The development and initial validation of a scale to measure group functioning

Masters Research Project

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Declaration

I declare that this research report is my own, unaided work. It has not been submitted before

for any other degree or examination at this or any other university.

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Abstract

The aim of this study was to develop a scale to measure group functioning in work groups. The scale was developed based on the Integrative Model of Group Development. There were 76 individuals who participated in the study. There were 15 groups that participated in this study. The sample was drawn from an organisation in Johannesburg. The research design was non-experimental and cross-sectional in nature. The data collected were analysed using factor analysis, Cronbach's Alpha coefficient and discriminant analysis. The results showed that the overall scale had two subscales which showed strong reliabilities. The implications of the findings are that further research is needed to match stages of group development with the behaviour of individuals in organisations. The findings indicate that more research on group functioning in the South African work context is required.

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Contents Page

Chapter One: Introduction	6
1.1 Introduction	6
1.2 Rationale	7
Chapter Two: Literature Review	10
2.1 Introduction	10
2.2 Groups, teams and how they are defined	10
2.3 Group development and functioning	12
2.4 Group effectiveness, productivity, performance	13
2.5 Group development theory	16
2.6 Similarity of group development models	
2.7 Wheelan`s Integrative Model of group development	20
2.8 Gersick's Punctuated Equilibrium Model	
2.9 Tuckman and Jensen's Model of Group Development	
2.10 An Integrative Theory of Group Development for Task Groups	40
2.11 Scale development and validity	43
2.12 Conclusion	44
2.13 Aim of Study	45
2.14 Research questions	46
Chapter Three: Methodology	47
3.1 Introduction	47
3.2 Research Design	47
3.3 Sample	48
3.4 Procedure	49
3.5 Measuring Instrument	51
3.5.1 Group loyalty scale	52
3.5.2 Group conflict scale	52
3.5.3 Group readiness for work scale	53
3.5.4 Group work stage scale	53
3.5.5 Group termination scale	53
3.6 Statistical Analysis	54
3.7 Ethics	
	-

Chapter Four: Results	56
4.1 Introduction	56
4.2 Factor Analyses	56
4.3 Discriminant Analysis	60
4.4 Cronbach's Alpha	61
4.4 Conclusion	69
Chapter Five: Discussion	71
5.1 Introduction	71
5.2 The factors and how they can be understood	71
5.3 The reliability of the scales	74
5.4 Concurrent validity of the scale	
5.5 Limitations of the Research	79
5.6 Recommendations for Future Research	80
5.7 Conclusion	81
Reference List	83

Chapter One:

Introduction

1.1 Introduction

Organisations have increasingly emphasised the importance of teams for organisational success in modern economies (Cohen & Bailey, 1997). The use of groups or teams in organisations is considered an effective response to the dynamic and competitive environments in which organisations operate (Lira, Ripoll, Peiro, & Zornoza, 2008). In consideration of the impact of groups on organisational outcomes, organisations are now devoting more time, attention and resources towards research on groups with a strong focus on group performance (Chou & Garcia, 2011). Organisations are becoming more dependent on groups due to the shift towards a flatter and more decentralised organisational structure (Krebs, Hobman, & Bordia, 2006). It is suggested that the effective use of small work groups can lead to higher job motivation, better decision making, and higher organisational performance (Chou & Garcia, 2011). Guzzo and Dickson (1996) argue that team-based forms of organising often bring about higher levels of organisational effectiveness in comparison to traditional, bureaucratic forms. The use of work groups to coordinate and manage work in organisations results in broader spans of control, fewer supervisors, and more reliance on self-management by teams (Krebs, Hobman, & Bordia, 2006). According to Chidambaram and Bostrom (1996), teams will often involve members from different functional units and, occasionally, from different organisations. These cross-functional teams will engage in a variety of activities and tasks, which will require them to interact on a regular basis and over time, as the teams continue to meet and work together, their nature and personality changes (Chidabaram & Bostrom, 1996). These changes may result in groups becoming more effective, or it may cause the group to become dysfunctional (Chidabaram & Bostrom, 1996). This highlights the importance of having well developed and functional teams within organisations, to ensure that organisations maximise the benefits derived from these teams. The relationship between group development and group functioning should be an important concern to organisations, since groups change as they develop and this development can either assist or harm organisational performance. This study focuses on the assessment of group functioning. Managers in business organisations are interested in knowing whether or not their work teams are performing their duties well and harmoniously.

1.2 Rationale

The ability to determine the extent of group functioning is therefore very important for optimal organisational performance. Group functioning reflects stages of group development and consequently indicates successful development, troubled group development or retarded growth. This is the reason why this study was undertaken since it makes organisations in South Africa and overseas realise the importance of group functioning in the management of work teams and for people working in groups to achieve their set targets. According to Chang, Duck, and Bordia (2006), it is well recognised that common developmental trends can be observed across a wide range of groups. Wheelan (2009) indicates that there has been an overreliance on laboratory studies as a means of learning about work groups. The ability to conduct research on groups in a naturalistic setting has been found to be difficult and timeconsuming and as a result there is a need for more research to be conducted on natural groups (Wheelan, 2005). It is argued that it would be very helpful to have access to an instrument that accurately measures group development at a given point in time. This study took up the challenge raised in many organisational development forums to develop an instrument that can be used to assess organisational functioning. Managers' ability to determine group functioning helps them design effective techniques for dealing with individual and group performance. Group functioning is shown when some organisations show cohesion and good performance while others are stuck in conflict with little productivity. Groups functioning at a higher stage of group development are associated with effectiveness, productivity and high performance (Wheelan & Tilin, 1999). With the growing use of work groups and teams in organisations, it would be beneficial for human resource practitioners and organisational development consultants to identify valid, low-cost, and practical predictors of team performance (Devine & Philips, 2001). It can be argued that a functional team would perform better than a dysfunctional team.

The focus of this research was to design a scale to measure group functioning in South African organisations. The scale sought to measure group development in various work teams found in organisations. The scale is diagnostic in the sense that it yields a score to indicate the level at which the work group is operating at. In this study, the level of group function is associated with work performance. Dysfunctional groups are presented as ineffective work groups. It is expected that organisations in South Africa could use the instrument in organisational diagnosis or work team assessment if the instrument is validated further through the Health Professions Council of South Africa, Psychometric Committee, for commercial purposes.

To assist in achieving the aims of this study, the research report is structured as follows: Chapter two will be the literature review, Chapter three will contain the methodology, Chapter four will look at the results and Chapter five will include the discussion and the conclusion. Chapter two will discuss the literature regarding groups and teams to provide clarity regarding the difference between the two terms. The next section looks at group development and group functioning to explain how the two are related and as a result why group development can be considered a measure of group functioning. The following section looks at group effectiveness, productivity and performance with the aim of explaining how they relate to group development and group functioning. The literature review then leads to a discussion on group theories and highlights the four main theories on group development. A brief discussion on scale development and validity is included, before the conclusion. The literature review aims to highlight the important theories and links between concepts to ensure a thorough understanding of group development and group functioning, so as to assist with the development of the scale.

Chapter Two:

Literature Review

2.1 Introduction

This section will discuss the literature relating to group development, functioning and effectiveness. The first part will briefly outline the literature on groups, teams and how they are defined. This is to ensure that the definitions are consistent throughout this paper. The next section will look at group development and group functioning, it will explain the link between the two and why they are both important. The following section will assess group effectiveness, performance and productivity as outcomes of optimal group functioning and higher stages of group development. The next section will give an extensive overview of group development theory and then a thorough explanation of four of the most popular group development theories. The last section, before the conclusion, will look at research literature relating to scale development and the testing of validity, to ensure that an understanding of both processes is discussed. The conclusion will succinctly bring together all the concepts discussed.

2.2 Groups, teams and how they are defined

The online Merriam-Webster's Dictionary (2012) defines a group as "a number of individuals assembled together or having some unifying relationship". This definition is very simplistic and broad, in order for this research to be successful; this definition would need more refinement. The definition of a team outlined below provides more guidance and limits the types of groups that can be included in this research. Cohen and Bailey (1997) do argue that in their research they used the terms 'team' and 'group' interchangeably. They also go further to say that the term, 'team' is more commonly used by popular management literature and 'groups' is commonly used in academic literature (Cohen & Bailey, 1997). It would

therefore make sense to use the two terms interchangeably in this study. Cohen and Bailey's (1997) definition of a team is as follows:

".....a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems, and who manage their relationships across organisational boundaries" (p.241).

This definition provides important aspects about a group such as interdependence, shared responsibilities, intactness, and relatedness to the larger work group. It is also indicated in this definition that groups in organisations work towards a common goal and group members are interdependent in the way they perform tasks. Hackman (1987, p. 322) has a similar definition of what a work group is. The definition requires that a group must meet three requirements which are: firstly, it must be a real group, secondly, the group must have one or more tasks to perform and thirdly, the group must operate within an organisational context. The first requirement implies that a group should be an intact social system complete with boundaries and differentiated roles among members.

The next issue to be discussed with regards to the understanding of what constitutes a group is group size. In McGrath's view (1984, as cited in Meneses, Ortega, Navarro, & De Quijano, 2008) for a set of people to be considered a group, a relatively small size is needed which ensures that all its members are mutually aware and are therefore able to interact with one another. In small group research, it is argued that the mutual awareness and potential interaction among group members generates interdependence, which as outlined above, is a requirement for a set of people to constitute a group (Meneses et al., 2008). Interdependence within a group is of fundamental importance since it ensures that the members interact,

collaborate and exchange ideas and resources. Hare (2010) explains that a collection of individuals only becomes a group after there has been a sufficient amount of interaction between the members. According to Wheelan (2009), studies on the impact of group size on the extent of participation of individual members showed that as group size increased, the amount of communication initiated by individual members decreased. An increase in group size is more likely to reduce the amount of interaction between group members as well as their interdependence. Wheelan (2009) argues that previous research on group size usually involved groups with between 2 to 8 members, and that naturally occurring groups tend to be larger. In Wheelan's (2009) research she looked at groups ranging in size from 3 to 25. This gives an indication of the approximate size of naturally occurring groups. The key points in this definition are that a group must have individuals who: 1) are interdependent in their tasks, 2) share responsibility for the outcomes and 3) are embedded in one or more larger social systems and manage their relationships across organisational boundaries. In addition, the group must be small enough for interaction to occur between all members.

2.3 Group development and functioning

Group Development research originated in the early 1950s (Chang et al., 2006). Bushe and Coetzer (2007) emphasise that group development is not something that all groups achieve over time but is instead a journey toward optimal functioning that is only obtained by some groups. This indicates that group development focuses on how groups reach optimal functioning and become effective. Arrow, Poole, Henry, Wheelan, and Moreland (2004) explain the observation interval which is a time scale that refers to the time over which a process is observed. In this study, the observation interval would be the time at which the questionnaire was administered to the group members. The ability of groups of individuals to work together effectively and productively is crucial in the achievement of task effectiveness (Stout, Salas, & Carson, 1994). In this study, research on group development is utilised to

determine what is considered the antecedents of optimal group functioning. Davis, Aldrich, and Longest (2009) make an important contribution to the study of groups when they point out teams do not always produce favourable outcomes. This highlights that group functioning is a continuum that can result in varying outcomes depending on where the group lies on the continuum, in other words, how developed the group is. Optimal functioning indicates a highly developed group, which in turn results in group effectiveness. The next section will discuss group effectiveness, productivity and performance. The discussion dwells on how work groups are understood and measured in group processes literature.

2.4 Group effectiveness, productivity, performance

The need to disentangle these three concepts is important because they are intrinsically linked to optimal group functioning and a highly developed group. According to Cohen and Bailey (1997, p.243) "...effectiveness is a function of environmental factors, design factors, group processes, and group psychosocial traits". This implies that from the outset a group can have an increased chance of being effective and this depends on how the elements depicted in the framework are dealt with. These all need to be considered when trying to understand whether a group is effective or in other words functioning at a high level of development. The aim with this figure (see figure 1 below) is to demonstrate that the design of the group plays an important role in influencing group effectiveness (Cohen & Bailey, 1997). The environmental factors influence the task design, which in turn affect the internal and external processes, the psychosocial traits and the effectiveness of the team. The first two also influence the effectiveness of the group. The importance of the diagram is that it highlights 4 key areas which can be changed in order to improve the group's effectiveness. A deficiency in any one of the four areas would indicate a group that is dysfunctional. The group development literature attempts to explain how these factors are acquired or developed over time to ensure that the group reaches optimal functioning and therefore effectiveness. Lastly the diagram highlights a number of different indicators of group effectiveness such as performance outcomes, attitudinal outcomes and behavioural outcomes.

Figure 1:

Antecedents of group effectiveness (Cohen & Bailey, 1997, p.244)



Figure 1. A Heuristic Model of Group Effectiveness. Variables listed under each category are meant as examples; they do not constitute an exhaustive listing.

Chang and Bordia (2001) explain that group performance is generally operationalised as some form of task effectiveness or group productivity, for example task scores, decision quality or problem solving scores. This understanding of group performance provides the link between group productivity and group performance. However group effectiveness has still not been linked to either group productivity or group performance. Guzzo and Dickson (1996) lay out the criterion for team effectiveness which includes ratings on different dimensions of performance obtained from different sources. Kozlowski and Ilgen (2006) argue that team effectiveness unfolds over time and across levels, from individual through to team. Multiple theorists (Hackman, 1987; Chang & Bordia, 2001; Kozlowski & Ilgen, 2006) have presented a three-dimensional model of group performance which considers a group's contribution to its embedded organisation, to itself and to its members. This results in three levels at which a group's performance can be assessed. Each level has a different means of being assessed. The first level, namely the performance with regards to the group's contribution towards the embedded organisation can be measured by looking at the degree to which the groups' output meets the required standards determined by the organisation (that is, productivity). The second level is the group itself, the contribution to the group can be measured by the degree to which the processes utilised by the group to carry out the work enhances the capability of members to work together interdependently in the future (that is, system viability). The third level is the group's members and the contribution to the members can be measure by looking at the group experience and determining whether it contributed towards the growth and personal well-being of team members (that is, professional growth) (Chang & Bordia, 2001). The importance of this understanding of performance is that there are three levels that a group can perform at, which means that performance at one level does not automatically imply performance at another level or all three levels. An interesting consideration with regards to this understanding of performance is its emphasis on group members' experience, two of the levels, namely system viability and professional growth, focus on this. This emphasis provides support to the credibility behind asking group members for their perceptions regarding the group, when trying to assess group functioning. Since the other means of measuring team effectiveness, suggested by Guzzo and Dickson (1996) as well as Cohen and Bailey (1997), are difficult to obtain, for example company records reporting customer complaints and monetary losses due to absenteeism, it is suggested that

group performance should be used as a measure of group effectiveness. Group performance can be assessed through the three dimensions created by Hackman, which are productivity, system viability and professional growth. This information can be obtained through asking for the individual group members perceptions of each. This section has provided an explanation as to what potentially can lead to group effectiveness, how group effectiveness should be understood and suggests potential criteria by which it can be assessed. Some of these important aspects were incorporated in the development of the sub-scales that measured group functioning in this study.

2.5 Group development theory

Research on group behaviour has indicated that groups change over time. These patterns of change can be represented by group development models (Kozlowski & Ilgen, 2006; Chidambaram & Bostrom, 1996). According to Chang et al., (2006) there have been more than 100 group development theories and as a result it is argued that group development is rarely defined adequately enough. This creates the potential for misunderstanding and confusion for the individual who attempts to study group development. Despite the vast number of group development models, it is possible to classify all of them into one of two broad categories: sequential and non-sequential (Chidambaram & Bostrom, 1996). Group development theorists who believe in the sequential models argue that there is a unitary sequence of development that groups pass through during the course of their lives, the changes are usually small, gradual and path dependent (Chidambaram & Bostrom, 1996; Chang et al., 2006; Gersick, 1989). Non-sequential models do not present groups as following predetermined sequence of events; instead, they focus on explaining the underlying factors that cause shifts in group development (Chidambaram & Bostrom, 1996). Smith (2001) explains that the non-sequential models can be viewed as contingency models since the changes or patterns are often as a result of environmental factors. Both models agree about the existence of critical points in the life of a group and that group development can be characterised by the exhibition or existence of certain relevant behaviours (Chidambaram & Bostrom, 1997). Kozlowski and Ilgen (2006) explain that there are specific behaviours portrayed by group members that directly contribute to group performance. Miller (2003) explains that groups are systems operating in an ever changing environment. This would mean that attempting to capture the 'relevant behaviour' mentioned above poses a real challenge because of the ever changing environment. Campbell, Flynn, and Hay (2003), argue that combining all of the group development models produces a more complete, complicated and complex model that is representative of a spiral rather than a simple cycle. As the group passes through each cycle of order or complexity, they become transformed. As groups develop, they adapt and become more sophisticated to deal with similar problems in the future (Campbell et al., 2003). This perspective to group development. It is evident from this line of argument that developing an all-encompassing measure of group functioning is realistic.

