The implications of self-versus-observer rating discrepancies in 360-reviews

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ABSTRACT

The importance of measuring employee efficiencies and increasing their productivity through various mechanisms such as performance evaluation and appraisals have been realised by most organisations. This study analyses the potential discrepancies between self and observer ratings within a 360-degree feedback process utilising the case of a company called Master Drilling. The company completed its first 360-degree feedback process in 2016 and provided this data to the researcher. The cross-sectional study used a quantitative approach and all participants (N=80) completed a standard Likert-scale based questionnaire which was distributed online via the human resource department of Maser Drilling. Individuals were asked to complete a self-rating whilst their colleagues, superiors and subordinates also completed assessments of the individual, utilising the same questionnaire and rating scale. Results indicate that within Master Drilling self-ratings were predominantly higher when compared to observer ratings of the same individual. Discrepancies between self and observer ratings were almost always positive (self-ratings higher than observer ratings) but the discrepancy values varied between different divisions and nationalities within the company, level of employment, gender, duration of employment and with and an individual's levels of education. Negative (observer ratings higher than self-ratings) discrepancies were observed for individuals with higher levels of education and at the highest level of employment in the study i.e. managerial level. The higher self-ratings were postulated to most probably be due to overrating as a result of "leniency effect" .This tendency could lead to negative implications for Master Drilling, as individuals who tend to overrate themselves react negatively towards negative performance feedback and often become disengaged, leading to lower job performance. The study further contributes to the literature on 360-degree feedback with the specific focus on self-versus-observer discrepancies, as well as recommendations for future amendments to the process of improving results at Master Drilling. and possible areas for further research are also being suggested.

KEYWORDS: 360-degree, discrepancies, self-rating, observer, peer, top-down.

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Abbreviations

GRS: Graphic Rating Scale

MD: Master Drilling

MBO: Management by Objectives

CHAPTER 1 INTRODUCTION

1.1 BACKGROUND OF PERFORMANCE APPRAISAL

For years the importance of evaluating employee efficiencies and increasing their productivity through various mechanisms such as performance evaluation and appraisals have been realised by most organisations (Anso, 2014; Obi, 2016:35). The device through which employees have been traditionally evaluated have hinged mainly on ratings and assessments predominantly by a single rater usually their supervisor (Anso, 2014; Obi, 2016:35). .It is a widely accepted that organisations can only achieve their objectives by setting measures of control and accountability for their employees which in turn must be measured through mechanisms such as performance appraisal (Anso, 2014; Bracken & Church, 2013:34–40). Additionally some of these mechanisms also form the basis of enhancing not only employee performance but also making employee development decisions as well as a decision such as an employee's retention, promotion and salary increases (Grahek, 2008; Kim, 2014).

1.2 360-DEGREE FEEDBACK

One such method that has gained popularity in recent times is the multi-source feedback appraisal system, also known as 360-degree feedback (Morris, 2011). This multisource mechanism provides a great deal of information by capturing the perspectives of multiple observers and the self-rating of the individual. However, one problem with this system is that it is known for showing interrater discrepancies at both individual and organisational levels (Gentry *et al.*, 2010:237–250; Van der Heijden & Nijhof, 2004). Furthermore although 360-degree feedback has been proven as an active employee developmental instrument, its adequateness in evaluation of an employee's performance requires further clarification by means of more empirical evidence as most studies to date show conflicting and/or "mixed" results with regards to performance appraisal (Bracken & Rose, 2011:183–192; Kanaslan & Iyem, 2016:172–182).

Despite the uncertainties as to its accurate measuring of employee performance, it has non the less become a prevalent method implemented in many organisations over the last 15 years. (Gentry *et al.*, 2010:237–250; Grace & Abirami, 2016:172–177; Hosain, 2016:21; Morris, 2011; Nowack & Mashihi, 2012:157–182). The current use of 360-degree feedback mechanisms are not so much based on empirically based findings or evaluations of applied studies but rather fads,

recommendations by service providers and opinions of expert consultants in the field of HR (Nowack & Mashihi, 2012:157–182).

Meta-analytics have shown that 360-feedback mechanisms can incite considerable behavioural changes within an organisation (Nowack & Mashihi, 2012:157–182). These changes are however moderate at best and when the system is poorly implemented, it could lead to a reduction in performance (Nowack & Mashihi, 2012:157–182).

In addition to the limited number of well-designed prospective studies showing the benefits of 360-degree feedback, other studies suggest potential harm, danger, and potential limitations of its impact on both awareness and effectiveness of employees (Nowack & Mashihi, 2012:157–182). This suggests that even the most accurate assessment mechanism results, which are not utilised correctly, could mean that the rating exercise can become a meaningless effort (Kim, 2014).

One of the main reasons for both negative and positive results is the employee's acceptance of the findings which in turn determines the employee's reaction to the results either as an area to improve or as a false representation of their performance (Kim, 2014).

1.3 360-DEGREE FEEDBACK DISCREPANCIES

Not only is the outcome of such appraisal systems poorly studied, but the accurate measuring of ratings in terms of questionnaires or measuring instruments development is also an area of contention, as there are often discrepancies between self- and observer ratings (Gentry *et al.*, 2010:237–250; Nowack & Mashihi, 2012:157–182). According to various researchers, discrepancies can be attributed to a wide range of possible factors such as derailment (Gentry *et al.*, 2010:237–250), differing values, norms and beliefs of the raters (Nowack & Mashihi, 2012:157–182), rater personality (Marmet, 2015), rater-ratee relationship, and prior to all of these various factors, the validity of the measurement mechanism instrument (Kim, 2014).

As the use of multi-rater assessments has become standard practice in the modern working environment it has become essential to understand the phenomenon of variance among different raters (Grahek, 2008). There has been little success in attempts to reduce these discrepancies through statistical methods and the design of questionnaires and rating scales (Grahek, 2008). A linkage has been explicitly observed between the self vs other rating discrepancies and employee job performance and as such this specific discrepancy has received much attention amongst researchers (Grahek, 2008).

