	.113	.350**	.146*	.100	.146*	.183**	.127*
	Sig. (2-tailed)	.000	.003	.004	.051	.000	.012	.083	.012	.001	.028
	N	299	299	299	299	299	299	299	299	299	299
AF20	Pearson Correlation	.343**	.375**	.181**	.199**	.325**	.277**	.223**	.163**	.296**	.250**
	Sig. (2-tailed)	.000	.000	.002	.001	.000	.000	.000	.005	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
AF28	Pearson Correlation	.121*	.105	.076	.175**	.117*	.168**	.163**	-.043	.007	-.095
	Sig. (2-tailed)	.036	.070	.192	.002	.044	.004	.005	.455	.910	.102
	N	299	299	299	299	299	299	299	299	299	299
CF8	Pearson Correlation	.305**	.208**	.266**	.343**	.349**	.387**	.331**	.066	.276**	.165**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.255	.000	.004
	N	299	299	299	299	299	299	299	299	299	299
CF16	Pearson Correlation	.406**	.416**	.391**	.266**	.342**	.415**	.370**	.171**	.302**	.345**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.003	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
CF24	Pearson Correlation	.317**	.429**	.364**	.181**	.269**	.384**	.193**	.174**	.254**	.311**
	Sig. (2-tailed)	.000	.000	.000	.002	.000	.000	.001	.003	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
CF32	Pearson Correlation	.113*	.144*	.197**	.195**	.242**	.342**	.189**	.097	.089	.145*
	Sig. (2-tailed)	.050	.012	.001	.001	.000	.000	.001	.096	.123	.012
	N	299	299	299	299	299	299	299	299	299	299
FA2	Pearson Correlation	.027	.136*	-.004	.112	.034	.072	.222**	-.045	-.101	-.019
	Sig. (2-tailed)	.639	.019	.948	.053	.557	.213	.000	.441	.082	.746
	N	299	299	299	299	299	299	299	299	299	299
FA10	Pearson Correlation	.230**	.205**	.200**	.261**	.336**	.254**	.150**	.054	.293**	.264**
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.000	.009	.348	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
FA18	Pearson Correlation	1	.269**	.368**	.242**	.344**	.293**	.263**	.176**	.265**	.305**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.002	.000	.000
	N		299	299	299	299	299	299	299	299	299
FA26	Pearson Correlation	.269**	1	.281**	.265**	.224**	.227**	.159**	.121*	.314**	.267**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.006	.036	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
FA34	Pearson Correlation	.368**	.281**	1	.213**	.320**	.325**	.255**	.224**	.315**	.319**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299

		AS27	RS5	RS13	RS21	RS29	WA1	WA9	WA17	WA25	WA33
AF4	Pearson Correlation	-.157**	-.198**	-.152**	-.155**	-.183**	-.190**	-.222**	-.071	-.079	-.196**
	Sig. (2-tailed)	.006	.001	.008	.007	.001	.001	.000	.223	.172	.001
	N	299	299	299	299	299	299	299	299	299	299
AF12	Pearson Correlation	.163**	.095	.177**	.076	.104	.153**	.158**	.120*	.109	.136*
	Sig. (2-tailed)	.005	.100	.002	.191	.072	.008	.006	.039	.059	.019
	N	299	299	299	299	299	299	299	299	299	299
AF20	Pearson Correlation	.306**	.248**	.392**	.264**	.255**	.198**	.319**	.246**	.096	.311**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.001	.000	.000	.096	.000
	N	299	299	299	299	299	299	299	299	299	299
AF28	Pearson Correlation	.078	.025	.026	.027	.013	.025	.046	.064	.079	.072
	Sig. (2-tailed)	.180	.671	.657	.644	.816	.661	.424	.272	.174	.217
	N	299	299	299	299	299	299	299	299	299	299
CF8	Pearson Correlation	.210**	.173**	.168**	.236**	.232**	.154**	.249**	.226**	.103	.273**
	Sig. (2-tailed)	.000	.003	.004	.000	.000	.008	.000	.000	.074	.000
	N	299	299	299	299	299	299	299	299	299	299
CF16	Pearson Correlation	.249**	.209**	.257**	.267**	.343**	.268**	.378**	.261**	.101	.345**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.080	.000
	N	299	299	299	299	299	299	299	299	299	299
CF24	Pearson Correlation	.291**	.189**	.221**	.249**	.322**	.270**	.319**	.169**	.141*	.322**
	Sig. (2-tailed)	.000	.001	.000	.000	.000	.000	.000	.003	.015	.000
	N	299	299	299	299	299	299	299	299	299	299
CF32	Pearson Correlation	.205**	.100	.120*	.149*	.130*	.139*	.120*	.132*	.096	.124*
	Sig. (2-tailed)	.000	.085	.039	.010	.025	.016	.039	.023	.097	.032
	N	299	299	299	299	299	299	299	299	299	299
FA2	Pearson Correlation	.003	-.139*	-.018	.009	-.017	-.063	.014	.090	-.074	-.088
	Sig. (2-tailed)	.964	.016	.754	.880	.770	.277	.804	.121	.199	.131
	N	299	299	299	299	299	299	299	299	299	299
FA10	Pearson Correlation	.265**	.169**	.217**	.187**	.289**	.201**	.272**	.227**	.120*	.299**
	Sig. (2-tailed)	.000	.003	.000	.001	.000	.000	.000	.000	.038	.000
	N	299	299	299	299	299	299	299	299	299	299
FA18	Pearson Correlation	.231**	.206**	.265**	.223**	.289**	.262**	.331**	.233**	.092	.289**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.113	.000
	N	299	299	299	299	299	299	299	299	299	299
FA26	Pearson Correlation	.399**	.244**	.247**	.234**	.283**	.247**	.334**	.284**	.403**	.379**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
FA34	Pearson Correlation	.211**	.166**	.238**	.108	.236**	.311**	.237**	.265**	.190**	.408**
	Sig. (2-tailed)	.000	.004	.000	.063	.000	.000	.000	.000	.001	.000
	N	299	299	299	299	299	299	299	299	299	299