It has been proven that different groups have different patterns of group development (Dennis, Garfield, & Reinicke, 2008). Guzzo and Dickson (1996) argue that there needs to be a distinction between the different kinds of groups that exist based on the work they do. The purpose of the group can define its stages of development and operations. It is argued that the type of tasks being performed by the group can also influence the way the group develops. Lastly, the length of time a group is together and the methodology used to examine the groups could also influence the development patterns observed by the researchers (Chidambaram & Bostrom, 1996; Arrow et al., 2004).

2.6 Similarity of group development models

Bushe and Coetzer (2007) believe that developmental models at the three different levels tend to share similar conceptions of what constitutes a more developed group. They look at four common themes that indicate a more developed group, which are: self-awareness, reactive behaviour, goal directed behaviour and group identity. Bushe and Coetzer (2007, p. 187) explain how the four themes can indicate the extent of development in a group as follows: ``a) The more developed a group is, the greater the awareness it has of itself; b) emotional, reactive behaviour decreases, and rational goal directed behaviour increases; c) the group is better able to actualise its potential and d) a more developed group has a greater sense of identity and greater openness to changing that identity". These four areas can be used as a starting point when attempting to understand how the different development theories relate to each other. Arrow (1997) explains that the point at which groups will be responsive to interventions differs according to the different models. Arrow et al., (2004) explains that there is a disjuncture between how individuals understand time and how the literature on the temporal perspective explains time. "The temporal perspective is a process focused view that treats groups as systems in which change occurs across multiple time scales" (Arrow et al., 2004). This is important to consider when attempting to measure group members perceptions on group functioning, since their perception of the groups' functioning could vary based on their belief regarding an acceptable length of time for a group to achieve specific milestones or goals. It could also influence the understanding of theories, since different time frames could be applied to different group theories.

It has already been shown that there are two broad categories that group development models can be placed into; however it is important to look a little closer at the two categories to elaborate on what makes them distinct and also to touch on how they might be similar. All group development models are looking primarily at the changes that occur within a group over time (Smith, 2001). Chang, Bordia, and Duck (2003) argue that most linear models of group development do not consider the developmental stages to have clearly defined boundaries separating each other. This is important to consider because it indicates that a group can be at a specific stage at any point in time during its existence opposed to specific points predicted by the stage theorists. Understanding linear progressive models in this manner demonstrates how the Punctuated Equilibrium Model could actually be complimentary to them. Wheelan (2005) explains that the sequential and non-sequential models both describe dynamic processes that are remarkably similar. For example, in the integrative model teams are said to accept, without question, the work processes that are proposed during the early stages, this aligns with Gersick's Punctuated Equilibrium model that states that a group follows the approach taken at the first meeting, for the entire first half of the groups' life (Chang et al., 2003). Hare (2010) argues that groups consisting of buddies would perform better overall because the buddies did not have to spend as much time in the solution of status problems. One could argue that the issue of status problems could result in conflict occurring within the group. The issue of conflict is dealt with in both the sequential and non-sequential models. An example of where conflict would be dealt with would be during the storming stage in Tuckman's model, the second stage in Wheelan's model and the first half of Gersick's model. A common trend within both the sequential and non-sequential models is the presence of a membership phase; the term membership phase was used by Bushe and Coetzer (2007) to explain the first phase of group development. It is considered the equivalent to both Tuckman's and Wheelan's first two stages of group development and has been related to many of the other sequential models conceptions of the early stages of a groups development (Bushe & Coetzer, 2007). The last commonality between the models is that when the group first meets its primary objective is to get acquainted to one another and to the task at hand in order for them to begin working (Hackman & Wageman, 2005), however the manner in which they achieve this and how long they take to do so, depends upon the theory.

Group development theory is vast and tough to navigate, the very concept of group development is still being debated and much can still be learnt about the area. The important point though is that groups change, whether it is towards a fully functional and effective team or towards a dysfunctional and problematic group is dependent upon a wide variety of factors. The different theories have discussed these and the aim of the next section of this paper is to examine a number of the many group development theories, with the intention of determining the characteristics that are present at each stage of development and those that indicate a developed group.

2.7 Wheelan's Integrative Model of Group Development

Due to the large number of group development theories, it is important to have a starting point from which to begin examining group development and the characteristics displayed by a group. This starting point will be Wheelan's Integrative Model of Group Development, since it attempts to combine the many sequential and non-sequential models into one model that shows a clear path of development for a group (Wheelan, 2005). The five stages of group development, as explained by Wheelan, will be discussed in the first part of this section. These five stages are strongly based on Tuckman's five stages of group development namely; forming storming, norming, performing and adjourning. The only major difference between the two theories is the greater amount of detail that Wheelan adds to explaining each of the stages of development and the incorporation of more recent work (Wheelan & Tilin, 1999). The main aim is to determine which characteristics are most predominant at each stage and what the characteristics are of a fully developed group, since that is indicative of a highly functional group.

According to Wheelan's Integrative Model of Group Development there are five stages that a group passes through until it reaches maturity. These five stages are very strongly based on Tuckman's five stages of group development namely forming, storming, norming, performing and adjourning (Wheelan, 2005). This is demonstrated by the similarity between the issues dealt with in the equivalent stages in each theory. This will be discussed in more detail throughout the discussion explaining each stage of development in Wheelan's model. The stages of group development are shaped by the dynamics associated with the group's social structure and processes (Wheelan, 2005). This understanding of group dynamics is strongly influenced by Tuckman's conceptualisation of the two realms at which a group develops. Tuckman named these two realms the interpersonal realm and the task realm (Tuckman, 1965). These two realms are influenced by the type of group that is under observation (Tuckman, 1965). This would also be applicable to Wheelan's social structure and processes. The group structures include the communication structure, the goals and tasks of the group, the status and roles of the group members as well as the leadership within the group (Wheelan, 2005). The group processes include conformity and deviation as well as cohesion and conflict. These group processes are also reflected in the items that constitute the subscales designed to measure group functioning in this study.

Following the Integrative Model of Group Development, the first stage of group development is the dependency and inclusion stage (Wheelan, 2005). This stage is the equivalent of Tuckman's first stage of group development called forming. The most important aspects of a group functioning at stage one are loyalty to and dependency on the leader, the need to be included in the newly formed group and the fear of being excluded. The communication structure that is adopted by the group at this stage does much to determine the status and leadership hierarchy, group morale, problem solving efficiency,

cohesion, and group integration (Wheelan, 2005). The communication network is critical since it provides the medium for the development of group culture and social structure (Wheelan, 2005). This means that a proper and effective communication structure will create the foundation for the proper development of a group. This communication ensures that there is interaction between the group members, this interaction would involve the members being "eager to please and expectant of protection, structure and direction from the leader" (Bordia, Difonzo, & Chang, 1999, p. 10). Through interaction one forms their contextual professional social identity, which means that by interacting with other individuals in the group, the individual will develop their own professional identity within and specific to the context of the group they are a part of (Clow-Bohan, 2011). In light of this, it would indicate that the individual could potentially create a negative or ineffective identity within the group, if the interaction patterns found at stage one remain prevalent within the group and are not adequately resolved. Clow-Bohan (2011) further explains that learning is accomplished through interaction. The interaction with group members at the first stage is primarily to learn more about the individuals in the group and how they fit into the groups' structure and can contribute towards the groups' goals, which allows the group to develop properly and therefore perform effectively. Davis et al. (2009) explain that small groups need effective communication to clarify the norms, values, and goals. Peterson, Mitchell, Thompson and Burr (2000) indicate that group member's agreement about issues is important for group action and performance. This reinforces the importance of group member interaction and its role in improving group functioning. Shared mental models address the development of shared understanding amongst group members regarding the many different aspects of the group; this can be understood as a kind of organised knowledge structure (Peterson et al., 2000). The establishing of a shared understanding is one of the outcomes of the first stage of group development and will help group members to predict future actions and work together in a coordinated manner (Peterson et al., 2000). All groups form to accomplish some goal, these goals can either come from external groups or emerge as a result of member interactions; they are subject to interpretation and can be in conflict with other goals (Wheelan, 2005). This is problematic when the goals are interpreted incorrectly or conflicting goals hinder the progress of the group, in other words prevent further group development. This is where the role of interaction is so important since it provides the opportunity for group members to ensure that there is consensus and understanding relating to not only the group goals but also other aspects of group dynamics that are resolved at the first stage, which is likely to result in the creation of a shared mental model amongst group members. A role consists of a set of expectations shared by members about the behaviour of an individual (Wheelan, 2005). These roles need to be clarified at stage one to ensure proper group functioning. At stage one of Tuckman's model there is an emphasis on orientation regarding the boundaries relating to the task and process by which the task will be achieved, which would include role clarification (Tuckman, 1965). Leadership at the first stage of group development has a symbolic function, since the leader becomes the focal point for role differentiation (Wheelan, 2005). Tuckman (1965) argues that at the first stage members rely on roles assigned from outside of the group and on a fixed hierarchy. This differs slightly from Wheelan's understanding but there are similarities around the notion of dependence, Wheelan's is dependence on the leader and Tuckman's is dependence on direction that is external to the group. Arrow et al. (2004) explain that social role theory predicts that in demographically diverse groups, status and roles will be initially assigned according to stereotypes, however as members get to know each other better, individuating information will cause members to adjust inaccurate assessments and reassign roles and status accordingly. The ability of group members to get to know each other better would be determined by the extent of interaction that occurs and the amount of learning that is gained from the interactions between group members. Bushe and Coetzer (2007) believe that issues of power and competence are present during the membership phase, which would include stage one of this model. Dennis et al., (2008), found in their study that all of the examined groups, that utilised group support systems, performed activities associated with the forming stage that is in Tuckman's 1965 model. The forming stage is equivalent to the dependency and inclusion stage of the Integrative Model of Group Development. This indicates that leadership support is needed in assisting groups at the early stages of group development to improve group functioning. This relates to the above discussion on dependence and indicates how the group can benefit from strong leadership as well as positive external support. Group structure is important in stage one of group development because members rely on support structures and organised functions when they find their way and place in the organisation. This is because it provides security by reducing ambiguity (Tuckman, 1965).

Group communication plays a vital role at the beginning of a group's lifespan, since it results in promoting interaction between members which results in learning and assists in determining the goals and the means of achieving those goals as well as roles, tasks and responsibilities within the group. This will lead to enhancing the effectiveness of the group since clarity regarding these factors will result in the creation of a shared mental model amongst group members regarding the conceptualisation of the group, its processes and its structure. One of the main benefits of shared mental models is coordination, which is considered the most important aspect of team work (Peterson et al., 2000). The important consideration here is that the shared mental model that has been established by the end of stage one might not necessarily be optimal for the group or might, unknown to the members, differ between them because of the large degree of conformity and lack of conflict, as a result the shared mental models established at stage one are likely to change substantially over time. Peterson et al., (2000) explain that time plays a crucial role in group development since the mental models present in the group are likely to change over time, as group members gain experience with each other and their task and also receive feedback from their

environment. The leader's role at this first stage of group development is to assist members negotiate and articulate their needs, conform to authority and avoid deviation or dissent. Group cohesion is a valued goal. According to Wheelan (2005) conformity is likely to be higher at the first stage of group development. Cohesion and conformity at the early stage of group development are vital to the group's survival and as a result the group at this early stage tends to avoid conflict (Wheelan, 2005). Higher group cohesion should cause members to remain in the group despite valued alternatives. Members in the group engage in symbolic or token gestures that signify unity and they initiate new ventures that are unanimously agreed upon (Lawler, Thye, & Yoon, 2000). This implies high group loyalty, pride, consensus, cohesion and common action at the early stage of group development. The first stage of group development is all about orientation and loyalty that is shrouded in uncertainty.

The second stage is the counter dependency and fight stage. At this stage conflicts about values surface and disagreements about goals and tasks emerge. This stage is strongly based on Tuckman's second stage of group development called storming and so Tuckman (1965) will be used to add to the discussion on this stage. Conflict has been found to be associated with increased cohesion and member satisfaction with the group (Wheelan, 2005). In a newly formed group, it might take several periods of conflict before an informal "pecking order" can be established (Hare, 2003). Dissatisfaction with roles may surface, but as a result of the disagreement clarity starts to be gained regarding goals and roles (Wheelan, 2005). Stempfle, Hubner, and Badke-Schaub (2001) explain that roles, norms and communication patterns are not predefined but need to be established through interaction. The conflict ensures that interaction occurs which is required to resolve the issues caused by the consensus at stage one. This allows for the establishment of roles, norms and communication patterns that are more suitable to the group, which results in changes to the shared mental

models of the group allowing for it to function more effectively. According to Guzzo and Dickson (1996), when there is conflict between group and individual goals, dysfunctions within the group can occur. Beersma and De Dreu (2005) explain that conflict can also be functional for groups since it can stimulate creativity and innovation. Tuckman (1965) explains that stage two is characterised by a greater emphasis on autonomy and individual rights being demonstrated by group members. This means that it is important to pay attention to individual goals as well as group goals when examining a group. Although groups create pressure toward uniformity, there is also a tendency for groups to create and maintain diversity among members (Feldman, 1984). Smith (2001) explains that at stage two people begin to discover others in the group with whom they identify with and as a result factions or cliques begin to form that may cause conflict. This varies from the autonomy argument mentioned by Tuckman since it introduces sub groups and coalitions that might incite conflict. Increased member participation occurs, which is important for communication, however decreased conformity and deviation from emerging norms is evident (Wheelan, 2005). Norms are formed and enforced only with regard to behaviours that have some significance to the group (Feldman, 1984). This explains why norms are challenged at the second stage of development since the group is more comfortable with each other and by challenging the norms the group will improve its overall development, since it will challenge the pre-existing shared mental models that might have a negative impact on the groups' performance. Wheelan (2005) explains this by saying that if efforts to resolve conflicts are successful, increased consensus about group goals and culture become evident near the end of stage two. It is important to note that interpersonal conflict needs to be recognised as normal and even expected as the group develops (Gajda, 2004). The difference is the type of conflict that is being engaged in; constructive negotiation can result in good quality decisions, create order and stability, increase self-efficacy and reduces the likelihood of future conflict. A destructive negotiation process on the other hand, results in poor decisions,

failure to agree, member dissatisfaction and disrupts the social order (Beersma & De Dreu, 2005). This is important to note since it plays a role in whether this stage is successfully navigated. Lastly if conflict resolution is successful, then trust, cohesion and stability within the group increases (Wheelan, 2005; Wheelan & Williams, 2003). In this study, there is a sub-scale which was designed to assess conflict and group productivity in the work group.

Stage three is the trust and structure stage according to the Integrative Model of Group Development and is based upon the third stage in Tuckman's model known as the norming stage. As a result of the conflict in stage two, there is evidence of increased goal clarity and consensus (Wheelan, 2005). The communication structure is more flexible and the content has become more task orientated (Wheelan, 2005). According to Ilgen, Hollenbeck, Johnson, and Jundt (2005, p. 529) there is consensus that task conflict is generally not helpful for teams; rather "teams require (a) rich, unemotional debate in a context marked by trust, (b) a context where team members feel free to express their doubts and change their minds and (c) an ability to resist pressures to compromise quickly or to reach a premature consensus". This is most likely to occur at this stage of development. Coalitions and subgroups continue to form and are more accepted at stage three. Helpful deviation is accepted and increased cohesion, trust and member satisfaction is observed (Wheelan, 2005). Satisfaction is defined as the subjective evaluation of the quality of team interaction and it is argued to be an important indicator of motivation (Erbert, Mearns, & Dena, 2005). Cooperation is more evident and individual commitment to group goals and tasks is high (Wheelan, 2005). Cooperation is considered the starting point for fostering strategic alliances which could potentially enhance the effectiveness of the group (Gajda, 2004). Tuckman (1965) explains that commonalities begin to develop between team members and the growth of an interlocking network of friendship arises, further role interdependence, harmony, solidarity and concrete group norms begin to emerge. The group at this stage is heading towards greater

functioning. Around this stage, one could argue that Gersick's second phase would be occurring. Gersick (1988) argues that central approaches and behaviour patterns that persisted during phase one disappeared at the halfway point as groups dropped old approaches and searched for new ones that they found to be constructive and useful. As a group obtains more trust and structure, which occurs at stage three, one could argue that they are discarding the old for a new more structured and trusting approach that allows the group to enter the fourth stage ready for work. Tuckman (1965) explains that the third stage is characterised by the emergence of a group dialect, which one could potentially consider to be the equivalent of a shared mental model. This would indicate another change in the shared mental models amongst group members due to the increased understanding and acceptance of the group by group members. The important characteristics at this stage are the increased clarity as well as the increased acceptance of subgroups and coalitions and lastly the improved cooperation and commitment amongst group members towards the group. These are all important aspects of a developing group and one that is headed towards proper functioning. The preparation for work sub-scale is used to measure this stage and would be indicative of a group that had gone through the phase of unproductive work behaviours and dealt with them successfully.