1.4 MASTER DRILLING COMPLETES FIRST 360-DEGREE FEEDBACK APPRAISAL

In 2016 Master Drilling Ltd (MD) for the first time implemented the use of 360-degree feedback reviews across multiple divisions in multiple countries. In this study, the following research will be undertaken, the analysis of results, specifically the discrepancies between self and observer ratings and the comparison of this to empirical data and evaluations of similar studies in effect also expanding upon current research literature on the subject. The possible implications of, and reasons for, the discrepancies will also be analysed and compared to findings and hypotheses from other studies analysing the use of this rating system.

The researcher is of the opinion that MD can benefit from this appraisal system two-foldedly: a) namely by scrutinising the accuracy of the rating system and b) utilising the information gained from the appraisal system regarding employee development and job performance improvement implications.

1.4.1 Background of Master Drilling

The MD group of companies provides international expertise for drilling in the exploration stage, capital project stage and mining production stage drilling and provide these services to blue-chip major and mid-tier companies. Established in 1986 in Fochville, South Africa, the company has since attained a full international profile ranging from operations in Latin America to China.

The South African entities are operated from their head offices in Fochville, North-West, South Africa through three subsidiary companies; Master Drilling South Africa (MDSA) (raise boring), Master Drilling Exploration (MDX) (the exploration drilling entity) and Drilling Technical Services (DTS) (responsible for all the engineering support of the other entities of the company). The company additionally has divisions in Mexico, Peru, Chile, Argentina and China and has recently expanded into the USA and Sweden.

MD identifies people capacity and development as one of its four critical "pillars" or strategic areas of focus. The implementation of a new performance appraisal system such as 360-degree feedback mechanism should be appropriately evaluated to ensure the company's strategic goal of people capacity development is not compromised during this process.

1.5 PROBLEM STATEMENT AND CORE RESEARCH QUESTIONS

In 2016 MD implemented the 360-degree feedback system as a method to improve job performance primarily and secondly to identify possible areas of employee development. Data have not been adequately analysed and compared to other studies relating to the same subject. The researcher is specifically interested in the discrepancies that may exist between the self and observer ratings of individuals across various constructs and how these discrepancies compare to other studies of a similar nature.

Discrepancies often exist between self- and observer ratings in 360-feedback mechanisms. This can possibly be ascribed to the accuracy of the mechanism. Even if measurements are proven to be accurate, the implications of aforementioned discrepancies for employee development and job improvement need to be taken into account. (Albright, Michelle & Levy, Paul, 1995:577–600; Gentry *et al.*, 2010:237–250; Massingham *et al.*, 2011:43–74; Morris, 2011; Nowack, 1992:141–155; Nowack & Mashihi, 2012:157–182; Van der Heijden & Nijhof, 2004).

Discrepancies can exist for various reasons, namely the personality of the rater to the relationship between the rater and ratee to the actual validity of the questionnaire design (Bracken & Rose, 2011:183–192; Kim, 2014; Marmet, 2015).

Even if these rating systems accurately measure employee job performance, rating feedback should be implemented correctly, as an individual often receives feedback of negative discrepancies between their own and observer feedback (Gentry *et al.*, 2010:237–250; Massingham *et al.*, 2011:43–74; Morris, 2011). This negative feedback could result in either a positive or negative receptivity of the individual and may result in disengagement and poor job performance (Morris, 2011; Nowack & Mashihi, 2012:157–182). This study thus questions what the possible effect of the results of such a rating mechanism can have on MD by comparing the results to similar studies and various hypotheses of the effect of such rating systems on organisations.

Research will compare findings in this study to other similar studies to deduce the correlations and implications of the results found in this study. For various reasons it is difficult to meta analyse data from this study to other similar studies. The most significant constraints are different 360-degree feedback processes and large scale difference in questionnaire and measurement instrument design with some studies suggesting positive and others negative results (Bracken & Rose, 2011:183–192; Nowack & Mashihi, 2012:157–182).

As the use of 360-degree feedback systems has also shown mixed results thus far (Bracken & Rose, 2011:183–192) the study will also strive to add some additional empirical data in an effort to produce more substantive results.

The core research objectives and questions of the study are summarised below:

- Determine if 360-degree feedback systems display discrepancies between self and observer ratings within MD.
- If discrepancies exist, are they quantifiable and can one elucidate the reasons for such discrepancies?
- Determine if observations of 360-degree feedback reviews within MD are similar to results found in literature.
- What are the implications of using 360-degree feedback reviews for MD with regard to employee job performance improvement and identification of developmental needs and behavioural changes?

1.6 RESEARCH METHODOLOGY AND DESIGN

Various methods and procedures have been utilised objectively to obtain scientifically unbiased knowledge for the purpose of describing and elucidating the status quo, as well as describing and predicting specific phenomena.(Welman *et al.*, 2011).

Research of the subject was divided into two-phases, the first phase focused on a literature overview to obtain a clearer understanding of the subject, findings and results of similar studies and how these possibly relate to the current study. Secondly, an empirical study was conducted which analysed research result for a subsequent comparison with other similar studies.

A quantitative approach was chosen to collect the data and complete the empirical study as a quantitative approach according to the researcher presented more significant advantages in completing this study. Although a qualitative approach could have potentially provided a more in-depth understanding of the employees completing 360-degree feedbacks and the possible reasons for discrepancies between specific individuals' ratings, it lends itself to be less credible and is more time consuming with the need to analyse very complex datasets (Leedy & Omrod, 2013).

As research was measuring discrepancies, it was essential that the questionnaire was standardised and consistent as according to (Welman *et al.*, 2011) the main factor of reliability in a dataset is the consistency of the data to provide stable measurements that can be replicated.

As one of the questions regarding discrepancies was also the validity of the measuring instrument, a quantitative approach was important to determine if meaningful objective conclusions could be obtained from empirical results (Creswell, 2013).

The empirical data in the study was collected using a standardised measuring instrument emailed to various employees within MD where ratings measured the behaviour displayed by the individual on a frequency of behaviour rating scale. As such research did not have any influence on the outcome of the data regarding biases such as the researcher's personal feelings, beliefs or interpretations playing a role in data collection. The use of the standardised questionnaire thus served to improve the reliability and objectivity of the data.