		CS7	CS15	CS23	CS31
AF4	Pearson Correlation	-.212**	-.219**	-.208**	-.177**
	Sig. (2-tailed)	.000	.000	.000	.002
	N	299	299	299	299
AF12	Pearson Correlation	.109	.133*	.146*	.143*
	Sig. (2-tailed)	.060	.022	.011	.013
	N	299	299	299	299
AF20	Pearson Correlation	.286**	.254**	.322**	.188**
	Sig. (2-tailed)	.000	.000	.000	.001
	N	299	299	299	299
AF28	Pearson Correlation	-.007	.010	.056	.175**
	Sig. (2-tailed)	.906	.869	.332	.002
	N	299	299	299	299
CF8	Pearson Correlation	.261**	.251**	.306**	.292**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
CF16	Pearson Correlation	.342**	.469**	.386**	.160**
	Sig. (2-tailed)	.000	.000	.000	.006
	N	299	299	299	299
CF24	Pearson Correlation	.299**	.350**	.343**	.175**
	Sig. (2-tailed)	.000	.000	.000	.002
	N	299	299	299	299
CF32	Pearson Correlation	.121*	.226**	.166**	.096
	Sig. (2-tailed)	.037	.000	.004	.098
	N	299	299	299	299
FA2	Pearson Correlation	-.001	.026	-.034	-.086
	Sig. (2-tailed)	.987	.650	.555	.137
	N	299	299	299	299
FA10	Pearson Correlation	.249**	.207**	.325**	.257**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
FA18	Pearson Correlation	.294**	.344**	.322**	.197**
	Sig. (2-tailed)	.000	.000	.000	.001
	N	299	299	299	299
FA26	Pearson Correlation	.333**	.304**	.392**	.218**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
FA34	Pearson Correlation	.289**	.318**	.329**	.198**
	Sig. (2-tailed)	.000	.000	.000	.001
	N	299	299	299	299