The fourth stage is the work stage in the Integrative Model of Group Development and is based upon Tuckman's fourth stage of development called performing. This stage is the productive stage where everything is accomplished; at this stage functioning can be considered to be optimal. This stage is characterised by total clarity regarding group goals and individual roles. Members at this stage show behaviours that are generally acceptable to the group, and it is usually noticeable that individual and group actions are geared towards organisational success (Wheelan, 2005). Tuckman (1965) explains that there is an emphasis on task achievement that overrides the groups' social structure. Job tasks are assigned mutually according to members` abilities and interests (Wheelan, 2005). The leadership style will be appropriate to the dynamics within the group and during the work stage the prevailing leadership style would be characterised by delegation and equitable distribution of the workload (Wheelan, 2005). This indicates a group with an effective and realistic shared mental model since the primary benefit of a shared mental model, namely coordination, is clearly present at this stage (Peterson et al., 2000). The group receives and utilises feedback about its performance and the group spends time defining the problems they need to solve or the decisions they need to make (Wheelan, 2005). This indicates that a developed team will utilise planning when approaching a task. Ilgen et al., (2005) argue that rotation of the leader's role and the provision of peer feedback promote higher group participation and boosts group performance. Wheelan (2005) explains that groups at stage four encourage high performance and promote product quality. Innovative employees are rewarded at this stage for coming up with novel ideas or implementing logical organisational strategies without consulting with the leader. A work group functioning at stage four of group development is also considered to be highly cohesive and interpersonal attraction between members is high and everyone in the group is more likely to be cooperative (Wheelan, 2005). Smith (2001) explains that during this period groups eagerly and mutually explore and resolve their problems. Hare (2003) highlights an important point that the least desirable combination is when a group that is high on social-emotional cohesion uses its cohesion to support a norm for low productivity. It is very important that a group is not only cohesive but also committed to the goals they were created to achieve. Lastly, periods of conflict are frequent but brief, this is important to note since it shows that conflict is present at all stages of development and that the main key is having effective strategies to deal with the conflict (Wheelan, 2005). This stage is a very important stage since it highlights the characteristics of a group that is fully developed and hence functioning effectively. In this study, there is a subscale which measured productive work behaviours and task-focused behaviours of group members, it is called the group work scale.

The fifth and final stage is the termination stage and is based upon the fifth stage added to Tuckman's theory by Tuckman and Jensen (1977) called the adjourning stage. Wheelan (2005) explains that whether planned or unplanned, impending termination causes disruption in a group. According to Wheelan (2005) this stage in group development has received very limited attention. There are a number of characteristics that are present in stage five groups and these can potentially be used as warning signs to determine the general feelings within the group. Wheelan (2005) explains that group members know that the group will be ending soon, their ability to manage conflict may decrease and members may discuss ways to continue the group beyond the expected ending. Sarri and Galinsky (as cited in Smith, 2001, p.23) highlight four reasons why groups may terminate, they are: 1) the group has accomplished its goals and is therefore no longer needed, 2) the group was planned to exist for a specific period of time, 3) groups could fail and die due to a lack of integration and lastly 4) groups could disband due to maladaptation which results when groups cannot manage internal changes or environmental fluxes. These four highlight that a group at the final stage is definitely going to end. This is not necessarily true since a group could enter the fifth stage because they have completed the present tasks required of them and are still awaiting new work and so are dealing with the reality of renegotiating their identity and the possibility of ending. This indicates the relevance of cyclical models to Wheelan's Integrative Model of Group Development. Hare (2003, p.131) "suggests that the fifth phase is actually a return to the same processes found in phase 1, since group members redefine the situation to consider its implications for them as individuals if they are to take their separate ways or to begin a new task if the group is to remain together". This indicates that the shared mental models acquired would no longer be shared throughout the group at this stage due to the uncertainty within the group with regards to the future of the group. Work activity may increase or decrease abruptly and feelings of solidarity may increase (Wheelan, 2005). In essence, the group becomes uncertain and unpredictable due to the expected change. This stage gives an indication of how the members view the groups' present viability and is useful since it helps to determine whether a group is heading towards a crisis or serious change by assessing the perceptions and behaviours of the group.

The theory that was discussed here was Wheelan's Integrative model of Group Development. It is comprehensive and provides a framework from which characteristics of a fully functioning group can be determined, but on top of that it allows for the ability to determine how to examine the degree to which a group is fully functioning. The literature surveyed highlighted desirable and undesirable work habits in groups and how the behaviours of members of a group lead to the qualitative changes in stages of group development.

2.8 Gersick's Punctuated Equilibrium Model

So far, the literature review has tended to dwell more on the Integrative Model of Group Development developed by Wheelan in 2005 and has not yet explored alternative models of group development. Gersick's Punctuated Equilibrium Model has often been considered the antithesis of the sequential models of group development such as Tuckman's stages and Wheelan's integrative model. This model draws on punctuated equilibrium theories in biological evolution and group development that emphasise revolutionary rather than incremental change (Arrow, 1997). This section will explain Gersick's model and discuss how it relates to the scale being developed. Gersick (1988) found that teams used widely diverse behaviours to do their work, however, the timing of when the groups formed, maintained, and changed the way they worked was highly congruent. Furthermore, every group exhibited a distinctive approach to its task as soon as it commenced and stayed within

that approach through a period of inertia that lasted for half of the allotted time, thereafter every group underwent a major transition (Gersick, 1988). This transition resulted in dramatic progress being made, since the groups would drop old patterns, reengage with outside supervisors and adopt new perspectives towards their work. This resulted in groups adopting a new approach towards their tasks which helped them through a second major phase of inertial activity, where they would execute the plans they created at the transition (Gersick, 1989). A fundamental observation made by Gersick (1988) was that all the groups made the transition at the same point in their calendar, which was precisely halfway between their first meeting and their official deadline. Gersick (1988) termed the temporal periods, 'phases' and argued that they emerged as bounded eras within each group. These eras were not composed of identical activities across groups and did not progress hierarchically as do the linear progressive models (Gersick, 1988). The Punctuated Equilibrium Model understands groups as systems that progress through long periods of inertia, interspersed by concentrated and revolutionary periods of change (Gersick, 1988). Arrow (1997, p.78) explains that "...in this model, the group structure is characterised by strong inertial forces that generate a stable equilibrium which is punctuated by periods of sudden and rapid change". During these periods of revolutionary change the systems' directions are formed and reformed (Gersick, 1988). The design of the subscales in this study followed some aspects of this approach to groups in that the instrument is not scored cumulatively to get the sum total of all the subscales. This was done in cognisance of the fact that there are qualitative changes in the stages and not quantitative progression in stages. This is in line with Gersick's (1988, 1989) argument that groups do not necessarily follow a rigid pattern of growth or retrogression. The group's growth can be dynamic.

Having outlined the research conducted by Gersick, the key findings and how they developed into theory, it would be necessary to summarise the crux of Gersick's theory. Gersick (1988,

1989) explains that there are two phases. Phase one is the first half of the groups life span or calendar time, this is characterised by an initial period of inertial movement. Prior to the second phase occurring, at the midpoint of the groups' lifespan or calendar time, there is a transition, which sets a revised plan for phase two and a second period of inertial movement. The second phase is characterised by marked acceleration and increased activity, as they finish off the work generated in phase two (Gersick, 1988, Kozlowski & Ilgen, 2006). It can be argued that the group can go through the phases presented in the punctuated equilibrium model each time they have a specific task to accomplish. The idea of a lifespan is debatable but it should be indicated that groups work on multiple projects or towards specific targets over a longer period of time and the period of productive work should mark the lifespan of the group. The importance of the first meeting or phase cannot be stressed enough, since it had the power to display the behaviours and themes that dominated the first half of the group's life. Habitual routines develop quickly within groups, and are hard to change later on (Arrow et al., 2004). Each group involved in the research almost immediately formed a framework of givens about its situation and how it would behave, this established framework was followed throughout phase one (Gersick, 1988). Gersick and Hackman (1990) found these established frameworks to play a very influential role in the group processes that transpired throughout the groups' lifespan. Arrow et al., (2004) explains that change can be triggered by either internal or external forces; however group stability is seen as being maintained from within the group. This view is logical since it explains the unpredictability of the environment in which groups function.

Gersick (1991) explains that there are three main components of the punctuated equilibrium paradigm that are fundamental to the understanding of the Punctuated Equilibrium Model of group development. The components are deep structure, equilibrium periods and revolutionary periods (Gersick, 1991). According to Gersick (1991, p.13) "systems with deep

structure share two characteristics: 1) they have differentiated parts and 2) the units that comprise them work, which means they exchange resources with the environment in ways that maintain, and are controlled by, this differentiation". The differentiated parts in groups are the individual members and their ability to interact with the environment allows them to work as per point two. Gersick (1991, p. 15) explains that "deep structure is the set of fundamental choices a system has made regarding the basic parts into which its units will be organised and the basic activity patterns that will maintain its existence". These choices, in relation to work groups, are usually made by the organisation on behalf of the group. Gersick (1991) explains that the activity patterns of a system's deep structure reinforce the system as a whole, through mutual feedback loops and the decisions made earlier on in the groups' lifespan are the most influential. Campbell et al., (2003) explain that groups performing routine tasks tend to become more ordered. One could argue that as a group develops through the first phase; their deep structure pattern would become more routine due to activity patterns that reinforce the behaviours of the group which would create the appearance of a stable or equilibrium period. Lau and Murnighan (1998) agree with the argument that earlier group decisions or actions substantially influence subsequent group processes. This results in punctuational models identifying common choice categories, but allows for infinite variety in individual systems' particular solutions to emerging problems (Gersick, 1991). This differs from the Integrative Model of Group Development which aimed to lay down specific paths and stages of group development. Equilibrium periods and Revolutionary periods have already been discussed above when the Punctuated Equilibrium Model was explained.

This brief explanation of the fundamentals of the Punctuated Equilibrium paradigm provides important insights into the intricacies of Gersick's model and explains why there is not as much detail regarding the group functioning as with the linear progressive models of group development. Chang et al. (2003) disagree with the popular notion that Gersick's (1988) Punctuated Equilibrium Model is a direct challenge to the stage models of group development. Chang et al. (2003) argue that the punctuated equilibrium model and the integrative model complement rather than contradict each other, since it is possible that the Integrative Model of Group Development describes the micro-level changes within each 'phase' of inertia as described by Gersick. To continue along this line of thought, the Integrative Model of Group Development argues that there is only a loose boundary between the first two stages and the second two stages. Stage one and two tend to co-occur to form phase one of the Punctuated Equilibrium Model. Stage three and four tend to co-occur to form phase two of the Punctuated Equilibrium Model (Chang et al., 2003). This indicates that it is possible that a transition marks the shift of a group's behavioural pattern from a phase in which the first two stages dominate towards phase two where the second two stages dominate (Chang, et al., 2003). Lau and Murnighan (1998) explain that some groups go through the stages in a nonlinear or iterative manner and some groups do not even experience all of the stages. This challenges Chang et al.'s (2003) argument, that the two models are complimentary. This could be explained by Arrow et al., (2004)'s argument that how groups and their members construct time influences the manner in which groups handle temporal matters. A group could experience the stages of group development very differently based on how they construct time and approach their tasks as a result. Tuckman, Hare, Mcgrath, and Poole (as cited in Gersick, 1988) all make a very important point when they say that most models of group development offer snapshots of groups at different points in their lifespans but says very little about the mechanisms of change. This is especially relevant for the punctuated equilibrium model, since although it provides a neat explanation of group development, it does not go into much detail as to how the group changes and what changes in the group as time progresses. This is why the explanation by Chang et al., (2003) that the Integrative Model of Group Development compliments the Punctuated Equilibrium Model is useful, since it provides the detail needed to make Gersick's model complete. Dennis et al.,
(2008) attempted something similar to Chang et al., (2003) when they developed a model of group development that combined Tuckman's model with Gersick's model. As a result, the characteristics of each of the snapshots are informed by the integrative model of group development. This section has shown how Gersick's punctuated equilibrium model is complimentary to the Integrative Model of Group Development. The next section will discuss Tuckman and Jensen's 1977 model of group development.

2.9 Tuckman and Jensen's Model of Group Development

Tuckman and Jensen (1977) explain that Tuckman's model of group development is applicable to various group settings over time and consists of four stages namely: forming, storming, norming and performing (Chou & Garcia, 2011). The fifth and final stage labelled adjourning was introduced by Tuckman and Jensen in 1977. This stage specifically dealt with the ending of a group and was introduced primarily because of the emphasis placed on termination as an important final stage that was overlooked by pioneers of small group research (Tuckman & Jensen, 1977). Tuckman (1965; Miller, 2003) explains that groups have two primary foci, which are socio-emotional structure and task activity. According to Smith (2001) Tuckman's model can be considered a linear progressive model, since each stage implies an increased degree of maturity and performance. The model is based on a thorough review of the group development literature by Tuckman (Tuckman, 1965; Smith, 2001) and can be considered to represent the basic elements underlying virtually all stage models of group development (Kozlowski & Ilgen, 2006).

The first developmental stage is a period of time, which has no specific duration, during which the group members will meet in order to become acquainted to each other and the tasks that the group needs to perform (Smith, 2001). "Boundary testing is when individuals

actively attempt to define the task, while at the same time work to establish an identity within the group" (Smith, 2001, p. 19). This process is very important since it determines the identity that the individual will adopt for much of the groups remaining lifespan and will be related to the knowledge and skills that the individual can contribute towards the groups' present tasks and structure (Smith, 2001). Smith (2001) explains that during this stage of a group development, the members are attempting to establish what needs to happen, why it needs to happen and how it can happen effectively. These are important questions for individuals who find themselves in a novel situation since they are shrouded by uncertainty. Miller (2003) explains that groups at the forming stage are involved in evaluating the interpersonal relationships and norms within the group, with the primary goal of establishing where they fit in to the picture. Hackman (1987) explains that group interaction provides a platform upon which multiple purposes are played out and these can have both a positive and negative impact on the groups functioning, group interaction provides information regarding how well the group is proceeding with work as well as the extent of group synergy. Task activities are approached with the aim of identifying the nature and boundaries of the task and to determine what is required for successful completion of the task (Tuckman, 1965; Miller, 2003).

Storming is the second stage of group development in Tuckman's model, it is characterised by intra-group conflict and hostility, which arises as a result of increased displays of autonomy by members and leadership struggles (Miller, 2003). Gajda (2004) emphasises that as the group integration and personal involvement increases within the group, conflict is an inevitable outcome that needs to be acknowledged as normal and expected, but also dealt with effectively. Miller (2003) explains that individuals at stage two may resist task demands by considering the task to be a burden on the team and its members, however it is argued that this is less visible in groups where the task are of an impersonal or intellectual nature such as work groups (Tuckman, 1965). Tuckman (1965) explains that the hostility often arises as an attempt to hold on to their individuality and as a result the formation of group structure is resisted, this can cause interactions to be uneven and infighting to occur regularly. Levasseur (2011, p. 207) "identifies three primary sources of conflict namely; the natural evolution of the group, disruptive people and differences in personality types". This links to Tuckmans' explanation that individuals expressing their individuality would cause conflict. Further it also demonstrates that there is a certain point in a groups lifespan when they are most likely to encounter conflict and according to Tuckman's model it will be at stage two, however one could argue that this stage two or encounter with conflict could occur at any time in the groups lifespan when one of the three abovementioned causes arises. When this conflict does arise it is important to ensure that it is dealt with and not pushed under the rug (Levasseur, 2011). Tuckman (1965) emphasises that the lack of unity is the key characteristic of this stage. Levasseur (2011, p.208) explains that "people support what they help to create"; this is fundamentally important advice to achieving successful resolution of Tuckman's storming stage.