1.6.1 PHASE1: The literature review

In phase one a review of the literature was completed by the researcher to gain a clear and substantive understanding of the context of performance appraisal and specifically 360-degree feedback multi-rater performance feedback systems. In accordance with Welman *et al.*, 2011 researchers should indicate how previous studies relate to their study and how their research relates to similar research. The literature review thus provides a synopsis of the available knowledge of the subject discipline. It provides an overview of findings and results of similar studies and how their findings and result compare with one another. The specific focus of the literature review funnels down to the discrepancies between the individuals' self-ratings versus observer ratings and the reasons and implications of these for related entities involved in similar appraisal.

The sources that were consulted include:

- Articles in accredited academic journals
- NWU library/ e-Fundi electronic library
- Dissertations, mini-dissertations and theses.
- Books
- Textbooks and other reference materials

- Minimal internet sources

The themes that were addressed include:

- Performance appraisal/ Performance management
- Multi-source performance rating systems
- 360-degree feedback appraisal systems
- Multi-rater performance appraisal systems
- Discrepancies in multisource/360-degree feedback/multi-rater feedback
- Advantages and disadvantages of 360-degree feedback systems

1.6.2 PHASE2: Empirical study

The empirical study served to provide clarity on the participants in the study, the measuring instrument utilised, and the statistical measures applied to the dataset.

1.6.3 Research design

Data were collected by the Human Resources department of MD during three weeks in which questionnaires were sent out via email to employees at, below and immediately above supervisory levels of employment across all divisions. For the purpose of the study the two levels measured within the company were managerial (higher) and supervisory (lower). The measurement instrument makes 20 statements divided into four constructs or themes regarding the subject's behaviour in the workplace. Subjects then assess themselves and were subsequently assessed by observers on how frequently these behaviours are displayed in the workplace. The main goal of the study was to assess the discrepancies between self- and observer ratings of the different statements and themes thus a quantitative approach will be more advantageous as it can provide a higher level of precision and statistical validation for measurements (Matveev, 2002:59–67).

The study can be considered cross-sectional as it measured only the 360-degree feedback results obtained at one point in time and not on multiple occasions. As the study first determined to quantify the discrepancies between self and observer ratings by means of correlations and then subsequently discussed the implications of the quantified discrepancies it can be considered both

descriptive and exploratory in nature, as it provides the study of both the "what" and "why" (Leedy & Omrod, 2013).

1.6.4 Study participants

The 360-degree feedback email was distributed to all employees in MD at, above and immediately below a supervisory employee level. In total, the participation of 100 employees was requested, and 80 participants gave a response with a total of 273 (self and observer) ratings received back. The target population of the study was all employees at, above and immediately below supervisory level (the later only served to provide observer ratings) and as such 80% of the population was sampled lending itself to confident generalising of the result to the total population of MD.

1.6.5 Measuring instrument

The main instrument used to measure rating assessments consisted of a 20 item questionnaire measuring four behavioural themes aligned with MD's values of, respect, accountability, integrity, safety, and efficiency or RAISE values. The rating scales were constructed using a 5-point Likert type scale of the agreement where participants either 1, strongly agreed with the statement in this study "Always demonstrates this behaviour" in the case of this study or five, strongly disagreed i.e. "never demonstrates this behaviour" in this study. For the purpose of better graphical presentation, the data was however inversely coded before interpretation. In other words five indicates strongly agreed in the final dataset. The instrument was internally constructed according to the needs of MD and attempts to align with the organisations vision and values. However there is no one instrument in 360-degree feedback that will fulfil the needs of all organisations and in order to instil change in the organisation's it needed to be designed to align with the behaviours and the organisations values desired by the organisation (Bracken *et al.*, 2017:761–794; Leslie & Fleenor, 1997). The instrument measured a Cronbach α of 0.98 in this study.

The measurement instrument was also translated to Mandarin, Spanish and Portuguese by multilingual personnel in each of the different divisions of MD.

1.6.6 Ethical considerations

The researcher obtained consent from MD management to utilise the information (data) generated by the respondents. All information was modified to ensure all individuals remained anonymous to the researcher (Appendix D Permission letter from company to use data).

Ethical clearance for this research was also obtained from the University of the North-West (NWU) The ethical clearance number for the research is EMSPBS16/06/03-01/51.

1.6.7 Statistics

Data was statistically analysed by using analytical software. Graphical presentations enabled better observations of tendencies from which conclusions could be drawn and subsequent recommendations made. Once again, the it should be stated that the final dataset was inverted for better graphical presentation of results. In other words, in the initial questionnaire 1 indicates strongly agreed but in the final dataset this was inverted to a 5.

Statistical analysis was completed by the researcher who holds a MSc degree in natural sciences and as such has completed various statistical analysis modules during his studies. Research utilised Microsoft Excel 2016 for essential data compilation, statistical analysis program SPSS and Systat Sigmaplot 14.0 for primary descriptive and parametric statistical analysis. Systat Sigmaplot 14.0 was also utilised to construct various graphs presenting the statistical data obtained from the study. The validity and reliability of the instrument was established after which basic descriptive statistics and correlations (to quantify inter-rater discrepancies) was applied to the data.

1.7 SIGNIFICANE AND CONTRIBUTIONS OF THE STUDY

The need for accurate and precise performance appraisals are of paramount importance not only for determination of compensation, rewards and career advancement. Furthermore performance ratings in itself are also recognised as a reward which has been linked to improved job satisfaction and hence work performance (Grahek, 2008; Kim, 2014; Landy & Farr, 1980:72–107). In the modern era of business multi-rater feedback performance appraisals specifically 360-degree feedback has grown in popularity. It is estimated to be utilised by more than 90% of larger companies (ETS, 2012:1; Grahek, 2008).

Thus, any scientific research based on empirical data, that can contribute towards a better understanding ,is of pivotal importance in the modern business environment and is estimated to be thus any empirical data to improve its understanding is of importance to modern business environment (ETS, 2012:1; Grahek, 2008).

The need for increased study as to its validity is thus of the utmost importance; not only as it plays a significant role in the motivation within a company's workforce but also to ensure that the best

performing individuals are placed in positions where they can be most effective within the company.