		AF4	AF12	AF20	AF28	CF8	CF16	CF24	CF32	FA2	FA10
RF6	Pearson Correlation	.093	.113	.199**	.175**	.343**	.266**	.181**	.195**	.112	.261**
	Sig. (2-tailed)	.109	.051	.001	.002	.000	.000	.002	.001	.053	.000
	N	299	299	299	299	299	299	299	299	299	299
RF14	Pearson Correlation	-.039	.350**	.325**	.117*	.349**	.342**	.269**	.242**	.034	.336**
	Sig. (2-tailed)	.500	.000	.000	.044	.000	.000	.000	.000	.557	.000
	N	299	299	299	299	299	299	299	299	299	299
RF22	Pearson Correlation	-.083	.146*	.277**	.168**	.387**	.415**	.384**	.342**	.072	.254**
	Sig. (2-tailed)	.150	.012	.000	.004	.000	.000	.000	.000	.213	.000
	N	299	299	299	299	299	299	299	299	299	299
RF30	Pearson Correlation	.109	.100	.223**	.163**	.331**	.370**	.193**	.189**	.222**	.150**
	Sig. (2-tailed)	.061	.083	.000	.005	.000	.000	.001	.001	.000	.009
	N	299	299	299	299	299	299	299	299	299	299
AS3	Pearson Correlation	-.210**	.146*	.163**	-.043	.066	.171**	.174**	.097	-.045	.054
	Sig. (2-tailed)	.000	.012	.005	.455	.255	.003	.003	.096	.441	.348
	N	299	299	299	299	299	299	299	299	299	299
AS11	Pearson Correlation	-.044	.183**	.296**	.007	.276**	.302**	.254**	.089	-.101	.293**
	Sig. (2-tailed)	.444	.001	.000	.910	.000	.000	.000	.123	.082	.000
	N	299	299	299	299	299	299	299	299	299	299
AS19	Pearson Correlation	-.119*	.127*	.250**	-.095	.165**	.345**	.311**	.145*	-.019	.264**
	Sig. (2-tailed)	.040	.028	.000	.102	.004	.000	.000	.012	.746	.000
	N	299	299	299	299	299	299	299	299	299	299
AS27	Pearson Correlation	-.157**	.163**	.306**	.078	.210**	.249**	.291**	.205**	.003	.265**
	Sig. (2-tailed)	.006	.005	.000	.180	.000	.000	.000	.000	.964	.000
	N	299	299	299	299	299	299	299	299	299	299
RS5	Pearson Correlation	-.198**	.095	.248**	.025	.173**	.209**	.189**	.100	-.139*	.169**
	Sig. (2-tailed)	.001	.100	.000	.671	.003	.000	.001	.085	.016	.003
	N	299	299	299	299	299	299	299	299	299	299
RS13	Pearson Correlation	-.152**	.177**	.392**	.026	.168**	.257**	.221**	.120*	-.018	.217**
	Sig. (2-tailed)	.008	.002	.000	.657	.004	.000	.000	.039	.754	.000
	N	299	299	299	299	299	299	299	299	299	299
RS21	Pearson Correlation	-.155**	.076	.264**	.027	.236**	.267**	.249**	.149*	.009	.187**
	Sig. (2-tailed)	.007	.191	.000	.644	.000	.000	.000	.010	.880	.001
	N	299	299	299	299	299	299	299	299	299	299
RS29	Pearson Correlation	-.183**	.104	.255**	.013	.232**	.343**	.322**	.130*	-.017	.289**
	Sig. (2-tailed)	.001	.072	.000	.816	.000	.000	.000	.025	.770	.000
	N	299	299	299	299	299	299	299	299	299	299
WA1	Pearson Correlation	-.190**	.153**	.198**	.025	.154**	.268**	.270**	.139*	-.063	.201**
	Sig. (2-tailed)	.001	.008	.001	.661	.008	.000	.000	.016	.277	.000
	N	299	299	299	299	299	299	299	299	299	299
WA9	Pearson Correlation	-.222**	.158**	.319**	.046	.249**	.378**	.319**	.120*	.014	.272**
	Sig. (2-tailed)	.000	.006	.000	.424	.000	.000	.000	.039	.804	.000
	N	299	299	299	299	299	299	299	299	299	299

		FA18	FA26	FA34	RF6	RF14	RF22	RF30	AS3	AS11	AS19
RF6	Pearson Correlation	.242**	.265**	.213**	1	.305**	.332**	.235**	.116*	.336**	.288**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.045	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
RF14	Pearson Correlation	.344**	.224**	.320**	.305**	1	.361**	.316**	.183**	.356**	.331**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.002	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
RF22	Pearson Correlation	.293**	.227**	.325**	.332**	.361**	1	.315**	.149**	.314**	.193**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.010	.000	.001
	N	299	299	299	299	299	299	299	299	299	299
RF30	Pearson Correlation	.263**	.159**	.255**	.235**	.316**	.315**	1	.083	.201**	.166**
	Sig. (2-tailed)	.000	.006	.000	.000	.000	.000		.153	.000	.004
	N	299	299	299	299	299	299	299	299	299	299
AS3	Pearson Correlation	.176**	.121*	.224**	.116*	.183**	.149**	.083	1	.246**	.286**
	Sig. (2-tailed)	.002	.036	.000	.045	.002	.010	.153		.000	.000
	N	299	299	299	299	299	299	299	299	299	299
AS11	Pearson Correlation	.265**	.314**	.315**	.336**	.356**	.314**	.201**	.246**	1	.512**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000
	N	299	299	299	299	299	299	299	299	299	299
AS19	Pearson Correlation	.305**	.267**	.319**	.288**	.331**	.193**	.166**	.286**	.512**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.001	.004	.000	.000	
	N	299	299	299	299	299	299	299	299	299	299
AS27	Pearson Correlation	.231**	.399**	.211**	.170**	.246**	.278**	.179**	.352**	.399**	.456**
	Sig. (2-tailed)	.000	.000	.000	.003	.000	.000	.002	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
RS5	Pearson Correlation	.206**	.244**	.166**	.168**	.262**	.183**	-.003	.276**	.424**	.485**
	Sig. (2-tailed)	.000	.000	.004	.003	.000	.002	.960	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
RS13	Pearson Correlation	.265**	.247**	.238**	.209**	.326**	.200**	.171**	.225**	.503**	.527**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.001	.003	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
RS21	Pearson Correlation	.223**	.234**	.108	.124*	.264**	.195**	.184**	.222**	.332**	.476**
	Sig. (2-tailed)	.000	.000	.063	.032	.000	.001	.001	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
RS29	Pearson Correlation	.289**	.283**	.236**	.228**	.300**	.216**	.190**	.324**	.356**	.523**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.001	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
WA1	Pearson Correlation	.262**	.247**	.311**	.175**	.282**	.204**	.092	.442**	.326**	.396**
	Sig. (2-tailed)	.000	.000	.000	.002	.000	.000	.114	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
WA9	Pearson Correlation	.331**	.334**	.237**	.224**	.327**	.282**	.141*	.342**	.486**	.475**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.015	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299