The norming stage is the third stage in Tuckman's model; this is where interpersonal activities revolve around increasing the cohesiveness of the group and defining member behaviour to ensure that it aligns with the needs of the group (Miller, 2003). Tuckman (1965) explains that at the third stage, group members are accepting of the group and they acknowledge the unique individuality of their fellow members, this results in the group becoming an entity that the members desire to maintain and as a result the members attempt to establish new group-generated norms that are better suited to the group and are more likely to ensure its continued existence. Levasseur (2011) discusses the importance of establishing ground rules in a group to ensure it functions effectively, these ground rules have been compared to the norms that are established at stage three of Tuckman's model. Gadja (2004)

explains the importance of discussion within a group since it enable the group members to gain a clearer picture of members as well as the external contributors to the group and further it highlights the importance of a collaborative effort. Tuckman (1965) reiterates the importance of harmony at this stage, which results in task conflict being avoided.

The fourth stage is the performing stage, at this stage a subculture develops where members work together effectively and efficiently. There is minimal emotional interaction and group members are task focused, which involves an increased emphasis being placed on problem solving where necessary (Miller, 2003). In the seminal article Tuckman (1965) considered this the final stage of group development, since by this point the group will be fully functioning. At stage four, role structure has been resolved and as a result can now be considered a tool that can assist the group in completing its tasks and reaching its goals (Tuckman, 1965). This results in "the group becomes a 'sounding board' off which the task is 'played'"; each member is a player with unique skills that can be utilised to assist in task completion (Tuckman, 1965, p. 70). Enabling work groups in the South African context to be able to function at the fourth stage of group development is an important consideration. In order to achieve this one needs to take into consideration the issues that arise within the South African context, the key one here is diversity. Clayton (2002) explains that diversity is actually a global phenomenon that does not affect South Africa alone. This indicates that it is in fact not a major concern within the South African context and this is part of the reason why we did not include demographic variables within our study. Tuckman (1965) explains that this stage is identified by a noticeable increase in solutions being found, this is as a result of the constructive attempts made towards the successful completion of tasks.

The fifth and final stage is the adjourning stage, which was added by Tuckman and Jensen (1977) as a result of a second review of the group development literature. There are a number

of occurrences at this stage, the group is disbanding and as a result increased attention is given to wrapping up activities, along with that there is a split amongst the group members around their feelings regarding the end of the group, some are happy and others are not (Miller, 2003). This stage is considered to be relevant in groups that are in the process of ending and so is considered a less important stage compared to the other four (Miller, 2003). The model proposed by Tuckman is fundamentally important because Wheelan relied heavily on it in the development of the Integrative Model of Group Development. It helps to explain the logic used by Wheelan (2005) in the model and provides insight into the structure of the model. The next section will briefly explain Bushe and Coetzer's (2007) model.

2.10 An Integrative Theory of Group Development for Task Groups

Bushe and Coetzer (2007) considered the group development literature to be misunderstood in many organisational studies. They attempted to reconceptualise group development and related theories with the intent of making it applicable to task groups. The model, which is named, for ease of referral, the "Integrative Theory of Group Development" is considered to consist of two phases which are membership and competence (Bushe & Coetzer, 2007). They argue that there "…has been a tendency in the group development literature relating to pay more attention to the content of each stage of any particular theory and less attention to the underlying logic of development in each theory" (Bushe & Coetzer, 2007, p. 187). There is very little written on the Integrative Theory of Group Development for Task Groups since it is so recent and as a result there will be a heavy reliance on the Bushe and Coetzer (2007) article; however it is still relevant to the discussion since it provides insights into how group development can be understood.

The first phase discussed by Bushe and Coetzer (2007) is called the membership phase. It is explained that until group members psychologically join, they are merely a number of

individuals clumped together and as a result cannot be considered a group. A team will only develop if the team members desire to belong to and identify with the group (Bushe & Coetzer, 2007). Group development at this stage is promoted by a disjuncture between what group members perceive the group to presently be like and what they expected to get. This includes their understanding regarding the group in general, their expected role and status as well as how the task is interpreted and dealt with (Bushe & Coetzer, 2007). This is contrary to other group development theories that assume conflict will always be the resulting outcome arising from the abovementioned disjuncture (Bushe & Coetzer, 2007). The membership phase can be considered the equivalent of the forming and norming stages in Tuckman's (1965) model. Bushe and Coetzer (2007) argue that as groups work through the phase of membership, issues resulting in conflict are likely to occur, but this does not mean that if a group does not experience conflict it will not develop, since it is not the conflict itself but rather the resulting psychological membership that allows for development. When team roles are assigned externally based on functional expertise and external authority, it is expected that there will be less conflict required to resolve the membership issues (Bushe & Coetzer, 2007).

The second phase is the competence phase which is characterised by the ability of group members to work together which requires the development of a governance structure that surfaces issues of concern to the group (Bushe & Coetzer, 2007). This governance structure could be considered the equivalent of Gersick's (1988) midpoint meeting that results in the transition from phase one to phase two. In this second phase, the group members turn to requirements that the group has to fulfil and make judgements relating to the groups' efficacy (Bushe & Coetzer, 2007). This second phase is considered the equivalent of the norming and storming stages in Tuckman's (1965) model (Bushe & Coetzer, 2007). Members concern with regards to how the group will accomplish its tasks and goals is considered to be the key

concern of the competence phase and successful completion of this phase results in members displaying positivity towards the self-efficacy of the group and being satisfied with the groups accomplishments (Bushe & Coetzer, 2007). It is important to understand that group development needs to be seen as a journey that is never completed (Bushe & Coetzer, 2007). This is fundamental to the understanding of the relationship between group development theories and behaviour under various constraints.

This implies that groups can revert to previous stages of group development and as a result group development cannot be considered a purely progressive process because groups can relapse or regress. This indicates that it would be possible to box the stages into sub scales that would be able to determine the present state of a group as identified by the stages of development. This is further supported by Bushe and Coetzer (2007) who explain that when the groups' environment or tasks change then issues of group competence need to be renegotiated. This theory was primarily addressed to help explain how the developmental theories can be understood. It highlights how group members acquire relevant skills and go through emotional states as a result of being associated with a particular group. Further, it is important to indicate how groups can go through the developmental stages in a cyclic mode that resemble human stages of development in which a child is born, grows up, matures, gets old and becomes like a child again before eventually dying.

This research aimed to design a scale of group functioning that has five subscales, each of which is based upon Wheelan's five stage of group development and addresses a different element of group functioning. The theories addressed in this study were included because they are popular and form the foundation upon which an understanding of group functioning can be built. This is important since it shows that there is a common thread throughout the group development literature despite the many different theories. The last theory was

fundamentally important because of its emphasis on the concepts of expectations and regression. The link between group development and group functioning is very important since it is the crux of this research. The key idea to take from the above discussion on the matter is that as a group develops, it is expected to function better. The standalone nature of the subscales is important since it demonstrates the fact that although development theories often emphasises the idea of linear progression, the more recent development theorists such as Bushe and Coetzer (2007) and Kozlowski and Ilgen (2006) do not shy away from the notion that the extent of group development and therefore group functioning, can be captured at a specific point in time.

2.11 Scale development and validity

Developing sound scales is a difficult and time-consuming process (Hinkin, 1995). Foxcroft, Paterson, Le Roux, and Herbst (2004) as well as Paterson and Uys (2005) argue that it is fundamentally important to ensure that any newly developed tests meets the requirements of validity, reliability, relevance, cross-cultural applicability and that it is used in an unbiased and fair manner in accordance with legislation. According to Truter (2012) the new amendments to the employment equity act require psychometric tests to adhere to the following requirements:

- "Shown to be scientifically valid and reliable
- Can be applied fairly to all employees
- Is not biased against any employee or group
- Only psychometric tests that are certified by the Health Professions Council of South Africa, or another body which is authorised to certify such tests, may be used."

Face validity is tested by determining whether the scale looks right and whether it asks the right questions in relation to what it is trying to measure (Bland, 2002). When establishing the face validity of a scale, it is important to consider the comprehensibility of the items as well as their relevance to the construct being measured (Neff, 2003). Content validity is tested by determining whether it adequately assesses the domain of interest (Bland, 2002; Hinkin, 1995). It is also necessary to check that there is no redundancy between the items (Yoo & Donthu, 2001). Criterion-related validity tests the relationship between the measure in question and another independent measure (Hinkin, 1995). Construct validity is concerned with the relationship between the measure and the underlying attributes it is attempting to assess (Hinkin, 1995). A cronbach's alpha is a very useful measure of the internal consistency of the scale, which asks whether the items that make up the scale are related to each other (Bland, 2002). Hinkin (1995) explains that internal consistency also refers to the extent to which item responses correlate with the total test score. Schwab (1980, as cited in Hinkin, 1995) states that there are three basic stages in the development of measures, they are; "Stage 1 is item development, or the development of individual items. Stage 2 is scale development, or the manner in which items are combined to form scales. Stage 3 is the scale evaluation or the psychometric examination of the new measure" (p.969). It is important to take into consideration the complexity of scale development to ensure that the scale is designed and validated properly. This study incorporated these factors in the development of the instrument that was designed to measure group functioning.

2.12 Conclusion

The design and validation of a scale is a complex and time consuming task, which requires extensive review of the available literature. The need to identify all possible criterions relevant to the area under examination is vital. The concept of group development is a broad area that interacts with many different areas relating to groups. Group development attempts to explain group functioning by introducing a sequential element to the process, which as Bushe and Coetzer (2007) argue does not attempt to describe what happens to a group over time, but instead describes a path taken by groups that reach superior levels of team functioning. This level of superior group functioning has been understood in a variety of ways, for example some explain it as group effectiveness, others as group performance and lastly some consider it merely to be a function of group productivity. The literature discussed above indicates that group effectiveness can be measured by looking at group performance and an important component of group performance is the productivity of the group. There are multiple types of validity that need to be assessed for a scale to be considered valid, they were briefly discussed above and how they will be assessed is discussed in the methodology section. A group, for this study is defined as "a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems, and who manage their relationships across organisational boundaries" (Cohen & Bailey, 1997). This leads to the aims of the study which are outlined below and the means by which these aims will be achieved will be discussed in Chapter three which covers the research methodology.

2.13 Aim of Study

The aim of this study was to develop and validate an initial scale to measure group functioning in organisations. The development of the scale was informed by theories of group development. The study sought to develop subscales that looked at stages of group development which are associated with group dependence and loyalty, group conflict, group preparedness for work, work performance and the disband of the group

2.14 Research questions

- Does the scale demonstrate five clear factors each clustered around the five subscales developed?
- 2. Does the developed scales' result agree with the team leaders' perceptions of the groups functioning?
- 3. Does the scale have construct validity?
- 4. Is the subscale on group loyalty stage reliable?
- 5. Is the subscale on group conflict stage reliable?
- 6. Is the subscale on preparation for work stage reliable?
- 7. Is the subscale on work stage reliable?
- 8. Is the subscale on termination stage reliable?

Chapter Three:

Research Methodology

3.1 Introduction

This section discusses the methodology of the research, which includes the research design, sample, procedure, measuring instruments, statistical analyses and ethical considerations of this study. Since this study was based on developing a scale of group functioning, the subscales used in this study assessed group functioning.

3.2 Research Design

This research adopted a non-experimental design. The research was non-experimental since the research involved no manipulation of participants (Gravetter & Forzano, 2006), but attempts to describe pre-existing groups defined by the organisational structure. The unit of analysis was the group, which means that the entire group constituted one unit (Bless & Higson-smith, 1995). The research approach was descriptive in nature, which means it aimed to present a picture of the specific details of a situation, social setting or relationship between variables (Neuman, 2000). In this study the focus was on a specific social setting, namely groups and their functioning in the workplace. According to Neuman (2000) research begins with a well-defined group of participants. In this case, participants were employees. This was a cross-sectional research design in that participants were assessed at work in one session. The research design was cross-sectional since it observed the groups at one point in time and did not capture social processes or changes as they spontaneously occurred in groups (Neuman, 2000). As a descriptive study, the goal was to provide a detailed and highly accurate picture of group functioning and to identify a set of behavioural indicators in participants` responses that were matched with stages of group development.

3.3 Sample

The sample was made up of 15 work groups drawn from two departments at Liberty Life. The sample for this research consisted of groups of individuals that fulfilled the following three criteria that defined them as a group. The criteria are that the individuals 1) are interdependent in their tasks, 2) share responsibility for the outcomes and 3) are embedded in one or more larger social systems and manage their relationships across organisational boundaries. The study targeted work teams and departments. The sample consisted of 15 work groups. The teams were drawn from the following departments; nine were from the sales department and six were from the sales support department which included a variety of functions such as; legal and compliance, contracting and commissions and debt collections. The sample size of this study, despite being small, was considered reasonable, due to the challenges related to obtaining a sample when conducting group research, and because the group sizes we obtained were similar to those of other researchers, who have looked at groups with varying sizes, the smallest groups consisted of 3 members and the largest groups consisted of 32 members. It can be observed that the average group size in small group research across the different studies was approximately 7 members (Krebs, Hobman & Bordia, 2006; Kuipers, Higgs, Tolkacheva & De Witte, 2009; Wheelan & Williams, 2003; Abdel-Monem, Bingham, Marincic & Tomkins, 2010; Van der Vegt & Bunderson, 2005; Bonito, 2002; Baker, 2001; Lira et al., 2008).

The sampling method used was purposive sampling, since the sample was obtained by requesting organisational access from a specific organisation. The final sample size was 76 individuals whom made up a total of 15 groups. The groups that participated in this study were nine sales teams and six support staff teams. The sales teams are a team of financial advisors who have a contract with their organisation, they need to source their clients, conduct financial needs analyses and sell appropriate financial products to the clients, and

they earn commission. They work in teams that are required to reach specific targets for themselves and for the group. There is interdependence when it comes to ensuring group targets are met, however much of the work can be considered to be completed independently. The support staff are all permanent staff who assist the financial advisors within a variety of different areas. They are salaried employees and work together to meet the demands of the sales teams as required. The main unit of analysis in this research was the group hence the focus was on the group as opposed to the individual. The next section will briefly outline the procedure that was followed.

3.4 Procedure

The starting point for this research was to obtain ethics clearance. To achieve this a proposal was drawn up outlining the rationale for the study, a brief review of the relevant literature, the aims and an explanation of the methodology as well as the relevant ethical considerations and how they would be dealt with. This proposal was then submitted to the School of Human and Community Development ethics committee to determine if the research could proceed. The ethics approval was obtained (Appendix 4). A number of organisations were approached to see if they would be willing to assist in validating the scale by allowing groups within their organisations to participate. An organisation access form (Appendix 5), as well as a participant information sheet (Appendix 6) were attached to each email request that was sent to an organisation asking for assistance with the research. There was one lady who spoke to the head of her organisation and they agreed to assist with providing a sample, they allowed access for me to approach their sales teams as well as their legal and debtors teams. The data collection was done manually through the use of printed questionnaires. A copy of the participant information sheet (Appendix 6) was attached to the front of every questionnaire. I went in person to the different departments with the lady who assisted me to get access. There was only one administration of the questionnaire and only one copy of the

questionnaire for each individual within the groups. We determined the number of people in each of the teams and the team leader. We organised a box for each group and wrote the initials of the team leader on the front of the box as well as each of the questionnaires designated to that group. We handed out the number of questionnaires equal to the number of members in the group to the group members and explained that it was for a master's research project. There was no definite time limit in which they had to complete it but they were informed that they must not discuss the questionnaire with their team members. The reason for not timing the administration of the questionnaires was because the organisation was not willing to give up the amount of time required to do so. Once the questionnaires were complete they were placed back into the box, which was left with the secretary at her desk in the front office of the building they work in. The secretary was made aware prior to the distribution of questionnaires that the research was occurring, what the boxes were for and that they contained confidential information for my eyes only. The questionnaire was 50 questions long and did not identify that there were subscales. The questionnaire asked the participants to answer the questions in relation to the groups they currently work in, with regards to how they consider the group functions presently. Appendix 1 is the questionnaire in the exact format as it was handed out to the organisations' teams. Each set of ten questions is a sub scale as outlined in the measuring instruments section, the questions are ordered accordingly so that the coding process is simplified. The sub scales were not shown in the questionnaire. This was done to reduce the likelihood that participants would determine the structure of the questionnaire and detect that there were subthemes in the questionnaire. The data collection procedures required that each group had to write the initials of the team leader on the front of their questionnaire as a way of identifying which questionnaires formed part of the same group. After data collection, the team supervisors were asked what their opinion was like about group functioning in the organisation in view of the briefing given to the organisation about the purpose of the study before the study began (Refer to Appendix 3).

This background information provided insight into the way teams behaved at work. In total, 150 individual questionnaires were handed out to the sales teams and 50 were handed out to the legal and debtors teams. Only fully completed questionnaires were used in this study, resulting in 76 questionnaires. The overall response rate was 33.5%.