Within MD specifically, this performance appraisal system has only been introduced recently. It therefore definitely warrants study of its validity and reasons for possible self-versus observer rating discrepancies.

1.8 CHAPTER DIVISION

The chapters of the mini-dissertation are as follows:

Chapter 1- Introduction

This chapter provides the reader with a background to performance appraisal, introduces 360-degree feedback; as well as providing the background of the study and the company utilised in the study. It introduces the problems encountered with multisource feedback systems especially interrater discrepancies and sets out the problem statement; as well as defining the research questions and aims of the study. Finally, it gives a brief overview of the research methodology and possible limitations of the study.

Chapter 2- Literature Review

This chapter briefly overviews performance appraisal with more specific focus on 360-degree or multisource performance appraisal systems. It gives an overview of the development of 360-degree feedback, what it is, why companies use it, as well as the advantages and challenges with 360–degree feedback. Specific focus is placed on the findings/ results of other studies with regards to self-versus-observer rating correlations/discrepancies and the results or meanings such discrepancies can have on an individual and organisational level.

Chapter 3- Methodology and Results

The chapter provides a brief overview of the researcher's chosen method for collecting, collating and statistically analysing data. Furthermore, the chapter gives an overview of the research design; describing the sample population; as well as scientifically justifying the reliability and validity of the collected data.

This chapter furthermore contains a compilation of the statistical analysis of the data and compares means over various measurements and sub-categories within the dataset. The demographics of the sample population is described as well as the reliability and validity of various sub-grouping of the sample population.

Chapter 4: Discussion

This chapter will review the empirical results obtained from Chapter 3 by referring to each of the objectives within the study. Furthermore, this chapter will examine whether a discrepancy exists between self and observer ratings within MD, quantify the discrepancies, compare findings to existing knowledge in literature and finally discuss the implications of the findings in terms of job performance, determining developmental needs and implement behavioural change.

Chapter 5-Conclusion and Recommendations

This chapter provides a brief summary of the main findings of the study as well of the limitations of the study. Furthermore, it will provide recommendations for both MD in terms of the 360-degree process as well as suggest future improvements and studies that could be conducted for the better understanding of the 360-degree process.

1.9 CHAPTER SUMMARY

This chapter presented the research context and background of 360° feedback appraisal systems as well as the discrepancies in self-versus-observer. The chapter also introduced the problem statement, research objectives and -design of the study, the scope of the study and finally suggests the limitations of the study.

CHAPTER 2 LITERATURE REVIEW

2.1 INTRODUCTION

This chapter will provide an overview of performance appraisal and more specifically 360-degree feedback systems. Furthermore, it will review theories, empirical studies and underlying theories of performance appraisal focussing on specifically 360-feedback multi-rater assessment mechanisms. The chapter will provide a brief overview of the 360-degree process as well as leveraging the best results from the process. Finally, it will individually review rating discrepancies, focussing on findings of previous studies regarding self vs other rating discrepancies. The chapter will conclude with a brief overview of some of the proposed causes and implications of the discrepancies.

2.2 KEY CONCEPTS

- Performance ratings in the context of employee evaluations can be defined as an assessment of an employee usually; by a person of senior rank; taking into account certain factors associated with performance over a specified time period with the goal of developing human performance in organisations (Armstrong, 2006; Shayo, 2013).

- 360-degree feedback can be defined as performance appraisal systems where the employee receives feedback on his/her performance from various stakeholders, such as managers, colleagues, team members and customers (Campion *et al.*, 2015:85–93).

- Receiver, ratee or appraisee (often also referred to as the "client"): This is the individual who is the subject of the feedback exercise. It is the person who is being rated. In cases where 360-degree feedback is being used in an appraisal context, the receiver may also be referred to as the ‘appraisee' (Silverman *et al.*, 2005).

- Rater: This is an individual who provides feedback by rating the receiver or appraisee according to the various dimensions. The number of raters providing feedback varies enormously. Typically there are between five and ten raters (Figure 2) (Silverman *et al.*, 2005).

2.3 BRIEF HISTORY OF EMPLOYEE PERFORMANCE REVIEW

The first recorded system of performance appraisals occurred as early as 1800 in Scotland (Farrell, 2013). Performance appraisal systems developed mainly from the need to quantify results and pay employees according to how their performance measured against certain set goals and criteria by the employer to achieve the organisation's goals (Bracken & Church, 2013:34–40; Othman, 2014). In most organisations this method is the main tool for making human resource related decisions such as employee retention, promotion/demotion and possible pay increases or decreases (Grahek, 2008; Kim, 2014; Othman, 2014). It is also an important tool to control organisations (Grahek, 2008; Kim, 2014; Othman, 2014). Employee information and employees' performance are collected from their direct, in most cases a supervisor (Campion *et al.*, 2015:85–93; Grahek, 2008).

Only later did the linkage between job satisfaction and performance appraisal become apparent. This led to the subsequent need to ensure that the appraisal system being utilised gave an accurate reflection of the satisfaction of the employees in the organisation (Anso, 2014; Grace & Abirami, 2016:172–177).

In the early 1930s this elusive linkage between job- performance and –satisfaction had been recognised as one of the most esteemed fields of study in modern psychology (Farrell, 2013). It has been intriguing during the last 50 years, transforming into a standard business tool during the 1980's (Farrell, 2013). Performance appraisals are utilised by almost all companies in this modern day and age with 360-degree feedback, which is a focal point of this study, estimated to be implemented by 90% of large companies (ETS, 2012:1).

The need for performance ratings has thus been recognised but what a performance rating entails, has been a more evanescent field of study (Shields *et al.*, 2016). The term performance has many meanings depending on the context within which it is used. To a shareholder it will be share price increased a director has brought about and to a manager it can relate to labour productivity of his employees (Shields *et al.*, 2016). Shields *et al.*, 2016, eludes to the fact that performance appraisal or ratings are subjective and multi-dimensional as it will not only vary with whom is rating but also with what is being rated. Formal performance appraisals or ratings in the context of employee evaluations are usually conducted by managers on employees, focussing on some annual period of employment that has elapsed or the employee has completed (Armstrong, 2006).