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		AS27	RS5	RS13	RS21	RS29	WA1	WA9	WA17	WA25	WA33
RF6	Pearson Correlation	.170**	.168**	.209**	.124*	.228**	.175**	.224**	.240**	.053	.184**
	Sig. (2-tailed)	.003	.003	.000	.032	.000	.002	.000	.000	.360	.001
	N	299	299	299	299	299	299	299	299	299	299
RF14	Pearson Correlation	.246**	.262**	.326**	.264**	.300**	.282**	.327**	.234**	.211**	.277**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
RF22	Pearson Correlation	.278**	.183**	.200**	.195**	.216**	.204**	.282**	.207**	.074	.256**
	Sig. (2-tailed)	.000	.002	.001	.001	.000	.000	.000	.000	.202	.000
	N	299	299	299	299	299	299	299	299	299	299
RF30	Pearson Correlation	.179**	-.003	.171**	.184**	.190**	.092	.141*	.254**	-.008	.147*
	Sig. (2-tailed)	.002	.960	.003	.001	.001	.114	.015	.000	.889	.011
	N	299	299	299	299	299	299	299	299	299	299
AS3	Pearson Correlation	.352**	.276**	.225**	.222**	.324**	.442**	.342**	.363**	.123*	.342**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.034	.000
	N	299	299	299	299	299	299	299	299	299	299
AS11	Pearson Correlation	.399**	.424**	.503**	.332**	.356**	.326**	.486**	.389**	.259**	.392**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
AS19	Pearson Correlation	.456**	.485**	.527**	.476**	.523**	.396**	.475**	.508**	.188**	.512**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000
	N	299	299	299	299	299	299	299	299	299	299
AS27	Pearson Correlation	1	.290**	.434**	.436**	.543**	.388**	.498**	.436**	.328**	.483**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
RS5	Pearson Correlation	.290**	1	.475**	.310**	.341**	.396**	.450**	.241**	.226**	.395**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
RS13	Pearson Correlation	.434**	.475**	1	.497**	.471**	.394**	.526**	.348**	.198**	.440**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.001	.000
	N	299	299	299	299	299	299	299	299	299	299
RS21	Pearson Correlation	.436**	.310**	.497**	1	.513**	.376**	.475**	.412**	.190**	.368**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.001	.000
	N	299	299	299	299	299	299	299	299	299	299
RS29	Pearson Correlation	.543**	.341**	.471**	.513**	1	.388**	.553**	.433**	.266**	.544**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
WA1	Pearson Correlation	.388**	.396**	.394**	.376**	.388**	1	.443**	.348**	.278**	.464**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
WA9	Pearson Correlation	.498**	.450**	.526**	.475**	.553**	.443**	1	.471**	.221**	.502**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299

		CS7	CS15	CS23	CS31
RF6	Pearson Correlation	.213**	.283**	.207**	.170**
	Sig. (2-tailed)	.000	.000	.000	.003
	N	299	299	299	299
RF14	Pearson Correlation	.230**	.323**	.364**	.243**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
RF22	Pearson Correlation	.213**	.306**	.321**	.251**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
RF30	Pearson Correlation	.178**	.204**	.224**	.098
	Sig. (2-tailed)	.002	.000	.000	.090
	N	299	299	299	299
AS3	Pearson Correlation	.323**	.375**	.363**	.261**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
AS11	Pearson Correlation	.405**	.409**	.418**	.341**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
AS19	Pearson Correlation	.472**	.543**	.529**	.332**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
AS27	Pearson Correlation	.464**	.380**	.590**	.368**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
RS5	Pearson Correlation	.471**	.368**	.347**	.233**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
RS13	Pearson Correlation	.419**	.448**	.529**	.306**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
RS21	Pearson Correlation	.373**	.396**	.440**	.320**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
RS29	Pearson Correlation	.566**	.562**	.652**	.442**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
WA1	Pearson Correlation	.401**	.479**	.441**	.254**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
WA9	Pearson Correlation	.654**	.543**	.595**	.398**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299