3.5 Measuring Instrument

A questionnaire with five subscales was developed for the purpose of this study. The questionnaire was designed following guidelines of the behaviours of groups at various stages of development using Wheelan's Integrative Model of Group Development (Wheelan, 2005). The scale was largely based on the theory developed by Wheelan and as a result the items on the questionnaire were adapted from the Integrative Model of Group Development. The content of the questionnaire overlaps with other group development theorists as well, since there is agreement on most of the developmental stages and the behaviours of employees at each stage in most of the models.

The stages of group development were identified and items included in the scale described the behaviours of employees at work. Ten key characteristics at each stage of development formed the test items of the five subscales. This resulted in the scale having five subscales with ten questions each. The scale that was developed to measure group functioning followed a linear model of the stages of group development. The assumption is that groups develop following a path that is created through experiential interaction. Wheelan (2005) points out that having a measure of this kind would significantly speed up the research process by making it unnecessary to employ more labour intensive methods which make it easier to assess real and naturally occurring groups. Campbell et al., (2003) argue that the best measuring instrument to identify what region a social group is in is to ask the participants. The scale was designed to ask for the group member's perceptions regarding the groups'

functioning. Each subscale measured a separate stage of group functioning. The instrument was designed by taking the characteristics of each stage as outlined by Wheelan (2005) and rephrasing them in the form of questions for example "Members in my team are concerned with being accepted, liked and included in the group". All the questions began with "Members in my team..." This ensured consistency of phrasing. In most of the stages, Wheelan (2005) highlights more than ten characteristics, however this study limited the number of characteristics to ten; this was to ensure consistency across the stages, with regard to the number of questions asked. The inclusion of key characteristics of each stage of group was done to make sure that that only the fundamental aspects of group development were captured. This resulted in five distinct subscales each looking at different aspects of group functioning. The subscales that formed the scale that was developed to measure group functioning in this study are described below.

3.5.1 Group loyalty scale

This subscale is based on the characteristics displayed at stage one, as discussed in the literature review. It contained items that attempted to assess the loyalty of members of the group towards their leader, as well as conformity and agreeableness displayed by group members. The test items looked at norms and values that indicated group cohesion. A high score on this subscale indicated high group functioning in terms of loyalty towards the leader and group and it implied high dependency on the leader and group.

3.5.2 Group conflict scale

This subscale was based on Stage Two of group development. This stage is riddled with group conflict and disagreement with the leader. The test items assessed dysfunctional group behaviours that are unproductive. The extent of deviancy was examined as well as the extent

to which group members displayed dissatisfaction with the different matters within the group. A high score on this subscale indicated that the group was not functioning optimally and it indicated that the group needed to resolve the conflict in order for it to grow and make progress.

3.5.3 Group readiness for work scale

This subscale was based on the third stage discussed in the literature review. The test items assessed role clarity, the need for structure to do the work, trust towards group members and interdependence in groups. The level of satisfaction of group members, co-operation and cohesion were assessed. A high score on the subscale indicated high preparedness for work and the desire to achieve organisational goals.

3.5.4 Group work stage scale

This subscale stems from the fourth stage of group development as discussed in the literature review. This is the stage that is expected to be the most productive, effective, efficient and harmonious. The test items looked at prevailing norms in the group and quality driven attitudes within the group. The questions asked the degree of match between individual member's skills and the roles they performed. This scale measured the group's optimal functioning. A high score indicated group functioning and productive work behaviours.

3.5.5 Group termination scale

Lastly, this subscale assessed the final stage of group development as described by most of the group development models. The scale assessed group members` perception of the end of employment, the disbanding of the unit or closure of the company. When a project ends,

employees are redeployed to other units or departments within the organisation or the organisation can retrench employees. The scale also assessed members' perception of their future in the organisation and the future of the organisation in the context of the global unpredictable business environment. A high score on this scale indicated that the group was coming to an end soon and as a result group functioning was not optimal or too good, because the organisation would cease to exist sooner or later.

The subscales were on a 5-point likert-type scale. Refer to Appendix 2 to see the questions for each subscale. The following section looks at the statistical analyses used in this study.

3.6 Statistical Analysis

The primary aim of this study is to test the reliability of the self-constructed scale. The reliabilities of the subscales were validated using Cronbach's Alpha, with the aim of assessing the internal consistencies of the subscales (Bland, 2002). A factor analysis was employed to validate the subscales (Worthington & Whittaker, 2006). An exploratory factor analysis was run to test the construct validity of the scale. The analysis sought to determine what kind of factor structure presented itself in the scale. Discriminant analysis was run to determine whether descriptions of managers about group functioning of teams in the organisation were congruent with team performance on the subscales. This was done to test the concurrent validity. The next section will look at the ethics related to the research.

3.7 Ethics

The nature of the information that was gathered for this research project was not of a sensitive nature which reduced the potential risk to participants. The participants were informed of exactly what was required of them by means of a participant information sheet that included the request to participate in the study (Appendix 6). It also informed the

participants that they would be anonymous and would not be prejudiced by their choice as to participate or not. Their participation in the study was voluntary and all that they needed to do to consent to partaking was to complete the questionnaire. The participant was informed that they had the right to withdraw from the study at any stage if they so wished by not completing the questionnaire. Anonymity of participants was ensured for this study since no identifying information was required for the research to be completed. The choice as to whether they wished to participate was entirely up to them. Their choice did not put them at any prejudice or disadvantage if they chose not to partake. With regards to feedback at the end of the study, the research report will be kept in the library of the University of the Witwatersrand. Participants were informed of the blog in which they could communicate with the researcher during the research process. The blog address was given along with an approximate period by which the research report would be complete (Appendix 5 & 6). Participants were told that only the Supervisor and the researcher will have access to the data gathered for this research. Participants were told that the data will be kept in a secure, password protected computer after the research. Ethics clearance was obtained from the School of Human and Community Development (SHCD) ethics committee (Appendix 3) prior to data collection for this study. This was done to ensure that ethical standards were met.

Chapter Four:

Results

4.1 Introduction

This section will discuss the results found in this study. The final sample size was n = 76 for the individuals and n = 15 for the number of groups. The analyses run were as follows: An exploratory factor analysis, a discriminant analysis looking at the different stages that the supervisors predicted and lastly the cronbach's alpha coefficient for each of the sub scales.

4.2 Factor Analyses

The first analysis to be discussed will be the exploratory factor analysis. According to table 1 there were five factors that were found and they explained 44.496% of the cumulative variance. There are two methods to determine the number of factors to retain when working with an exploratory factor analysis, the first is by examining the eigenvalues and the second is by examining the scree plot (Miller, Acton, Fullerton & Maltyby, 2002). The eigenvalues method of determining the number of factors, suggests that when the eigenvalue is one or more for a factor, that factor should be considered for inclusion (Miller et al., 2002). This method would therefore suggest we take 16 factors. The second method is the scree plot method; the number of factors to retain is determined by selecting those whose eigenvalues occur before the plot straightens out (Miller, et al., 2002). If we look at the scree plot (diagram 1) it appears to straighten out after the fifth factor which means that five factors should be retained, however this is a very subjective measure and therefore opinions regarding how many factors to retain according to this method are likely to differ and therefore it is recommended to combine the eigenvalue method with the scree plot method for best results (Miller et al, 2002). The reason for discussing the methods used in an exploratory factor analysis was to see if the five factors are an accurate representation of what the data says about the factors. This indicates that the five factors predicted have been adequately supported by the data; however this does require further analysis.





Table 1: Exploratory Factor Analysis

Total	Variance	explained
~		

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	11.572	23.143	23.143
2	3.213	6.426	29.570
3	2.811	5.623	35.192
4	2.495	4.990	40.183
5	2.157	4.314	44.496
6	2.042	4.085	48.581
7	1.789	3.578	52.159
8	1.732	3.464	55.623
9	1.547	3.095	58.718
10	1.360	2.721	61.438
11	1.325	2.650	64.088
12	1.261	2.522	66.611
13	1.196	2.393	69.004
14	1.124	2.247	71.251
15	1.041	2.082	73.333
16	1.003	2.007	75.340
17	.936	1.872	77.212

*Extraction Method: Principal Components analysis

The next place to look when analysing a factor analysis is the component matrix. Table 2 contains the factor loadings of each of the variables on the factor, loadings are the strength of each variable in defining the factor (Miller, et al., 2002). The research question asked whether there would be five distinct factors that arise from the factor analysis. This however was not found, since the factor loadings were markedly different, not all of the related questions loaded on the same expected factor, and as a result the expected factor pattern did not arise. There is much debate regarding at which point loadings become important to a factor, however according to Comrey (1973, as cited in Miller et al., 2002) anything above 0.44 can be considered salient, with higher loadings becoming more vital in determining the factor (Miller et al., 2002).

If an item yields a negative factor loading, the raw score of the item is subtracted rather than added in the computations because the item is negatively related to the factor (DiStefano, Zhu & Mindrila, 2009). The component matrix in table two is a rotated component matrix that only shows factor loadings greater than 0.4. This is because any loadings lower than 0.4 are considered to have a minimal effect on the variables (Habing, 2003). A rotation is necessary when extraction techniques suggest there are two or more factors, in this case there were more than two factors and so a rotation is necessary (Miller et al., 2002). The majority of questions, 20 to be precise, load onto factor one, six load negatively. Factor two has ten questions that load onto it, of which one loads negatively. Six questions load onto factor three, and five questions load onto both factors four and five. Factor three, four and five all have one negatively loaded question. There are eight questions that do not load onto any factors and then five questions that cross load onto more than one factor. There is only one question that loads onto a factor higher than 0.7. These results indicate a factor pattern that is different to the clear five factor pattern expected. What the factors could be will be examined in the discussion. There were three other factor analyses run, with different factor patterns

predicted, to see if they would yield a more consistent factor pattern, however this was not the case. The presented component matrix yields the most consistent results despite not aligning with the hypothesis.

Table 2

Subscale –	Component				
Question					
	1	2	3	4	5
1-1					.631
1-2					.619
1-3					
1-4		.536			
1-5	.442				
1-6				606	
1-7					
1-8	.668				
1-9	.529				
1-10	.696				
2-1	624				
2-2	649				
2-3					
2-4				.529	
2-5				.566	
2-6					
2-7	458				
2-8		.507			
2-9	555				
2-10	579				
3-1	.750				
3-2	.459		.445		
3-3					.603
3-4	.547				
3-5			.608		
3-6		.512			
3-7		.571	.515		
3-8	.509	.498			
3-9					

Rotated Component Matrix¹ for Exploratory Factor Analysis with five factors

¹ Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 12 iterations.

3-10	.636				
4-1	.530				
4-2	.536		.425		
4-3					.543
4-4	.558				
4-5		.569			
4-6		.442			
4-7	.621				
4-8			.689		
4-9				.474	
4-10			.669		
5-1					
5-2		425			
5-3				.632	
5-4					
5-5		.652			
5-6	.498	.500			
5-7			473		
5-8					440
5-9	488				
5-10		.618			

4.3 Discriminant Analysis

The second analysis run was a discriminant analysis. This analysis was run to see if the designed scale has concurrent validity with the team leaders' perceptions of the groups functioning. The aim of a discriminant analysis is to classify objects, by a set of independent variables, into mutually exclusive and exhaustive categories (Morrison, 1969). The ideal discriminant analysis would have the majority of groups at the stage which was expected by the supervisor. The discriminant analysis that was run here was run on the individuals, although the focus was on groups. This is possible because the groups were identified and distinct prior to the capturing of the data and so the important factor here is not to keep the groups as the unit but rather the sub scales are what will be the unit of identification. Table 3 provides a summary of the results. The number of individuals that were at stage one as expected by the supervisor was 8 out of a total of 19. The number of individuals at stage three

was 10, which means that groups expected by the supervisor to be at stage one were mostly at stage three. The total number of individuals expected to be at stage two were six and three of those were at stage one and the other three were at stage three. There were 35 individuals in groups expected to be at stage three. There were 29 individuals who considered their group at stage three as expected by the supervisor. Four were at stage one and two were at stage two. There were 16 individuals in groups expected to be at stage one. There were no groups expected to be at stage three, the remaining three were at stage one. There were no groups expected to be at stage five, this will be elaborated on in the discussion.

Table 3

	Supervisor	Predicted	Predicted Group stage according to Group			Total
	Expected		mem	bers		number of
	stage	1	2	3	4	individuals
	1	8	1	10	0	19
Count	2	3	0	3	0	6
Count	3	4	2	29	0	35
	4	3	0	13	0	16
	1	42.1	5.3	52.6	.0	100.0
0/	2	50.0	.0	50.0	.0	100.0
70	3	11.4	5.7	82.9	.0	100.0
	4	18.8	.0	81.3	.0	100.0

Classification Results^a

a. 48.7% of original grouped cases correctly classified.

4.4 Cronbach's Alpha

The last analysis run was a Cronbachs alpha. The aim of the cronbach's alpha was to test the reliability of each of the sub scales to determine whether they can be considered reliable.

Table 4 shows the internal consistency for sub scale 1. The Cronbach's alpha is .568 which is not good enough for the scale to be considered reliable. According to Hinkin (1995) a Cronbach's alpha is acceptable and adequate for use if it is above .70. Table 5 shows the item-total statistics, the most important aspect here is the column that shows the Cronbach's

Alpha if the item is deleted. It is important because sometimes there can be a single item that reduces the Cronbach's alpha substantially. In this case item two improves the Cronbachs alpha from .568 to .597. This however is not enough to improve the scale to make it reliable. The Cronbach's alpha was calculated again with the item two removed, this resulted in the expected alpha of .597 and it indicated that if item one was removed the cronbach's alpha would increase to .657. This is a substantial improvement and so item one was removed and the alpha analysis was rerun. The new alpha was .657 and the removal of item 6 indicated a change in the alpha to .678. Item 6 was also removed and the new results indicated that the removal of any of the other items would not result in a substantial improvement. Table 6 shows the item-total statistics for sub scale one after item 1, 2 and 6 were removed, resulting in a 7 item scale with a Cronbach's alpha of .678.

Table 4

Reliability Statistics Group Loyalty Scale				
Cronbach's	Cronbach's	N of Items		
Alpha Alpha Based on				
Standardized				
Items				
.563	.568	10		

Subscale –	Scale Mean if	Scale Variance	Corrected Item-	Cronbach's
item number	Item Deleted	if Item Deleted	Total Correlation	Alpha if Item
				Deleted
1-1	32.49	16.386	.089	.583
1-2	32.68	17.366	.005	.597
1-3	31.72	16.203	.204	.547
1-4	32.36	14.659	.270	.531
1-5	31.87	15.982	.222	.543
1-6	32.51	16.653	.090	.578
1-7	32.18	15.086	.322	.517
1-8	31.80	13.254	.551	.444
1-9	31.63	15.756	.297	.526
1-10	31.67	13.930	.513	.464

Item-Total Statistics Group Loyalty Scale

Table 6

Item-Total Statistics for Group Loyalty scale with items 1, 2 and 6 removed

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item
				Deleted
1-3	22.43	11.902	.333	.657
1-4	23.07	11.182	.273	.684
1-5	22.58	12.300	.242	.680
1-7	22.89	11.749	.300	.667
1-8	22.51	9.640	.624	.567
1-9	22.34	11.801	.380	.646
1-10	22.38	10.159	.604	.580

Table 7 provides the Cronbach's alpha for sub scale two. The Cronbach's alpha is .569 which is considered unacceptable and as a result it is important to assess the item-total statistics to see if there are any items that can be removed to improve the alpha coefficient.

Reliability Statistics Group Conflict Scale

Cronbach's	ach's Cronbach's		
Alpha Alpha Based on			
Standardized			
	Items		
.542	.569	10	

Table 8 provides information regarding the item-total correlation for the second sub scale. The removal of item 8 in this instance seems to improve the alpha coefficient from .569 to .632. This however is still not enough to reach Hinkin's (1995) level of acceptability. The alpha was recalculated after the removal of item 8 and the outcome was a Cronbach's alpha of .632, upon examining table 9, which results in a 9 item scale, it was shown that the removal of any of the other items would not substantially improve the Cronbach's alpha.