Multi-rater performance review techniques, specifically 360-degree peer review rating systems, have grown in popularity in recent times and have become a prominent management technique in modern organisations despite few examinations of its validity specifically in terms of understanding self-rating versus observer rating discrepancies and subsequent performance review validity (Atkins & Wood, 2002:871–904; Bracken, 1994:44; Bracken *et al.*, 1997:36; Fleenor *et al.*, 2001:3–20; Nowack & Mashihi, 2012:157–182).

2.4 WHY MEASURE PERFORMANCE?

The complexity and sophistication of modern day industry have resulted in complex compensation and remuneration structures within the workplace (Shields *et al.*, 2016). The need for accurate and precise performance appraisals in the form of ratings has thus been the focus of many industrial psychologists for some time, not only for the reason of compensation and rewards but also because performance ratings in itself are also recognised as a reward which in turn has been linked to improved job satisfaction (Grahek, 2008:1–60; Kim, 2014:1–305). Additionally employee performance feedback has been recognised as one of the most critical positive reinforcement tools for shaping positive behaviour in the workplace (Woods, Stephen & West, Michael, 2015). It is widely accepted in the modern business environment that an organisation can only achieve its objectives if employees' performance and behaviours are aligned with the objectives of the company and the only way to measure this is through some form of performance appraisal (Anso, 2014; Bracken & Church, 2013:34–40).

2.5 BRIEF REVIEW OF PERFORMANCE RATING METHODS

As previously stated, traditionally performance information on an individual was and in some case is still collected by their supervisor or direct superior in the workplace (Grahek, 2008).

The most common means of conducting performance ratings are with the help of rating scales, which usually consist of questionnaires based on a scaling system relating questions to specific tasks (Woods, Stephen & West, Michael, 2015). These rating systems are however unavoidably biased and subjective as human judges are involved (Woods, Stephen & West, Michael, 2015).

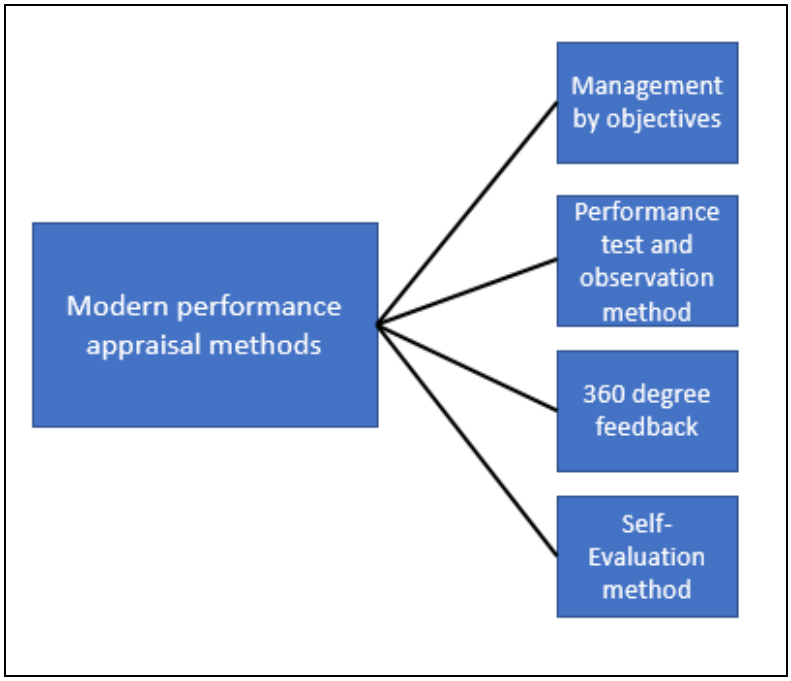
Objectivity and non-bias performance rating have been proposed. Such areas include, specialised training for raters, forced ratings where assessors are compelled to rate a certain percentage of employees as poor or excellent, multiple raters or 360-degree performance reviews which involves ratings by supervisors, peers and subordinates and which normally utilise behavioural scales where

raters instead become observers and determines if the ratee or appraisee has displayed certain behaviours or not (Woods, Stephen & West, Michael, 2015).

Types of modern performance appraisal methods

According to (Drogomyretska, 2014:38–44) the following modern rating methods are used most commonly by modern businesses to asses employee performance (Figure 1):

Figure 1: The different method of performance appraisal employed in modern day companies.



- Management by Objectives or MBO is the process by which managers and superiors identify the goals of an organisation and align those goals to that of the employee by setting specific responsibilities and goals for the employee. An employee's performance is then assessed by their superior using the achievement of their goals as a measurement tool.

- The performance and observation method involves the testing of the employee's knowledge and skills usually by a superior that has sufficient knowledge in the area being tested. The performance of the employee is then subsequently assessed according to their proved competency in the area being tested.

- 360-degree feedback utilises feedback from multiple sources who preferably have daily contact with the employee and may also include external raters to the company such as client. The main difference from traditional rating systems is that it does not only collect

top-down supervisor assessments of the employee but also ratings by peers/co-workers and subordinates.

- Self-evaluation methods allow employees to rate themselves without any outside influence from supervisor ratings. The main advantage of this method is that it is perceived to create more interaction between supervisors and their subordinates.

Common rater problems associated with performance appraisal

According to Obi, 2016, people are prone to make some fairly erroneous judgements and ratings when appraising others due to factors such as, central tendency, personal bias, being strict or lenient, the halo effect, regency, and the contrast effect.

- Central tendency refers to the phenomenon of raters to score everyone in the middle, as they are afraid of rating individuals too harshly and conversely also feel that no-one is an exceptionally good performer deserving a high rating (Shields *et al.*, 2016). The result is that all subjects are rated , as per most rating scales, between 3 and 5 with an average of 4, thus as Feldman and Arnold noted a manager is unable to identify which employees are performing and which are not and also cannot act accordingly (Obi, 2016:35).

- Personal bias refers to the fact that some individuals taking part in a performance appraisal process will make rater errors because of some personal bias towards one another, be it because of past history, stereotypes in racial groups or ethnicity, or role stereotypes (Obi, 2016:35).