		AF4	AF12	AF20	AF28	CF8	CF16	CF24	CF32	FA2	FA10
WA17	Pearson Correlation	-.071	.120*	.246**	.064	.226**	.261**	.169**	.132*	.090	.227**
	Sig. (2-tailed)	.223	.039	.000	.272	.000	.000	.003	.023	.121	.000
	N	299	299	299	299	299	299	299	299	299	299
WA25	Pearson Correlation	-.079	.109	.096	.079	.103	.101	.141*	.096	-.074	.120*
	Sig. (2-tailed)	.172	.059	.096	.174	.074	.080	.015	.097	.199	.038
	N	299	299	299	299	299	299	299	299	299	299
WA33	Pearson Correlation	-.196**	.136*	.311**	.072	.273**	.345**	.322**	.124*	-.088	.299**
	Sig. (2-tailed)	.001	.019	.000	.217	.000	.000	.000	.032	.131	.000
	N	299	299	299	299	299	299	299	299	299	299
CS7	Pearson Correlation	-.212**	.109	.286**	-.007	.261**	.342**	.299**	.121*	-.001	.249**
	Sig. (2-tailed)	.000	.060	.000	.906	.000	.000	.000	.037	.987	.000
	N	299	299	299	299	299	299	299	299	299	299
CS15	Pearson Correlation	-.219**	.133*	.254**	.010	.251**	.469**	.350**	.226**	.026	.207**
	Sig. (2-tailed)	.000	.022	.000	.869	.000	.000	.000	.000	.650	.000
	N	299	299	299	299	299	299	299	299	299	299
CS23	Pearson Correlation	-.208**	.146*	.322**	.056	.306**	.386**	.343**	.166**	-.034	.325**
	Sig. (2-tailed)	.000	.011	.000	.332	.000	.000	.000	.004	.555	.000
	N	299	299	299	299	299	299	299	299	299	299
CS31	Pearson Correlation	-.177**	.143*	.188**	.175**	.292**	.160**	.175**	.096	-.086	.257**
	Sig. (2-tailed)	.002	.013	.001	.002	.000	.006	.002	.098	.137	.000
	N	299	299	299	299	299	299	299	299	299	299

		FA18	FA26	FA34	RF6	RF14	RF22	RF30	AS3	AS11	AS19
WA17	Pearson Correlation	.233**	.284**	.265**	.240**	.234**	.207**	.254**	.363**	.389**	.508**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
WA25	Pearson Correlation	.092	.403**	.190**	.053	.211**	.074	-.008	.123*	.259**	.188**
	Sig. (2-tailed)	.113	.000	.001	.360	.000	.202	.889	.034	.000	.001
	N	299	299	299	299	299	299	299	299	299	299
WA33	Pearson Correlation	.289**	.379**	.408**	.184**	.277**	.256**	.147*	.342**	.392**	.512**
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.000	.011	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
CS7	Pearson Correlation	.294**	.333**	.289**	.213**	.230**	.213**	.178**	.323**	.405**	.472**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.002	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
CS15	Pearson Correlation	.344**	.304**	.318**	.283**	.323**	.306**	.204**	.375**	.409**	.543**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
CS23	Pearson Correlation	.322**	.392**	.329**	.207**	.364**	.321**	.224**	.363**	.418**	.529**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
CS31	Pearson Correlation	.197**	.218**	.198**	.170**	.243**	.251**	.098	.261**	.341**	.332**
	Sig. (2-tailed)	.001	.000	.001	.003	.000	.000	.090	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299

		AS27	RS5	RS13	RS21	RS29	WA1	WA9	WA17	WA25	WA33
WA17	Pearson Correlation	.436**	.241**	.348**	.412**	.433**	.348**	.471**	1	.201**	.393**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000
	N	299	299	299	299	299	299	299	299	299	299
WA25	Pearson Correlation	.328**	.226**	.198**	.190**	.266**	.278**	.221**	.201**	1	.358**
	Sig. (2-tailed)	.000	.000	.001	.001	.000	.000	.000	.000		.000
	N	299	299	299	299	299	299	299	299	299	299
WA33	Pearson Correlation	.483**	.395**	.440**	.368**	.544**	.464**	.502**	.393**	.358**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	299	299	299	299	299	299	299	299	299	299
CS7	Pearson Correlation	.464**	.471**	.419**	.373**	.566**	.401**	.654**	.442**	.202**	.496**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
CS15	Pearson Correlation	.380**	.368**	.448**	.396**	.562**	.479**	.543**	.464**	.162**	.583**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.005	.000
	N	299	299	299	299	299	299	299	299	299	299
CS23	Pearson Correlation	.590**	.347**	.529**	.440**	.652**	.441**	.595**	.473**	.337**	.651**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299
CS31	Pearson Correlation	.368**	.233**	.306**	.320**	.442**	.254**	.398**	.330**	.268**	.460**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	299	299	299	299	299	299	299	299	299	299