Table 8

Subscale -	Scale Mean if	Scale Variance	Corrected Item-	Cronbach's
Item number	Item Deleted	if Item Deleted	Total Correlation	Alpha if Item
				Deleted
2-1	24.24	14.556	.284	.503
2-2	24.74	13.903	.486	.457
2-3	23.16	14.961	.168	.536
2-4	23.79	14.835	.231	.517
2-5	23.80	14.987	.167	.536
2-6	24.38	14.186	.347	.485
2-7	24.49	14.386	.380	.482
2-8	23.34	17.775	181	.632
2-9	24.14	14.259	.272	.504
2-10	24.08	13.060	.363	.472

Item-Total Statistics Group Conflict Scale

Subscale –	Scale Mean if	Scale Variance	Corrected Item-	Cronbach's
Item number	Item Deleted	if Item Deleted	Total Correlation	Alpha if Item
				Deleted
2-1	20.89	14.975	.294	.609
2-2	21.39	14.215	.516	.564
2-3	19.82	15.192	.203	.633
2-4	20.45	15.184	.252	.618
2-5	20.46	14.838	.255	.619
2-6	21.04	14.838	.319	.603
2-7	21.14	14.765	.398	.588
2-9	20.80	14.801	.264	.617
2-10	20.74	13.396	.381	.586

Item-Total Statistics Group Conflict Scale without item 8

The Cronbach's alpha for the third sub scale is presented in table 10. A Cronbach's alpha of .745 is considered acceptable and so this scale can be considered internally consistent. According to table 11 if item 3 is removed then the alpha coefficient changes from .745 to .804 which would be a good improvement. Table 12 shows the item-total statistics for the 9 item scale, which indicates that removing any more items would not improve the Cronbach's alpha sufficiently.

Table10

Reliability Statis	Reliability Statistics Oroup Redainess for Work Searc				
Cronbach's	Cronbach's	N of Items			
Alpha	Alpha Based on				
Standardized					
	Items				
.710	.745	10			

Reliability Statistics Group Readiness for Work Scale

Subscale –	Scale Mean if	Scale Variance	Corrected Item-	Cronbach's
Item number	Item Deleted	if Item Deleted	Total Correlation	Alpha if Item
				Deleted
3-1	34.58	12.807	.577	.648
3-2	34.62	13.332	.540	.658
3-3	34.87	17.689	189	.804
3-4	34.16	13.975	.509	.667
3-5	34.46	14.278	.462	.675
3-6	34.63	14.369	.446	.678
3-7	34.54	14.785	.420	.683
3-8	34.38	13.546	.541	.660
3-9	35.05	15.171	.241	.708
3-10	34.50	13.240	.503	.663

Item-Total Statistics Group Readiness for Work Scale

Table 12

Item-Total Statistics for Group Readiness for Work Scale without item 3

Subscale –	Scale Mean if	Scale Variance	Corrected Item-	Cronbach's
item number	Item Deleted	II Item Deleted	Total Correlation	Alpha II Item
				Deleted
3-1	31.03	13.519	.538	.780
3-2	31.07	13.769	.552	.777
3-4	30.61	14.562	.494	.785
3-5	30.91	14.751	.472	.788
3-6	31.08	14.580	.510	.784
3-7	30.99	15.266	.430	.793
3-8	30.83	13.717	.607	.770
3-9	31.50	15.347	.306	.809
3-10	30.95	13.357	.571	.774

Table 13 and 14 deal with sub scale 4, table 13 provides the Cronbach's alpha and table 13 provides the item- total statistics. The Cronbach's alpha for sub scale 4 is .8 which is indicative of a good reliability. Table 14 indicates that the removal of any of the items in the scale results in a reduction in the overall coefficient alpha which indicates that it is acceptable and adequate for use, since it is above .70 (Hinkin, 1995).

Reliability Statistics Group Work Scale

Cronbach's	Cronbach's	N of Items		
Alpha	Alpha Alpha Based on			
Standardized				
Items				
.792	.800	10		

Table 14

Item-Total Statistics Group Work Scale

Subscale –	Scale Mean if	Scale Variance	Corrected Item-	Cronbach's
Item number	Item Deleted	if Item Deleted	Total Correlation	Alpha if Item
				Deleted
4-1	34.96	19.452	.532	.766
4-2	34.91	19.071	.622	.755
4-3	35.18	20.952	.354	.787
4-4	35.20	18.614	.549	.763
4-5	35.30	19.814	.420	.781
4-6	34.87	20.836	.550	.769
4-7	35.09	19.925	.632	.758
4-8	35.21	20.435	.468	.774
4-9	35.75	21.177	.283	.798
4-10	35.00	21.680	.318	.790

Tables 15, 16, and 17 present the information for the fifth sub scale. According to table 15 the Cronbach's alpha is .116 which is very low for an alpha coefficient. In table 16 there are four items that substantially increase the alpha coefficient. They are item 5, 6, 9 and 10. Item 5 improves the alpha coefficient from .116 to .286, item 6 improves it to .262, item 9 improves it to .211 and lastly item 10 improves it to .208. We reran the analysis removing items 5, 6 and 10 which yielded a Cronbach's alpha of 0.526. Removing any further items did not improve the alpha sufficiently enough as demonstrated in table 17 which shows the item-total statistics for the 7 item scale.

Reliability Statistics Group Termination Scale					
Cronbach's Cronbach's N of Items					
Alpha Alpha Based on					
Standardized					
Items					
.179	.116	10			

Table 16

Item-Total Statistics Group Termination Scale

Subscale –	Scale Mean if	Scale Variance	Corrected Item-	Cronbach's
nom number				Deleted
5-1	27.86	7.885	.183	.087
5-2	27.68	8.112	.153	.108
5-3	27.25	7.443	.235	.043
5-4	27.87	8.942	.020	.185
5-5	26.70	10.267	232	.286
5-6	26.09	9.765	139	.262
5-7	26.92	7.807	.160	.096
5-8	27.08	7.834	.204	.075
5-9	26.55	8.997	022	.211
5-10	26.36	8.845	011	.208

Table 17

Item-Total Statistics Group Termination Scale without items 5,6 and 10

Subscale –	Scale Mean if	Scale Variance	Corrected Item-	Cronbach's
item	Item Deleted	if Item Deleted	Total Correlation	Alpha if Item
number				Deleted
5-1	16.88	8.212	.362	.443
5-2	16.71	7.835	.468	.398
5-3	16.28	9.323	.116	.549
5-4	16.89	9.269	.215	.504
5-7	15.95	8.824	.198	.514
5-8	16.11	8.335	.350	.449
5-9	15.58	9.367	.145	.532

A Cronbach's alpha was also run for the items that positively loaded onto factor one in the factor analysis to see if there was internal consistency between the items. The result was a

Cronbach's alpha of .902 which is an acceptable result since it is above .7 and therefore indicates reliability (Hinkin, 1995). Table 18 and 19 display the results of this analysis. This analysis was run in addition to the others to see if factor one had an acceptable level of reliability.

Table 18

 ${\it Reliability\ Statistics\ for\ items\ positively\ loaded}$

onto Factor one

Cronbach's	Cronbach's	N of Items	
Alpha	Alpha Alpha Based on		
Standardized			
Items			
.900	.902	14	

Table 19

Item-Total Statistics for items positively loaded onto Factor one

Subscale –	Scale Mean if	Scale Variance	Corrected Item-	Cronbach's
Item number	Item Deleted	if Item Deleted	Total Correlation	Alpha if Item
				Deleted
1-5	51.74	56.410	.335	.904
1-8	51.67	51.344	.639	.892
1-9	51.50	55.747	.431	.900
1-10	51.54	50.705	.765	.886
3-1	51.68	52.059	.699	.889
3-2	51.72	54.469	.544	.896
3-4	51.26	55.156	.566	.895
3-8	51.49	54.200	.607	.893
3-10	51.61	52.295	.683	.890
4-1	51.43	53.182	.589	.894
4-2	51.38	53.039	.633	.892
4-4	51.67	52.330	.565	.895
4-7	51.57	54.142	.668	.891
5-6	51.58	53.394	.628	.892

4.4 Conclusion

The results were overall disappointing since none of the research questions provided any promising outcomes. Sub scales 1, 2 and 5 were particularly bad, whereas the internal

consistencies for sub scales 3 and 4 were acceptable. The factor analysis yielded a very different pattern to what was expected and instead there appears to be a more complex underlying theme. Lastly the discriminant analysis did not find any significant relationship between the supervisors expected stage and the individuals' perceptions of their groups functioning. The next section is the discussion which will link the results displayed here to the theory discussed in the literature review to add greater value to the outcomes of this research.

Chapter Five:

Discussion

5.1 Introduction

The aim of this research was to design a scale to measure group functioning in organisations. The study looked at work teams at a specific point in time. The study validated the group functioning scale using an organisational sample drawn from one company. There were three analyses that were utilised to assess the reliability of the five subscales. The discussion section looks at the interpretation and analysis of findings in line with the research aim of the study.

5.2 The factors and how they can be understood

The expected factor pattern was that there would be five distinct factors that constituted the overall group functioning scale. The aim of the research question was to test the construct validity of the subscales. A factor analysis aims to group questions that appear to be related together to form a group of items which would be called a factor; this factor is then examined to determine whether it makes sense, and if so what it would be labelled (Miller et al., 2002). In this study an exploratory factor analysis was used, which means that the aim is to uncover the underlying structure of the scale (Hayton, Allen, & Scarpello, 2004). The expected pattern was that each factor would be labelled according to one of the subscales and the items for that scale would fall under that specific factor. In this study, that was not the case. Instead, when the exploratory factor analysis was run it was found that the majority of the items loaded onto factor one. This indicated that there was a single factor that stood out considerably within the questionnaire. Statistical analyses were performed to assess the characteristics of the dominant factor.
It is important to take into consideration the sample size when running a factor analysis. According to Habing (2003, p.3) "the rule of thumb is that there should be at least 50 observations and at least 5 times as many observations as variables". In this study there were 50 variables, since each question is considered a variable and the recommended sample size would therefore be five times 50 which results in an ideal sample that would consist of at least 250 individuals even though they were divided into smaller groups. In this study, there were 76 individuals who participated in the study. There is a possibility that the small sample size could have limited the use of factor analysis. However, Habing (2003) explains that a factor can be considered reliable if there are at least 4 or more variables with a loading greater than .6 hence the sample size does not matter. Factor one is the only factor out of the five that manages to achieve this and therefore is the only one which can be considered reliable according to Habing (2003). Since the five factors did not conform to the labels we expected, it is advisable to work with the one factor that does make the most sense to see what exactly it is measuring and then attempt to explain why a single predominant factor was present opposed to the five factor pattern that was expected.

The first factor had 20 items that loaded onto it; six of these were negatively loaded. The majority of positively loaded items were from the group readiness for work and group work subscales. The items loaded to factor one related to goal clarity and consensus, the adjustment of roles and tasks to increase goal achievement, flexible communication structures, group cohesion, commitment, trust and cooperation, respect for and satisfaction with leadership style, planning and problem solving as well as positive feelings towards group members. These all emphasise goal directedness and group member satisfaction or unity. The six items that loaded negatively onto factor one, dealt with conflicting work values, complaining, low performance, anxiety, stress and deviant behaviour. These items appear to be dealing with disgruntled or unhappy group members. Taking into consideration

what the different items are dealing with, it can be argued that factor one could be labelled Group Synergy since the items appear to be measuring the quality of relationships, communication and leadership and the negatively loaded items all look at the extent of disgruntlement amongst group members. According to Furst, Blackburn and Rosen (1999, p. 259) the factors that make up group synergy "reflect the ways in which group members interact to maximise important group outcomes, such as diversity of ideas generated, member involvement and increased group efficiency and productivity". Hackman (1998) explains synergy as state where groups achieve that which none of the individual members could have achieved alone.

According to Miller et al., (2002) the goal of a factor analysis is to make a clear interpretation that either aligns with the theory or just makes common sense. In this case, the factor analysis did not align with the theory, however if the items are examined it is clear that the interpretation does make common sense. A scale that is looking at group functioning and forms five subscales based on group development is likely to have an underlying factor that relates to group synergy, since it would be indicative of an effective and optimal functioning group (Furst et al., 1999; Hackman, 1998). The issue is that, if the theory was correct, then the items forming the factor considered group synergy or an equivalent construct would have been items from subscale three, four or both. This was not entirely the situation since although many of the items were from subscales three and four there were also a number of items from the other three subscales. This does seem to be contrary to the theory however all of the items from subscale two which dealt with conflict were loaded negatively onto factor one and the other items from subscales one and five were very strongly related to the factor identified as 'group synergy'. This relatedness is plausible due to Wheelan's Integrative model being a cumulative stage model that considers each stage to require the acquisition of skills or states as the group progresses (Wheelan, 2005). Although in this research it was taken that each subscale was a specific level of functioning at a specific point in time, the scale was based on Wheelan's model and as a result this could have influenced the outcome as explained above, in that characteristics of each of the subscales could have related to overall group functioning that was expected at subscale four or five. The final outcome of the factor analysis indicates that there is a solid single factor that can potentially be labelled group synergy.

5.3 The reliability of the scales

The reliabilities of the five subscales were run to test the internal consistency of each. There were two scales that were good and three scales that needed some adjustments to obtain a reasonable reliability. The outcome after all the adjustments were made was that there were only two scales that were usable and three that did not have a high enough internal consistency. The reasoning behind this outcome will be discussed.

The group loyalty scale and the group conflict scale will be discussed together. These two scales, even after having items removed, both had a Cronbach's alpha that was below the required 0.7 to be considered sufficiently reliable. A low reliability implies that the variables are not closely related to the other variables in the scale (Higgins, 2005). This means that the items in each subscale need to be assessed, with particular emphasis on the items that were removed. In the group loyalty subscale the items one, two and six were removed. Item one dealt with being accepted, liked and included in the group, item two asked if members feared being rejected by the group and lastly item 6 dealt with whether group members rarely expressed disagreement with the initial group goals. This is a clear indication that these three items are dealing with the issue of acceptance and inclusion within the group. Wheelan (2005) explains that acceptance and inclusion play an important role at stage one and so for the group loyalty subscale it would be important. However, a possible explanation for their

lack of agreement with the rest of the scale could be due to the inability of the group members to be able to successfully identify whether group members needed acceptance and desired to be included; since these are elements that one might not easily pick up as a member of the group. The nature of the groups under observation is also important since the sales teams had very individualistic tasks, which contributed towards a broader branch target. This means that the importance of trust and loyalty to the group is somewhat low when members are able to achieve their goals with moderate independence from the rest of the group.

The second scale was the conflict scale which assessed the level of conflict in the group. The low reliability of this scale could be explained by the fact that members in this organisation could have experienced less conflict. The only item that was recommended to be removed from this scale was item 9 which asked whether the team members were complaining about the organisation. This had a substantial impact on the Cronbach's alpha, changing it from .569 to .632 and this can be explained quite simply by the fact that complaining about the organisation is unlikely to be a contributor towards group conflict, which would still be present even if there was no conflict. Feldman (1984) explains that norms are created to ensure the satisfaction of members. One of the norms could be that group members should not complain about the organisation or any other aspect of the work group. The presence of that norm merely means that complaints will be discouraged but it does not mean that conflict cannot arise due to issues in that area or in other areas relating to the group. The next section will look at subscales three and four.

The third and fourth subscales had the best reliabilities of all the stages and will be discussed together because they could be considered a measure of group functioning just as factor one in the factor analysis was considered to possibly be a measure of a functional group. The interesting observation is that a large number of the questions in factor one came from scales three and four. Scale three had a solid Cronbachs alpha of .745 and if item three is removed it changes to 0.804. Item three asks about the role of the leader as to whether it is more consultative than directive. This item is in line with how Wheelan (2005) conceptualised stage three groups would look, where the leader is more consultative than directive, however according to Cohen and Bailey (1997) research shows that consultative participation did not demonstrate the benefits expected. This means that the role of consultative leadership in the effective functioning of a group is up to debate and would likely depend on the type of group under examination. With regards to the teams that took part in this study, it is likely that leadership style could not have influenced the groups' performance much because of the limited dependence on the leader required for group members to complete their tasks and accomplish their goals. The items that were retained for subscale three relate to goal clarity and consensus, role and task adjustment, flexible communication structure, task focus, conformity, helpful deviation, cohesion, trust, cooperation, division of labour and less conflict. These are all important aspects of a functional group as supported by the group development literature (Wheelan, 2005; Miller, 2003; Smith, 2001). This scale does have items that are in agreement, they are measuring variables that can be considered related and therefore the scale can be considered a reliable measure. However, further analyses would need to be done to determine if it is a valid measure of the extent of group functioning.

The work stage scale was the fourth scale and it was considered reliable without the need to remove any of the items. This indicated that the scale was reliable and it had variables which were related (Higgins, 2005). The items in scale four examined goal and role clarity, task appropriateness, the extent to which members are happy with the leadership, delegation according to their skills and abilities, feedback, planning, problem solving and decision making, innovation, attention to detail, integrated sub groups and utilization of external

resources. The issue that is apparent is the overlap between some of the characteristics that were outlined in subscale three and the ones outlined in scale four. This is not necessarily a problem if it were argued that combining the two subscales could form a scale that could potentially examine group functioning, since these two subscales were based on Wheelan's stages of group development that were the stages when the group performed at their best (Wheelan, 2005).