- Strict and leniency biases refer to strict raters that score individuals harshly. Thus individuals that perform well are rated as average and average individuals are rated as poor, as per the former, with lenient raters conversely rating average employees as good and poor individuals as average (Iqbal *et al.*, 2015:510–533; Obi, 2016:35). Leniency creates the perception that individuals are more competent than they actually are and is an undesirable result in any performance assessment process (Arwal, 2011).

- Halo effect refers to the phenomenon where a rater tends to rate an individual high or low on all sections of a rating questionnaire or characteristics based on one characteristic or dimension of the individual that is extremely high or low (Jackson, 2009). This effect creates the same problem as central tendency in that managers are unable to identify which

employees actually have some poor characteristics or dimension that need development (Cooper, 1998:218–244).

- The term recency refers to the tendency of the rater to only keep the most recent performance and other performance events in mind when conducting a performance rating. For example an annual review more often than not only takes into account the performance of the last few weeks and/or months (Obi, 2016:35).

- Contrast effect refers to the rating biased formed when a rater scores an individual based on the rating of the previous individual in other words when a rater completes the rating of a poor performer it may affect the following individual's rating negatively the converse may also occur (Obi, 2016:35).

2.6 360-DEGREE FEEDBACK

2.6.1 History

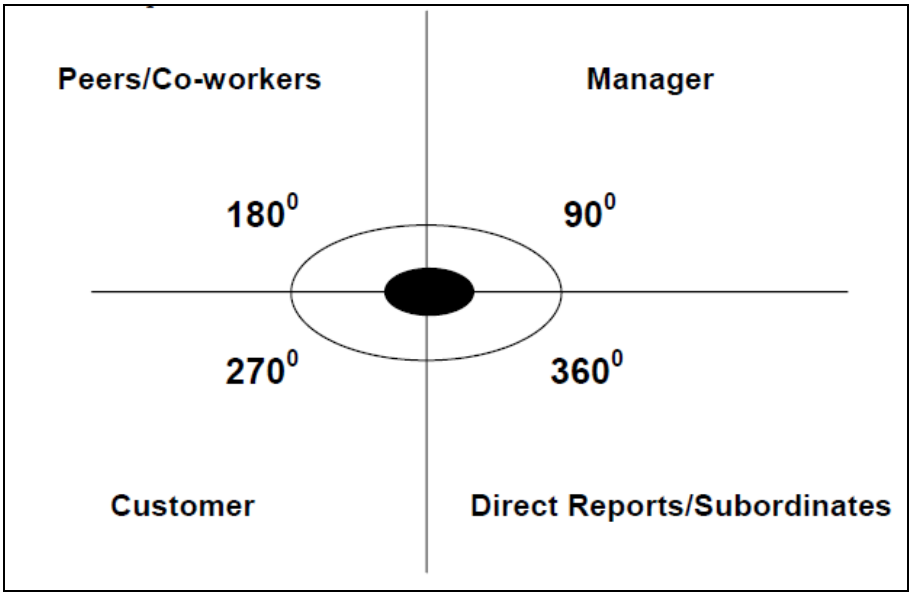
The concept of 360-degree feedback is not new. The German army first utilised the concept of feedback from multiple sources to evaluated their performance during World War II (Fleenor & Prince, 1997; Gheith, 2014:119). Henceforth multiple feedback systems as mechanisms for leadership and performance measurement became more widespread during the 1980's mostly referred to as multi-rater systems (Bracken & Church, 2013:34–40). In the early 1990's it emerged as a specific intervention and it was Edwards and Ewens in 1996 that first patented the term "360° feedback" in their publication, " 360° Feedback: The Powerful New Model for Employee Assessment & Performance Improvement" (Bracken *et al.*, 2017:761–794; Bracken & Church, 2013:34–40). The initial findings in this publication highlighted the superiority of well -designed 360° feedback over more prevalent single source rating systems with regards to reliability and fairness (Bracken & Church, 2013:34–40). Initial growth in popularity of the system was slow, thought mainly due to the arduous paper-based process of collecting and collating of results causing practitioners and recipients to become despondent (Gheith, 2014:119). It is estimated that today more than 90% of large companies utilise 360° feedback with many using it not only for development purposes but also performance assessment (Bracken *et al.*, 2017:761–794; ETS, 2012:1; Grace & Abirami, 2016:172–177).

2.6.2 What is 360-degree feedback exactly?

360-degree feedback or full-circle appraisal is a form of multi-source assessment that is anonymous and utilises multi-rater feedback systems or multisource assessments. The purpose is to determine an individual's performance based on performance information; not only collected from their superior but also from themselves, peers, subordinates and possibly also clients and/or customers (Figure 2 and Figure 3) (Campion *et al.*, 2015:85–93; Gentry *et al.*, 2010:237–250; Gheith, 2014:119; Hosain, 2016:21; Woods, Stephen & West, Michael, 2015). More formally, 360-degree feedback can be defined as performance appraisal systems where an employee's self-rating is also supplemented by various stakeholders' assessments of the specific employee, (Campion *et al.*, 2015:85–93; Grace & Abirami, 2016:172–177; Morris, 2011; Silverman *et al.*, 2005).

Figure 2 below illustrates the additional raters utilised compared to the traditional supervisor-employee rating systems or 90-degree feedback (top right) evolving to a 180-degree rating (top left) which involves peers and co-workers. This system in turn evolved to a 270-degree rating system (bottom left) which when all elements are combined with the previous constitutes a 360-degree rating system (bottom right) which involves all the previous parties including subordinates.