		CS7	CS15	CS23	CS31
WA17	Pearson Correlation	.442**	.464**	.473**	.330**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
WA25	Pearson Correlation	.202**	.162**	.337**	.268**
	Sig. (2-tailed)	.000	.005	.000	.000
	N	299	299	299	299
WA33	Pearson Correlation	.496**	.583**	.651**	.460**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	299	299	299	299
CS7	Pearson Correlation	1	.486**	.553**	.345**
	Sig. (2-tailed)		.000	.000	.000
	N	299	299	299	299
CS15	Pearson Correlation	.486**	1	.569**	.383**
	Sig. (2-tailed)	.000		.000	.000
	N	299	299	299	299
CS23	Pearson Correlation	.553**	.569**	1	.502**
	Sig. (2-tailed)	.000	.000		.000
	N	299	299	299	299
CS31	Pearson Correlation	.345**	.383**	.502**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	299	299	299	299

Appendix 6: Inferential statistics

6.1 Simple effects test

Source	Type IV Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	138.566[a]	130	1.066	4.752	.000
Intercept	12.221[b]	1	12.221	54.487	.000
AF4	1.678	4	.419	1.870	.118
AF12	.248	4	.062	.276	.893
AF20	.360	4	.090	.401	.808
AF28	.997	4	.249	1.112	.353
CF8	3.093	4	.773	3.447	.010
CF16	2.300	4	.575	2.563	.040
CF24	.914	4	.228	1.018	.399
CF32	.420	4	.105	.468	.759
FA2	1.663	4	.416	1.853	.121
FA10	.897	4	.224	1.000	.409
FA18	.367	4	.092	.409	.802
FA26	.724	4	.181	.807	.522
FA34	2.608	4	.652	2.907	.023
RF6	.975	4	.244	1.087	.365
RF14	1.443	4	.361	1.609	.174
RF22	.528	4	.132	.589	.671
RF30	1.001	4	.250	1.116	.351
AS3	.743	4	.186	.829	.509
AS11	1.913	4	.478	2.132	.079
AS19	.258	3	.086	.383	.766
AS27	.398	3	.133	.591	.621
RS5	.553	3	.184	.822	.484
RS13	.751	3	.250	1.116	.344
RS21	2.647	4	.662	2.950	.022
RS29	.922	3	.307	1.370	.254
WA1	.358	3	.119	.532	.661
WA17	.908	4	.227	1.012	.403
WA25	.586	4	.147	.653	.625
WA33	.693	3	.231	1.030	.381
Age_t	.159	2	.080	.355	.702
CS7	6.009	4	1.502	6.698	.000
CS15	.387	3	.129	.576	.632
CS23	.630	3	.210	.937	.424
CS31	.323	4	.081	.360	.836
Error	37.681	168	.224		
Total	1166.000	299			
Corrected Total	176.247	298			

6.2 Chi-Square test-proxy question

WA9*AS3

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	93.695[a]	16	.000
Likelihood Ratio	67.484	16	.000
Linear-by-Linear Association	34.874	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.560	.000
	Cramer's V	.280	.000
N of Valid Cases		299	

WA9*AS12

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	210.847[a]	16	.000
Likelihood Ratio	146.590	16	.000
Linear-by-Linear Association	70.525	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.840	.000
	Cramer's V	.420	.000
N of Valid Cases		299	

WA9*AS19

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	174.383[a]	16	.000
Likelihood Ratio	127.943	16	.000
Linear-by-Linear Association	67.189	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.764	.000
	Cramer's V	.382	.000
N of Valid Cases		299	

WA9*AS27

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	243.564[a]	16	.000
Likelihood Ratio	146.127	16	.000
Linear-by-Linear Association	73.822	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.903	.000
	Cramer's V	.451	.000
N of Valid Cases		299	

WA9*AF4

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	62.117[a]	16	.000
Likelihood Ratio	59.773	16	.000
Linear-by-Linear Association	14.668	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.456	.000
	Cramer's V	.228	.000
N of Valid Cases		299	

WA9*AF12

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	59.317[a]	16	.000
Likelihood Ratio	58.130	16	.000
Linear-by-Linear Association	7.452	1	.006
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.445	.000
	Cramer's V	.223	.000
N of Valid Cases		299	

WA9*AF20

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	80.172[a]	16	.000
Likelihood Ratio	61.360	16	.000
Linear-by-Linear Association	30.328	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.518	.000
	Cramer's V	.259	.000
N of Valid Cases		299	

WA9*AF28

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	42.908[a]	16	.000
Likelihood Ratio	44.082	16	.000
Linear-by-Linear Association	.643	1	.423
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.379	.000
	Cramer's V	.189	.000
N of Valid Cases		299	

WA9*CS23

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	261.624[a]	16	.000
Likelihood Ratio	151.730	16	.000
Linear-by-Linear Association	105.582	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.935	.000
	Cramer's V	.468	.000
N of Valid Cases		299	

WA9*CS31

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	130.526[a]	16	.000
Likelihood Ratio	112.581	16	.000
Linear-by-Linear Association	47.233	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.661	.000
	Cramer's V	.330	.000
N of Valid Cases		299	