The fifth scale dealt with the adjournment of a group. The original Cronbach's alpha was very low and the removal of items did not manage to improve the subscale's Cronbach alpha enough to be considered reliable, as stated in the results section. The fifth subscale was based on the fifth stage of group development. The fifth stage of group development has often been considered a far less important consideration in group development, because it is only relevant to groups that are disbanding and as a result this stage is not often measured in research studies investigating Tuckman's model of group development (Miller, 2003). The fifth stage was only added at a later point in time when Tuckman and Jensen (1977) reassessed the literature and found it necessary to include, however originally Tuckman considered the ending of the group to be a part of the fourth stage, namely the performing stage (Tuckman & Jensen, 1977). This can explain why the reliability of this subscale is so low, since none of the groups were close to disbanding; this is reaffirmed by the fact that none of the supervisors rated any of the groups to be at stage five. It is also important to look at the questions that were removed from subscale five to see how they might have negatively impacted on the reliability of the scale; they were items five, six and ten. Item five asked about increased solidarity, item six was about positive feelings towards team members and item ten was whether they discussed what the group had achieved. All three of these items are of a positive and constructive nature. Item six was considered to be in factor one, which was argued to be a high performance scale. Judging from this it makes sense why these three items do not relate to the rest of the scale which deals more with the ending of the group, increased conflict, decreased work activity, issue avoidance, abrupt changes in work patterns and anxiety and stress. These are in complete juxtaposition to the three items which were removed. This is actually what has been theorised to occur at the fifth stage, the conflicting feelings that manifest amongst group members, which can range from positive feelings through to disruption and conflict (Arrow et al., 2004). Due to the unstable nature of stage 5 and its unpredictable nature of group members' reactions, it can be argued that trying to capture this stage would be very challenging as the characteristics displayed would not just be unique to the group but also to each individual within the group. The result is that the termination scale cannot be considered reliable and possible explanations for this have been discussed above.

The last Cronbach's alpha assessed the reliability of the positively loaded items in the factor analysis and it demonstrated a very solid reliability. This is a positive sign since this demonstrates a factor that has loaded items which at face value appear to be measuring optimal group functioning and it is considered reliable. This is a potential area which needs to be studied further and in conjunction with subscales three and four.

5.4 Concurrent validity of the scale

The concurrent validity of the scale was tested through the use of discriminant analysis. It was found that there was not enough agreement between the two sets of responses for there to be concurrent validity. The possible reasons for why this result was found will be discussed here. Cohen and Bailey (1997) posit that in many studies on group effectiveness the survey questions focused on the team members' perceptions of overall group performance but often managers would also be asked for their perceptions. Cohen and Bailey (1997) explain that task characteristics are found to be positively related to manager ratings

of performance and satisfaction. This means that the managers' ratings depend upon the characteristics of the tasks being performed by the group and therefore in the case of this research the supervisors' rating of the groups' performance could be influenced as such. This is one possible explanation for why the majority of the supervisors rating the groups at stage three, since due to the nature of the tasks they complete they do not require extensive interactions and therefore the likelihood of conflict is decreased and the need for loyalty would likely be less influential on the group's ability to perform, since they work more to their own targets that contribute towards the group target.

5.5 Limitations of the Research

There were a number of limitations in this study that will be discussed under this section. This could have been expected since the study focused on the initial validation of the group functioning instrument and not a commercial scale to measure the behaviour of work teams or work groups. The idea of creating a scale to measure group functioning has solid support in the literature (Wheelan, 2005; Wageman, Hackman, & Lehman, 2005) and was a very bold and challenging undertaking due to the challenges related to studying groups (Maloney, Johnson, & Zellmer-Bruhn, 2010; Wheelan, 2005). The first and most influential limitation was the sample size, it was relatively small. However, the sample size was considered as adequate for this study because small group research deals with small numbers of participants in groups (Wheelan, 2005; Krebs et al., 2006).

It is important to note that for every one group, approximately three to seven people would be needed which resulted in a much larger number of people being required to achieve an adequate sample. Larger sample samples are good for statistical analysis (Habing, 2003; Maloney et al., 2010). The sample that participated in this study was made up of work groups that were mostly drawn from the sales teams. The teams worked purely on a commission basis and had targets to reach within their groups and as a result, there could have been limited interaction needed for them to achieve their individual targets. This does not strictly imply that the teams did not interact regularly to achieve organisational goals. Independent functioning does not always result in group dysfunction (Hare, 2010; Wheelan & Williams, 2003).

The use of discriminant analysis could have been done using other tests that measure group functioning but due to the unavailability of already existing alternate measures of group functioning the study used reports from supervisors to perform discriminant analysis.

5.6 Recommendations for Future Research

There are a number of recommendations for future research that would be worthwhile investigating further. The first recommendation would be to conduct a study that examines subscales three and four to see if they might have concurrent validity with a more reliable and properly validated alternate measure of group functioning. This would be worthwhile since the study designed a shorter form of the scale which focused primarily on whether the group was functioning optimally or not.

The next recommendation for future research revolves around the types of groups used, in this study the focus was on sales teams. It would be interesting to test this scale or the adapted above mentioned scale on a sample of senior executives, a project team or a team of administrators. This is because the group dynamics and processes differ according to the type of group under examination (Hare, 2003; Guzzo & Dickson, 1996; Choi, 2002). It would be very interesting to see if the validity of the scale is different when applied to other types of organisational teams.

A third recommendation is to attempt a validation study on a larger sample. The benefits of using a larger sample would be the increased reliability of statistical results obtained. If the size of the groups were also increased then it would allow for analyses to be run within the groups, which was not possible in this study due to the fact that most of the groups were too small to run analyses on individual groups. This has resulted in the tendency by group researchers to use an individual level of measurement when using surveys or creating measures (Maloney et al., 2010).

5.7 Conclusion

The study aimed to establish an initial validation of the group functioning scale that could guide researchers and organisations with an interest in group functioning. The study designed five subscales which were used to measure group functioning. The study recommended that there could be a possibility of creating a scale that could measure group functioning without the use of subscales. The methodological approach to this study enabled it to be of an exploratory nature with the hope of answering specific research questions. Despite the above mentioned limitations, the study has presented some interesting results and has created numerous future research opportunities. The results that were presented did not confirm the majority of the questions asked, which means that further validation studies and possible adaptations of the scale would be required to obtain a more reliable and valid scale that can determine the extent of group functioning. This adapted scale if found to be reliable could be used within organisations to assist them in better understanding their work groups and teams.

The benefits derived from this research could be that the study could prompt other researchers working with small groups and business organisations to consider underlying group processes when making decisions about groups and work teams. The study could open the door to further research within the South African context around the development of a group functioning scale. This could be a starting point in the measurement of group functioning that could ignite the spark and result in the generation of more research output in this area.

Reference List

Abdel-Monem, T., Bingham, S., Marincic, J., & Tomkins, A. (2010). Deliberation and Diversity: Perceptions of small group discussions by race and ethnicity. *Small Group Research*, 41(6), 746-776. DOI: 10.1177/1046496410377359.

Arrow, H., Poole, M.S., Henry, K.B., Wheelan, S., & Moreland, R. (2004). Time, change, and

development: The temporal perspective on groups. *Small Group research*, *35*(1), 73-105.

- Arrow, H. (1997). Stability, bistability, and instability in small group influence patterns. Journal of Personality and Social Psychology, 72(1), 75-85.
- Baker, D.F. (2001). The development of collective efficacy in small task groups. *Small Group Research*, *32*(*4*), 451-474. DOI: 10.1177/104649640103200404.
- Beersma, B., & De Dreu, C.K.W. (2005). Conflict's consequences: Effects of social motives on postnegotiation creative and convergent group functioning and performance. *Journal of Personality and Social Psychology*, *89(3)*, 358-374. DOI: 10.1037/0022-3514.89.3.358.
- Bland, J.M. (2002). Validating scales and indexes. *British Medical Journal, 324 (7337),* 606-607.
- Bless, C., & Higson-Smith, C. (1995). Fundamentals of social research methods: An African perspective (2nd ed.). South Africa: Juta.
- Bonito, J.A. (2002). The analysis of participation in small groups: Methodological and conceptual issues related to interdependence. *Small Group Research*, 33(4), 412-438.DOI:10.1177/104649640203300402.
- Bordia, P., Difonzo, N., & Chang, A. (1999). Rumor as small group problem solving:

84

Development patterns in informal computer-mediated groups. *Small Group Research*, *30*(*8*),8-28. DOI: 10.1177/104649649903000102.

- Bushe, G.R., & Coetzer, G.H. (2007). Group Development and Team Effectiveness: Using cognitive representations to measure group development and predict task performance and group viability. *The Journal of Applied Behavioural Science*, 43(2), 184-212. DOI: 10.1177/0021886306298892.
- Campbell, J., Flynn, J.D., & Hay, J. (2003). The group development process seen through the lens of complexity theory. *International Scientific Journal of Methods and Models of Complexity*, 6(1), 1-33.
- Chang, A., Bordia, P., & Duck, J. (2003). Punctuated equilibrium and linear progression: Toward a new understanding of group development. *Academy of Management Journal, 46*, 106-117.
- Chang, A., & Bordia, P. (2001). A multidimensional approach to the group cohesion-group performance relationship. *Small Group Research*, 32(4), 379-405. DOI: 10.1177/104649640103200401.
- Chang, A., Duck, J., & Bordia, P. (2006). Understanding the multidimensionality of group development. *Small Group Research*, 37(4), 327-350. DOI: 10.1177/1046496406290564.
- Chidambaram, L., & Bostrom, R.P. (1996). Group development (I): A review and synthesis of development models. *Group Decision and Negotiation*, *6*, 159-187.
- Choi, J.N. (2002). External activities and team effectiveness: Review and theoretical development. *Small Group Research*, 33(2), 181-208. DOI: 10.1177/104649640203300202.
- Chou, S.Y., & Garcia, D.C. (2011). Group Organizational Citizenship Behavior in the stages of group development. *International Journal of Business and Management*, 6(10), 3-15. DOI: 10.5539/ijbm.v6n10p3.

- Clayton, W.B. (2002). Measuring perceptions of team effectiveness within the South African police service. *Peninsula Technikon Theses & Dissertations*. Paper 64. http://dk.cput.ac.za/td_ptech/64.
- Clow-Bohan, M. (2011). "They come in wearing their rank": The dynamics of an interprofessional proposal writing team. *Unpublished doctoral thesis for Dalhouse University, Halifax, Nova Scotia.*
- Cohen, S.G., & Bailey, D.E. (1997). What Makes teams work: Group effectiveness research from the shop floor to the executive suite. *Journal of Management*, *23*(*3*), 239-290.
- Davis, A.E., Aldrich, H.E., & Longest, K.C. (2009). Resource drain or process gains? Team status characteristics and group functioning amongst startup teams. *Frontiers in Entrepreunership Research*, 29(11), 1-13.
- Dennis, A.R., Garfield, M., & Reinicke, B. (2008). Towards an integrative model of group development. Indiana University, USA. Sprouts: Working papers on Information Systems, 8(3). Found at: http://sprouts.aisnet.org/8-3
- Devine, D.J., & Philips, J.L. (2001). Do smarter teams do better: A meta-analysis of cognitive ability and team performance. *Small Group Research*, 32(5), 507-532. DOI: 10.1177/104649640103200501.
- DiStefano, C., Zhu, M., & Mindrila, D. (2009). Understanding and using factor scores: Considerations for the applied researcher, *Practical Assessment, Research & Evaluation*, 14(20), 1-11.
- Erbert, L.A., Mearns, G.M., & Dena, S. (2005). Perceptions of turning points and dialectical interpretations in organizational team development. *Small Group Research*, 36(1), 21-58.DOI: 10.1177/1046496404266774.
- Feldman, D.C. (1984). The development and enforcement of group norms. *Academy of Management Review*, 9(1), 47-53.

- Foxcroft, C., Paterson, H., Le Roux, N., & Herbst, D. (2004). Psychological assessment in South Africa: A needs analysis: The test use patterns and needs of psychological assessment practitioners. Final Report, Human Sciences Research Council, Pretoria
- Furst, S., Blackburn, R., & Rosen. B. (1999). Virtual team effectiveness: A proposal research agenda. *Info Systems Journal*, 9, 249-269.
- Gajda, R. (2004). Utilizing collaboration theory to evaluate strategic alliances. *American Journal of Evaluation*, 25(1), 65-77. DOI: 10.1177/109821400402500105.
- Gravetter, F.J., & Forzano, L.B. (2006). *Research Methods for the behavioural sciences*. Belmont:Thomson Wadsworth.
- Gersick, C.J.G., & Hackman, J.R. (1990). Habitual routines in the task-performing groups. Organizational Behaviour and Human Decision Processes, 47, 65-97.
- Gersick, C.J.G. (1988). Time and transition in work teams: Toward a new model of group development. *Academy of Management Journal*, *31*(1), 9-41.
- Gersick, C.J.G. (1989). Marking time: Predictable transitions in task groups. *The Academy of Management Journal*, 32(2), 274-309.
- Gersick, C.J.G. (1991). Revolutionary change theories: A multilevel exploration of the punctuated equilibrium paradigm. *The Academy of Management Review*, *16*(1), 10-36.
- Group. 2012. In *Merriam-Webster.com*. Retrieved May 25, 2012, from <u>http://www.merriam-</u>webster.com/dictionary/group
- Guzzo, R.A., & Dickson, M.W. (1996). Teams in Organizations: Recent research on performance and effectiveness. *Annual Review of Psychology*, 47, 307-338.

Habing, B. (2003). Exploratory factor analysis. Website:

http://www.stat.sc.edu/~habing/courses/530EFA.pdf (accessed 10 January 2013).

- Hackman, J.R., & Wageman, R. (2005). A theory of team coaching. Academy of Management Review, 30(2), 269-287.
- Hackman, J.R. (1998). Why teams don't work. In Tindale, R.S., Heath, L., Edwards, J.
 Posavac, E.J., Bryant, F.B., Suarez- Balcazar, Y., Henderson-King, E., & Myers, J.
 (Eds), *Theory and Research on Small groups* (pp.245-267). New York: Plenum.
- Hackman, J.R. (1987). *The design of work teams*. In J. Lorsch (Ed.), Handbook of organizational behaviour (pp. 315-342). Englewood Cliffs, NJ: Prentice-Hall.
- Hare, A.P. (2003). Roles, relationships, and groups in organizations: Some conclusions and recommendations. *Small Group Research*, *34*(2), 123-154. DOI: 10.1177/1046496402250430
- Hare, A.P. (2010). Theories of group development and categories for interaction analysis. *Small Group Research*, *41*(*1*), 106-140. DOI: 10.1177/1046496409359503.

Hayton, J.C., Allen, D.G., & Scarpello, V. (2004). Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods*, *7*(2), 191-205. DOI: 10.1177/1094428104263675

- Higgins, J. (2005). *The radical statistician: A beginners guide to unleashing the power of applied statistics in the real world* (5th ed.) Jim Higgins Publishing
- Hinkin, T.R. (1995). A review of scale development practices in the study of organizations. *Journal of Management*, 21(5), 967-988.
- Ilgen, D.R., Hollenbeck, J.R., Johnson, M. & Jundt, D. (2005). Teams in Organizations: From Input-Process-Output Models to IMOI models. *Annual Review of Psychology*, 56, 517-543.

Kozlowski, S.W.J., & Ilgen, D.R. (2006). Enhancing the effectiveness of work groups and

teams. Psychological Science, 7: 77-124.

- Krebs, S.A., Hobman, E.V., & Bordia, P. (2006). Virtual teams and group member dissimilarity: Consequences for the development of trust. *Small Group Research*, 37(6), 721-741. DOI: 10.1177/1046496406294886.
- Kuipers, B.S., Higgs, M.J., Tolkacheva, N.V., & de Witte, M.C. (2009). The influence of the Myers-Briggs Type Indicator profiles on team development processes: An empirical study in the manufacturing industry. *Small Group Research*, 40(4), 436-464. DOI: 10.1177/1046496409333938.
- Lau, D.C., & Murnighan, J.K. (1998). Demographic diversity and faultlines: The compositional dynamics of organisational groups. *The Academy of Management Review*, 23(2), 325-340.
- Lawler, E.J., Thye, S.R., & Yoon, J. (2000). Emotion and group cohesion in productive exchange. *American Journal of Sociology*, *106(3)*, 616-657.
- Levasseur, R.E. (2011). People skills: Optimizing team development and performance. *Interfaces*, *41*(2), 204-208. DOI: 10.1287/inte.1100.0519.
- Lira, E.M., Ripoll, P., Peiro, J.M., & Zornoza, A.M. (2008). The role of information and communication technologies in the relationship between group effectiveness and group potency: A longitudinal study. *Small Group Research*, 39(6), 728-745. DOI:10.1177/104696408323481.
- Maloney, M.M., Johnson, S.G., & Zellmer-Bruhn, M.E. (2010). Assessing group-level constructs under missing data conditions: A Monte Carlo simulation. *Small Group Research*, 41(3), 281-307. DOI: 10.1177/1046496410363829.
- Meneses, R., Ortega, R., Navarro, J., & De Quijano, S.D. (2008). Criteria for assessing the level of group development (LGD) of work groups: Groupness, Entitativity, and Groupality as theoretical perspectives. *Small Group Research, 39 (4),* 492-514. DOI: 10.1177/1046496408319787.