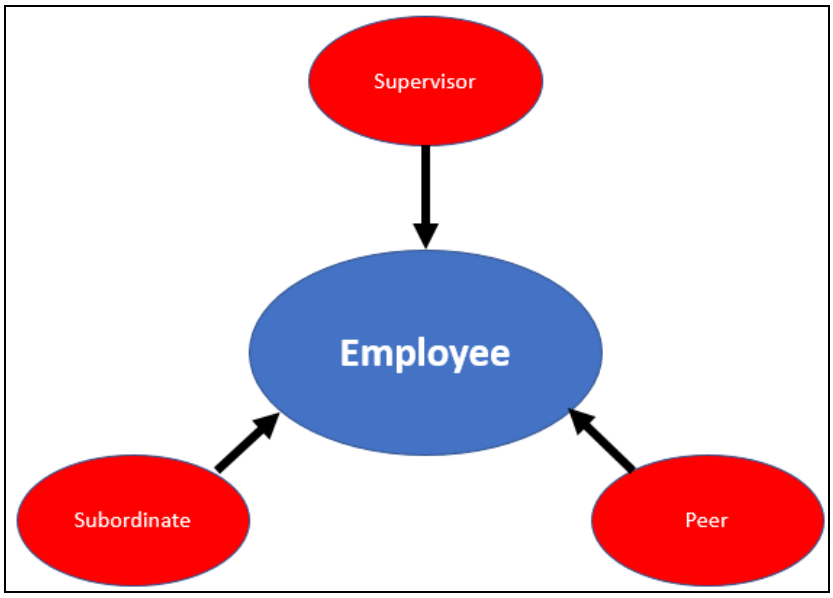
Figure 2: Diagram illustrating the different rating methods



(Source: Mukhopadhyay, 2006)

It is important to stress that the system is anonymous and can be used to assess the job performance of the employee as well as the behaviour of the employee, hence making it popular as a developmental guide tool as well (Campion *et al.*, 2015:85–93).

Figure 3: Diagram illustrating the most common person who will rate an individual within an organisation's 360-degree feedback process.



2.6.3 The theory, origin and implementation of 360-degree feedback

According to Kettley, (1997), the 360-degree feedback system originates from the philosophy and practice of performance appraisal, management behaviour and employee involvement. The theory behind the suggested effectiveness of the system hinges on the two main assumptions. Firstly observing our performance from the perspective of others raises our self-awareness and secondly self-awareness is important for improvement (Morris, 2011; Mukhopadhyay, 2006).

Bracken & Summers, (1998), believe there are two primary origins of 360-degree feedback. In the first instance they postulate that general company surveys appear to have resulted in the closer examination of subordinate views with regards to their supervisors. This can mainly be because of the construction of these surveys which often pose statement and ratings requirements which states "my supervisor behaves in manner X". The drive to rather analyse these results from an individual's view as opposed to an aggregated view may have prompted the use of 360-degree feedback (Bracken & Summers, 1998:42–46). This prompted the logical transition from a mere survey into a form of assessment of supervisors' behaviours and effectiveness (Edwards & Ewen, 2000:367–

386). The second main origin suggested by Bracken, (1996) is the use of the system as a component of management development programs through the use of it in a manager's personal development plan.

2.6.4 The steps in the 360-degree feedback process

Whilst Figure 4 from Edwards & Ewen, (2000) illustrates the basic steps involved in a 360-degree feedback process, the following steps were compiled by McCarthy & Garavan, 2007 and are recommended by the UK professional body for personnel management (the CIPD) possibly as a "Good practices, guideline" for companies implementing 360-degree systems (Morris, 2011):

- Decide on the purpose of the 360-degree appraisal implementation.

  The purpose of the feedback should be communicated to all participants as this will affect their reaction to the feedback (Morris, 2011). 360-degree feedback utilised for developmental purposes is seen as less threatening to participants compared to when it is utilised for performance appraisal purposes and some suggest that it should only be utilised for developmental purposes (Morris, 2011; Silverman *et al.*, 2005). The purpose of 360-degree feedback programmes can be for the following main purposes; assessment only, development only, assessment and development, organisational change and programmes evaluation (Bracken *et al.*, 2017:761–794). This purpose should be clearly highlighted at the onset of the programme otherwise the process will be misunderstood by everyone and could result in unfavourable outcomes (Bracken *et al.*, 2017:761–794).

- Select the best measurement instrument to be utilised.

  It is during this step that a number of different models for constructing the measurement instrument can be utilised to construct a questionnaire (Morris, 2011; Nowack, 1993:69–72). The questionnaire design most commonly contains competency items listed according to the requirements of the company and employees may be involved in customising the instrument as no one generic instrument can fulfil the needs of every organization (Fleenor & Prince, 1997; Morris, 2011; Nowack & Mashihi, 2012:157–182).

- Decide on the rating items.

  There are two main indicators utilised in ratings, firstly psychometric applications can be utilised (measuring emotional intelligence) and secondly workplace behaviours can be utilised (competencies) (Morris, 2011).

- Decide who will participate in the rating process.

  Participation can either be voluntary or mandatory, depending on the purpose of the rating process (Morris, 2011; Silverman *et al.*, 2005). However, in modern day 360-degree processes mandatory participation is the norm, especially when utilised for performance appraisal purposes (Morris, 2011).

- Prepare and train the raters.

  Feedback and communication are essential in 360-degree feedback. Without specific criteria clear errors such as halo effects, central tendency and leniency could occur during the rating process .(Morris, 2011; Shayo, 2013; Van der Heijden & Nijhof, 2004)

- Choose who will rate who during the process.

  As per Figure 3 persons involved in the process will usually be self, superior, peer/colleagues and subordinates. The participants are usually chosen by the 360-degree administrator but it is important that the participants receiving and rating have regular interaction (Hosain, 2016:21).

- Decide how questionnaires will be distributed and who has access to questionnaires.

  The 360-degree feedback system has evolved from a paper and pencil hand written questionnaire to an online system, which has resulted in increased popularity and ease of use (Gheith, 2014:119). The online system has also allowed overcoming another obstacle in the use of 360-degree feedback namely the insurance of participant anonymity (Morris, 2011).

- Careful consideration of how data will be analysed.

  Although measurement instruments may differ the data collected from the process utilises the same graphical interpretation methods such as bar charts plotting the means of different

rating sources and measurement items which often highlights the difference between self-ratings and ratings from other sources (Morris, 2011).

- Give participants feedback on the results.

  Feedback can be given to participants by simply sending a report without any support; managers can give guidance; or a coach or trainer can give the individual guidance along a developmental plan (Morris, 2011). Although different forms of feedback can be given the goal should be to provide information to the individual that can assist with employee development (AA, n.d.:1–8).