WA9*CS7

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	250.058[a]	16	.000
Likelihood Ratio	187.286	16	.000
Linear-by-Linear Association	127.315	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.915	.000
	Cramer's V	.457	.000
N of Valid Cases		299	

WA9*CS15

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	191.157[a]	16	.000
Likelihood Ratio	144.879	16	.000
Linear-by-Linear Association	87.808	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.800	.000
	Cramer's V	.400	.000
N of Valid Cases		299	

WA9*CF16

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	114.646[a]	16	.000
Likelihood Ratio	86.608	16	.000
Linear-by-Linear Association	42.648	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.619	.000
	Cramer's V	.310	.000
N of Valid Cases		299	

WA9*CF24

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	76.090[a]	16	.000
Likelihood Ratio	69.595	16	.000
Linear-by-Linear Association	30.415	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.504	.000
	Cramer's V	.252	.000
N of Valid Cases		299	

WA9*CF8

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	130.341[a]	16	.000
Likelihood Ratio	107.000	16	.000
Linear-by-Linear Association	18.458	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.660	.000
	Cramer's V	.330	.000
N of Valid Cases		299	

WA9*CF32

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	43.420[a]	16	.000
Likelihood Ratio	38.737	16	.001
Linear-by-Linear Association	4.265	1	.039
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.381	.000
	Cramer's V	.191	.000
N of Valid Cases		299	

WA9*RS5

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	126.041[a]	16	.000
Likelihood Ratio	115.162	16	.000
Linear-by-Linear Association	60.304	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.649	.000
	Cramer's V	.325	.000
N of Valid Cases		299	

WA9*RS13

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	213.719[a]	16	.000
Likelihood Ratio	133.959	16	.000
Linear-by-Linear Association	82.480	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.845	.000
	Cramer's V	.423	.000
N of Valid Cases		299	

WA9*RS21

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	170.748[a]	16	.000
Likelihood Ratio	111.367	16	.000
Linear-by-Linear Association	67.203	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.756	.000
	Cramer's V	.378	.000
N of Valid Cases		299	

WA9*RS29

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	299.092[a]	16	.000
Likelihood Ratio	149.210	16	.000
Linear-by-Linear Association	91.187	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	1.000	.000
	Cramer's V	.500	.000
N of Valid Cases		299	

WA9*RF22

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	99.073[a]	16	.000
Likelihood Ratio	87.253	16	.000
Linear-by-Linear Association	23.776	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.576	.000
	Cramer's V	.288	.000
N of Valid Cases		299	

WA9*RF30

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	56.726[a]	16	.000
Likelihood Ratio	51.628	16	.000
Linear-by-Linear Association	5.905	1	.015
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.436	.000
	Cramer's V	.218	.000
N of Valid Cases		299	

WA9*RF6

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	104.403[a]	16	.000
Likelihood Ratio	89.197	16	.000
Linear-by-Linear Association	14.932	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.591	.000
	Cramer's V	.295	.000
N of Valid Cases		299	

WA9*RF14

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	99.398[a]	16	.000
Likelihood Ratio	77.462	16	.000
Linear-by-Linear Association	31.788	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.577	.000
	Cramer's V	.288	.000
N of Valid Cases		299	

WA9*WA25

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	77.521ᵃ	16	.000
Likelihood Ratio	57.142	16	.000
Linear-by-Linear Association	14.620	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.509	.000
	Cramer's V	.255	.000
N of Valid Cases		299	

WA9*WA33

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	193.274ᵃ	16	.000
Likelihood Ratio	124.489	16	.000
Linear-by-Linear Association	75.148	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.804	.000
	Cramer's V	.402	.000
N of Valid Cases		299	

WA9*WA1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	157.896ᵃ	16	.000
Likelihood Ratio	100.751	16	.000
Linear-by-Linear Association	58.401	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.727	.000
	Cramer's V	.363	.000
N of Valid Cases		299	

WA9*WA17

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	140.647ᵃ	16	.000
Likelihood Ratio	125.971	16	.000
Linear-by-Linear Association	66.197	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.686	.000
	Cramer's V	.343	.000
N of Valid Cases		299	

WA9*FA26

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	61.792ᵃ	16	.000
Likelihood Ratio	53.516	16	.000
Linear-by-Linear Association	33.178	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.455	.000
	Cramer's V	.227	.000
N of Valid Cases		299	

WA9*FA34

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	62.750ᵃ	16	.000
Likelihood Ratio	52.080	16	.000
Linear-by-Linear Association	16.738	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.458	.000
	Cramer's V	.229	.000
N of Valid Cases		299	

WA9*FA2

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	45.055ᵃ	16	.000
Likelihood Ratio	46.357	16	.000
Linear-by-Linear Association	.062	1	.803
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.388	.000
	Cramer's V	.194	.000
N of Valid Cases		299	