- Miller, D.L. (2003). The stages of group development: A retrospective study of dynamic team processes. *Canadian Journal of Administrative Sciences*, 20(2), 121-134.
- Miller, R.L., Acton, C., Fullerton, D.A., & Maltyby, J. (2002). SPSS for Social Scientists (1st ed). Hampshire: Palgrave- Macmillan.
- Morrison, D.G. (1969). On the interpretation of discriminant analysis. *Journal of Marketing research*, *6*, 156-163.
- Neff, K.D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2,* 223-250. DOI: 10.1080/15298860390209035.
- Neuman, W.L. (2000). *Social research methods: Qualitative and quantitative approaches*. Toronto: Allyn and Bacon.
- Paterson, H., & Uys, K. (2005). Critical issues in psychological test use in the South African workplace. South African Journal of Industrial Psychology, 31(3), 12-22.
- Peterson, E., Mitchell, T.R., Thompson, L., & Burr, R. (2000). Collective efficacy and aspects of shared mental models as predictors of performance over time in work groups. *Group Processes & Intergroup Relations*, 3(3), 296-316.
- Smith, G. (2001). Group development: A review of the literature and a commentary on future research directions. *Group Facilitation: A Research and Applications Journal*, *3*, 14-45.
- Stempfle, J., Hubner, O., & Badke-Schaub, P. (2001). A functional theory of task role distribution in work groups. *Group Processes & Intergroup Relations*, 4(2), 138-159.
- Stout, R.J., Salas, E., & Carson, R. (1994). Individual task proficiency and team process behavior: What's important for team functioning? *Military Psychology*, 6(3), 177-192.

- Truter, J. (2012). Impact of amendments to the employment equity act. Retrieved 12 January 2013, from, http://www.labourwise.co.za/labour-articles/ee-act-impact.
- Tuckman, B.W. (1965). Developmental sequences in small groups. *Psychological Bulletin,* 63(6), 384-399.
- Tuckman, B.W., & Jensen M.A.C (1977). Stages of small-group development revisited. *Group & Organization Studies*, 2(4), 419-427.
- Van der Vegt, G.S., & Bunderson, J.S. (2005). Learning and performance in multidisciplinary team: The importance of collective team identification. *The Academy of Management Journal*, 48(3), 532-547.
- Wageman, R., Hackman, J.R., & Lehman, E. (2005). Team diagnostic survey: Development of an instrument. *Journal of Applied Behavioural Science*, 41(4), 373-398. DOI: 10.1177/0021886305281984.
- Wheelan, S.A. (2005). Group Processes: A developmental perspective. Pearson education: USA.
- Wheelan, S.A. (2009). Group size, group development, and group productivity. *Small Group Research*, 40(2), 247-262. DOI: 10.1177/1046496408328703.
- Wheelan, S.A., & Tilin, F. (1999). The relationship between faculty group development and school productivity. *Small Group Research*, 30(1), 59-81. DOI: 10.1177/104649649903000104.
- Wheelan, S.A., & Williams, T. (2003). Mapping dynamic interaction patterns in work groups. *Small Group Research*, *34*(*4*), 443-467. DOI: 10.1177/1046496403254043.

Worthington, R.L., & Whittaker, T.A. (2006). Scale development research: A content analysis

and recommendations for best practices. *The Counselling Psychologist*, *34*(6), 806-838. DOI: 10.1177/0011000006288127.

Yoo, B., & Donthu, N. (2001). Developing and validating a multidimensional consumerbased brand equity scale. *Journal of Business Research*, 52, 1-14.

<u>Appendix 1:</u> <u>Questionnaire for Organisational Sample</u>

Please do not discuss this questionnaire with your group members until such time as all the members, who have agreed to participate, have completed the questionnaire. Please indicate on a scale of 1 to 5, the extent to which you agree with the statements below. Where 1 = Strongly Disagree and 5 = Strongly Agree.

1. Members in my team are concerned with being accepted, liked and included in the group.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

2. Members in my team fear being rejected by the group.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

3. Members in my team communicate in a tentative and very polite manner.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

4. Members in my team depend on the leader/supervisor for guidance and direction in their work.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

5. Members in my team respect the supervisor/leader and they rarely challenge the supervisor/leader's ideas, orders or vision.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

6. Members in my team rarely express disagreement with initial group goals.

Strongly	Disagree	Neutral/unsure	Agree	Strongly Agree
Disagree				

1	2	2	4	F
1	<u> </u>	3	4	5

7. Members in my team rarely deviate from the accepted group practices.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

8. Members in my team believe in group consensus in setting and achieving work goals and targets.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

9. Members in my team have high compliance and they do not question their ability to perform in the roles they are assigned by their leader/supervisor.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

10. Members in my team are cohesive and committed to the group.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

11. Members in my team have conflicting work values.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

12. Members in my team disagree about goals and tasks to be performed.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

13. Members in my team allow dissent or different viewpoints about work.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

14. Members in my team show dissatisfaction with how they are performing.

Strongly	Disagree	Neutral/unsure	Agree	Strongly Agree

Disagree				
1	2	3	4	5

15. Members in my team challenge the leader openly.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

16. Members in my team form subgroups and coalitions that challenge the way employees are managed and work.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

17. Members in my team deviate from standard work practices.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

18. Members in my team take time to resolve conflict.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

19. Members in my team are always complaining about the organisation.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

20. Members in my team are not performing at their optimal level.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

21. Members in my team have goal clarity and consensus.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

22. Members in my team adjust roles and tasks to increase likelihood of goal achievement.

Strongly	Disagree	Neutral/unsure	Agree	Strongly Agree
Disagree				

|--|

23. Members in my team view the leader's role as less directive and more consultative.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

24. Members in my team have a flexible communication structure, which allows free communication amongst members.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

25. Members in my team are task oriented.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

26. Members in my team are willing to conform.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

27. Members in my team tolerate helpful deviation.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

28. Members in my team are cohesive, trusting and cooperative.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

29. Members in my team have greater division of labour.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

30. Members in my team maintain the team structure and there is less conflict.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

31. Members in my team have clarity about group goals and agree with them.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

32. Members in my team are clear about their roles and accept them.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

33. Members in my team view their tasks as appropriate.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

34. Members in my team are satisfied with the leadership style of their leader/supervisor.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

35. Members in my team are delegated to work according to their skills or abilities.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

36. Members in my team appreciate and utilize feedback about team effectiveness and productivity.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

37. Members in my team plan, solve problems and make decisions on work to be done.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

38. Members in my team are innovative and pay attention to detail in their work.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

39. Members in my team have subgroups that are integrated into the group as a whole and work on important tasks.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

40. Members in my team make use of technical expertise and resources outside of the team to accomplish tasks and goals.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

41. Members in my team know that the group will be ending soon.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

42. Members in my team find their ability to resolve conflict is weakening.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

43. Members in my team discuss the future of the group after its designated ending point.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

44. Members in my team have decreased work activity.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

45. Members in my team have increased solidarity.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

46. Members in my team have positive feelings towards team members.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

47. Members in my team avoid problematic issues.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

The development of a scale to measure group functioning

48. Members in my team have recently had an abrupt change in work activities.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

49. Members in my team are experiencing stress and anxiety.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

50. Members in my team discuss what they achieved as a group.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

<u>Appendix 2:</u> <u>Questions grouped according to Sub scales</u>

Group Loyalty Scale

1. Members in my team are concerned with being accepted, liked and included in the group.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

2. Members in my team fear being rejected by the group.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

3. Members in my team communicate in a tentative and very polite manner.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

4. Members in my team depend on the leader/supervisor for guidance and direction in their work.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

5. Members in my team respect the supervisor/leader and they rarely challenge the supervisor/leader's ideas, orders or vision.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

6. Members in my team rarely express disagreement with initial group goals.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

7. Members in my team rarely deviate from the accepted group practices.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

8. Members in my team believe in group consensus in setting and achieving work goals and targets.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

9. Members in my team have high compliance and they do not question their ability to perform in the roles they are assigned by their leader/supervisor.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

10. Members in my team are cohesive and committed to the group.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

Group Conflict Scale

1. Members in my team have conflicting work values.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

2. Members in my team disagree about goals and tasks to be performed.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

3. Members in my team allow dissent or different viewpoints about work.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

4. Members in my team show dissatisfaction with how they are performing.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

5. Members in my team challenge the leader openly.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

6. Members in my team form subgroups and coalitions that challenge the way employees are managed and work.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

7. Members in my team deviate from standard work practices.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

8. Members in my team take time to resolve conflict.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

9. Members in my team are always complaining about the organisation.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

10. Members in my team are not performing at their optimal level.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

Group Readiness for Work Scale

1. Members in my team have goal clarity and consensus.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

2. Members in my team adjust roles and tasks to increase likelihood of goal achievement.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

3. Members in my team view the leader's role as less directive and more consultative.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

4. Members in my team have a flexible communication structure, which allows free communication amongst members.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

5. Members in my team are task oriented.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

6. Members in my team are willing to conform.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

7. Members in my team tolerate helpful deviation.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

8. Members in my team are cohesive, trusting and cooperative.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

9. Members in my team have greater division of labour.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

10. Members in my team maintain the team structure and there is less conflict.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

Group Work Scale

1. Members in my team have clarity about group goals and agree with them.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

2. Members in my team are clear about their roles and accept them.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

3. Members in my team view their tasks as appropriate.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

4. Members in my team are satisfied with the leadership style of their leader/supervisor.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

5. Members in my team are delegated to work according to their skills or abilities.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

6. Members in my team appreciate and utilize feedback about team effectiveness and productivity.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

7. Members in my team plan, solve problems and make decisions on work to be done.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

8. Members in my team are innovative and pay attention to detail in their work.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

9. Members in my team have subgroups that are integrated into the group as a whole and work on important tasks.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

10. Members in my team make use of technical expertise and resources outside of the team to accomplish tasks and goals.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

Group Termination Scale

1. Members in my team know that the group will be ending soon.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

2. Members in my team find their ability to resolve conflict is weakening.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

The development of a scale to measure group functioning

3. Members in my team discuss the future of the group after its designated ending point.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

4. Members in my team have decreased work activity.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

5. Members in my team have increased solidarity.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

6. Members in my team have positive feelings towards team members.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

7. Members in my team avoid problematic issues.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

8. Members in my team have recently had an abrupt change in work activities.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

9. Members in my team are experiencing stress and anxiety.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

10. Members in my team discuss what they achieved as a group.

Strongly Disagree	Disagree	Neutral/unsure	Agree	Strongly Agree
1	2	3	4	5

<u>Appendix 3:</u> <u>Brief description of each stage given to team supervisors</u>

Stage one:

At stage one the group is either newly formed or has had a big change that has resulted in uncertainty. As a result the group will be dependent upon the leader. There will be uniformity and agreeableness amongst members. Norms, rules, roles, values and expectations are still being determined/ spread throughout the entire group. That which has already been agreed upon by the group is likely as a result of amicable agreement opposed to the best possible option. Hierarchy and status play an important role within the group.

Stage two:

This stage is characterised by conflict and disagreement. The conflict will be surrounding a variety of different aspects of the group. The group's members are more likely to be deviant and to openly voice disagreement. There will be a lot more debate regarding the norms, rules, values and expectations and there is likely to be open disagreement with the leader if relevant.

Stage three:

This stage is considered to be a period of integration. At this point the group has clarified the points of contention that were present before. The groups trust and cohesion will be solidified. The group is performing and doing well. However they are not considered a top performing team that is excelling yet. There is room for improvement as they have not yet fully tapped into their potential.

Stage four:

This is the stage where the group is at its best, it is an optimally functioning team that is achieving the top end of the results. They perform very well and all members know exactly what they need to do, why and how. They further agree with the group's norms, rules, values, goals and expectations. They accept the leader. They do what needs to be done to achieve since the group functions smoothly and everyone has the best interests of the group at hand. The group has lots of external support that helps them function effectively. In other words it is the perfect group that is functioning at its best.

Stage five:

The primary indicator of this stage is when a group is either ending or it is changing significantly enough that the whole group will need to renegotiate many of the key aspects of the group. This change can be planned or unplanned but either way it affects the group to the extent that it is noticeable in the behaviour of the group. A group at this stage is likely to begin displaying characteristics of a stage one group.

<u>Appendix 4:</u> <u>Human research ethics committee clearance certificate</u>

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

HUMAN RESEARCH ETHICS COMMITTEE (SCHOOL OF HUMAN & COMMUNITY DEVELOPMENT

CLEARANCE CERTIFICATE	PROTOCOL NUMBER: MORG/12/003 IH
PROJECT TITLE:	The development and initial validation of a scale to measure group functioning
INVESTIGATORS	Bleekers Robin
DEPARTMENT	Psychology
DATE CONSIDERED	10/07/12
DECISION OF COMMITTEE*	Approved

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

DATE: 19 July 2012

cc Supervisor:

CHAIRPERSON K. Cockcroft)

Dr C. Gwandure Psychology

DECLARATION OF INVESTIGATOR (S)

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

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

This ethical clearance will expire on 31 December 2014

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

<u>Appendix 5:</u> Organisational access form



Psychology School of Human & Community Development University of the Witwatersrand Private Bag 3, WITS, 2050 Tel: (011) 717 4500 Fax: (011) 717 4559



Dear Sir or Madam

My name is Robin Bleekers and I am currently conducting a research study for the purposes of obtaining my Master's degree in Organisational Psychology at the University of the Witwatersrand. My research focuses on group functioning.

The research requires groups that consist of between 3 to 15 members and are presently functioning within an organisation. I am attempting to develop and validate a scale of group functioning. In order to do so I need as many groups as possible to participate, so that I can assess the validity. The scale will consist of five subscales, with each subscale looking at a different aspect of group functioning. I would like to request your permission to conduct the research in your organisation.

Participation involves completing a questionnaire and will take approximately 20 minutes. The questionnaire will be handed out in person, to each person within the group. Since the groups need to be identifiable, a code will need to be placed at the top of the form to ensure that the right questionnaires are grouped together.

Participation is voluntary and submission of a completed questionnaire is considered consent. Participants will not be prejudiced or disadvantaged in any way if they choose not to participate, or to discontinue participation by not submitting their questionnaire. Neither the participants' identity nor that of their employing organisation will be determinable from the data collected by the researcher.

Upon completion of the study, if the scale is found to be valid, an assessment of the overall functioning of the groups in the study can be requested.

An executive summary of the results will be available at the following blog address <u>http://bleekersresearch.blogspot.com</u> early next year. If you have any questions regarding the study, please feel free to contact me. Thank you for your time and I hope to hear from you soon.

Regards,

Røbin Bleekers <u>Rbleekers@gmail.com</u> 0723764651

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Calvin Gwandure Calvin.Gwandure@wits.ac.za 0714543334

<u>Appendix 6:</u> Participant information sheet



Psychology School of Human & Community Development University of the Witwatersrand Private Bag 3, WITS, 2050 Tel: (011) 717 4559

Dear Sir or Madam

My name is Robin Bleekers and I am currently conducting a research study for the purposes of obtaining my Master's degree in Organisational Psychology at the University of the Witwatersrand. My research focuses on group functioning. The research requires groups presently functioning within an organisation and that consists of three members or more. I would like to invite you and the other members of your group to participate.

Participation involves completing a printed copy of the questionnaire, which should take no more than twenty minutes of your time. Participation is voluntary and submission of a completed questionnaire is considered consent. You will not be prejudiced or disadvantaged in any way if you choose not to participate, or to discontinue participation by not completing your questionnaire. Neither your identity nor that of your employing organisation will be determinable from the data collected by the researcher.

An executive summary of the results will be available at the following blog address <u>http://bleekersresearch.blogspot.com</u> early next year. If you have any questions regarding the study, please feel free to contact me. Thank you for taking the time to read this letter.

Kind Regards,

Robin Bleekers Rbleekers@gmail.com 0723764651

Calvin Gwandure Calvin.Gwandure@wits.ac.za 0714543334