WA9*FA10

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	102.145ᵃ	16	.000
Likelihood Ratio	90.347	16	.000
Linear-by-Linear Association	22.023	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.584	.000
	Cramer's V	.292	.000
N of Valid Cases		299	

WA9*FA18

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	82.303[a]	16	.000
Likelihood Ratio	76.655	16	.000
Linear-by-Linear Association	32.620	1	.000
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.525	.000
	Cramer's V	.262	.000
N of Valid Cases		299	

WA9*Gender

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.000[a]	4	.061
Likelihood Ratio	9.816	4	.044
Linear-by-Linear Association	2.299	1	.129
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.173	.061
	Cramer's V	.173	.061
N of Valid Cases		299	

WA9*Ethnicity

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.657[a]	16	.698
Likelihood Ratio	11.791	16	.758
Linear-by-Linear Association	1.574	1	.210
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.206	.698
	Cramer's V	.103	.698
N of Valid Cases		299	

WA9*age

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.855[a]	8	.985
Likelihood Ratio	1.921	8	.983
Linear-by-Linear Association	.001	1	.974
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.079	.985
	Cramer's V	.056	.985
N of Valid Cases		299	

6.3 Chi-Square test-proxy question/demographics

WA1 - Gender

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.110[a]	4	.540
Likelihood Ratio	3.488	4	.480
Linear-by-Linear Association	2.317	1	.128
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.102	.540
	Cramer's V	.102	.540
N of Valid Cases		299	

WA1- Ethnicity

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.820[a]	16	.538
Likelihood Ratio	14.303	16	.576
Linear-by-Linear Association	.075	1	.784
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.223	.538
	Cramer's V	.111	.538
N of Valid Cases		299	

WA1- Age

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	61.671[a]	8	.000
Likelihood Ratio	11.277	8	.186
Linear-by-Linear Association	.024	1	.876
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.454	.000
	Cramer's V	.321	.000
N of Valid Cases		299	

WA9 - Gender

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.000[a]	4	.061
Likelihood Ratio	9.816	4	.044
Linear-by-Linear Association	2.299	1	.129
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.173	.061
	Cramer's V	.173	.061
N of Valid Cases		299	

WA9 - Ethnicity

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.657[a]	16	.698
Likelihood Ratio	11.791	16	.758
Linear-by-Linear Association	1.574	1	.210
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.206	.698
	Cramer's V	.103	.698
N of Valid Cases		299	

WA9 - Age

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.855[a]	8	.985
Likelihood Ratio	1.921	8	.983
Linear-by-Linear Association	.001	1	.974
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.079	.985
	Cramer's V	.056	.985
N of Valid Cases		299	

WA17 - Gender

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.622[a]	4	.328
Likelihood Ratio	5.394	4	.249
Linear-by-Linear Association	1.546	1	.214
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.124	.328
	Cramer's V	.124	.328
N of Valid Cases		299	

WA17 - Ethnicity

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.541[a]	16	.485
Likelihood Ratio	19.280	16	.254
Linear-by-Linear Association	2.058	1	.151
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.228	.485
	Cramer's V	.114	.485
N of Valid Cases		299	

WA17 - Age

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.931[a]	8	.270
Likelihood Ratio	8.936	8	.348
Linear-by-Linear Association	.596	1	.440
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.182	.270
	Cramer's V	.129	.270
N of Valid Cases		299	

WA25 - Gender

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.369[a]	4	.985
Likelihood Ratio	.369	4	.985
Linear-by-Linear Association	.003	1	.954
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.035	.985
	Cramer's V	.035	.985
N of Valid Cases		299	

WA25 - Ethnicity

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.699[a]	16	.190
Likelihood Ratio	21.647	16	.155
Linear-by-Linear Association	.454	1	.500
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.263	.190
	Cramer's V	.132	.190
N of Valid Cases		299	

WA25 - Age

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.881[a]	8	.661
Likelihood Ratio	6.490	8	.593
Linear-by-Linear Association	.022	1	.881
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.140	.661
	Cramer's V	.099	.661
N of Valid Cases		299	

WA33 - Gender

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.616[a]	4	.230
Likelihood Ratio	5.652	4	.227
Linear-by-Linear Association	.242	1	.623
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.137	.230
	Cramer's V	.137	.230
N of Valid Cases		299	

WA33 - Ethnicity

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.320[a]	16	.206
Likelihood Ratio	21.804	16	.150
Linear-by-Linear Association	1.665	1	.197
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.261	.206
	Cramer's V	.130	.206
N of Valid Cases		299	

WA33 - Age

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.610ᵃ	8	.225
Likelihood Ratio	11.694	8	.165
Linear-by-Linear Association	4.507	1	.034
N of Valid Cases	299		

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.188	.225
	Cramer's V	.133	.225
N of Valid Cases		299	