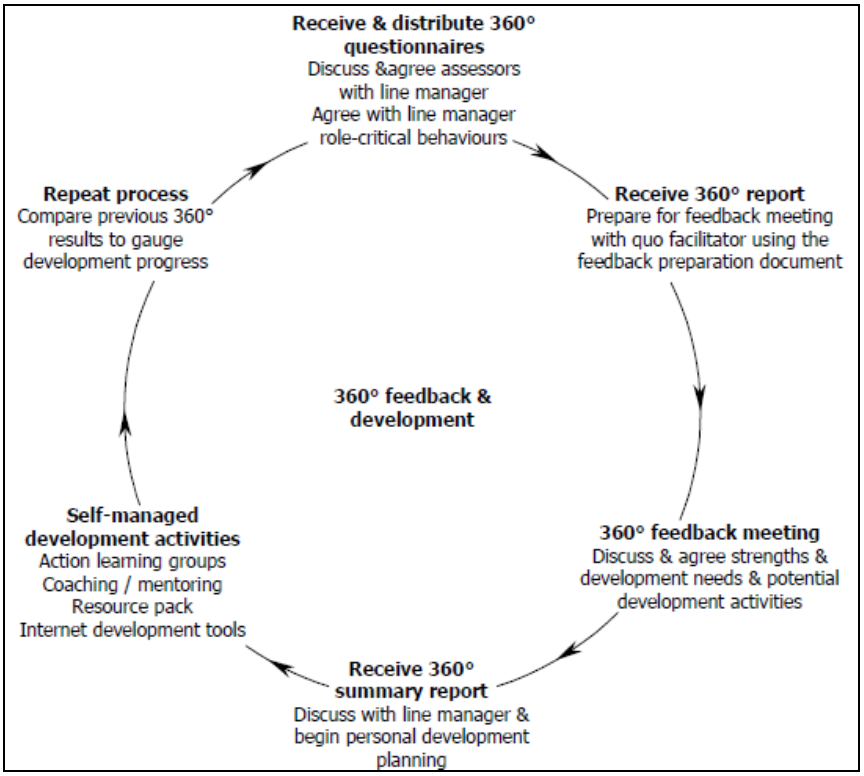
- Follow-up with participants on the results and their progress.

  Following the feedback process, areas requiring development need to be identified and personal development plans should be implemented to improve the identified priorities and developmental areas for the individual (Morris, 2011).

- Repeat the process to measure if any results have changed.

  The timeframe upon which the process is repeated will depend on the purpose of the 360-degree feedback. For performance appraisals it will be repeated annually, for personal development it will be repeated annually or bi-annually and for other needs or requirements such as talent acquisition or succession planning it can be completed as required (Morris, 2011).

Figure 4: An overview of the total 360-degree feedback process as well as developmental process of participants.



(Source: Edwards & Ewen, 2000)

2.6.5 The 360-degree feedback instrument

Models

A number of different models can be utilised when designing a 360-degree feedback instrument (Morris, 2011; Nowack, 1993:69–72). The ultimate use of the feedback will determine which model is best suited for designing the measurement instrument and it is improbable that one instrument will suit the needs of all organisations (Leslie & Fleenor, 1997; Morris, 2011).

Some of the more common models utilised when developing a 360-degree feedback process include:

- Designs utilising emotional intelligence based on theoretical or conceptual models such as first suggested by Goleman, 1997 (Morris, 2011; Nowack, 1993:69–72).
- Some instruments are designed by emphasising the skills and knowledge required by an employee to complete a job i.e. the traditional job analysis approach (Nowack, 1993:69–72).

- Most commonly measurement instruments are designed based on diverse and non-standardised competency models, identifying well performing employees across multiple job types and defining performance according to a certain set of characteristics (McCarthy & Garavan, 2007:903–917; Nowack, 1993:69–72; Nowack & Mashihi, 2012:157–182).

- Some models utilise "Personality theory" as a basis for instrument design and emphasises psychometric feedback. These models are however the least commonly used models (Nowack, 1993:69–72).

As stated above the most commonly utilised model for 360-degree feedback in modern day 360-degree feedback is a competency model which in most instances are company specific (Morris, 2011). The term competency model can be interpreted in various ways; from the task driven approach to the behavioural person orientated approach proposed by Boyatzis (Boyatzis, 1982; Morris, 2011). Dimensions of behaviour are suggested by Boyatzis, (1982), as defining the true model of competency based assessment. The idea is that the behaviours correlate to underlying attributes and what people need to do well which in turn allow managers to allocate persons to the correct jobs. The proven success of this approach and outcome has consequently led to wide spread application in human resources management including 360-degree feedback (Morris, 2011).

Scales used in 360-degree feedback

It has been shown that the data obtained form 360 feedback can be very sensitive to the rating scale utilised (Bracken *et al.*, 2017:761–794). It is thus important to carefully consider the rating scale to be implemented and usually a custom design to fit the purpose of the organisation is employed (Nowack & Mashihi, 2012:157–182). According to Nowack & Mashihi, (2012), the most popular scale in use is a five-point scale (76% usage) followed by a 7-point scale which is used approximately 16% of the time. As previously stated, by far most scales utilise a feedback on competency of the subject in their daily work tasks (Morris, 2011). The competency method allows the organisational goals to be aligned with the individual's rating; in turn modelling the individuals strengths and weaknesses; and allows for a personal development plan to be designed with the company's goals in mind (Morris, 2011).

Graphic Rating Scales (GRS) have been utilised more historically and are simple scales which make general statements about the subject's performance (e.g. "handles job demands") and then asks for a rating from a "low" to "high" level typically on a 5-point scale (Drogomyretska, 2014:38–44;

Morris, 2011; Obi, 2016:35). These scales have however been proven to be especially vulnerable to rater bias especially "halo effects" (Denisi & Murphy, 2017:421–433; Morris, 2011).

In 1963 Smith and Kendell attempted to enhance the GRS which led to the development of the Behaviourally Anchored Rating Scale or BARS (Othman, 2014). This system illustrates many performance levels through statements of behaviour so that clarity is gained on exactly what activities link to which rating outcomes (Morris, 2011). For example, when the outcomes measure is achievement orientated the rating scale may pose multiple statements such as:1." Wants to do a job well. May express frustration at waste or inefficiency" and 2. "Creates own measures of excellence. May focus on new or more precise methods of achieving goals" (Morris, 2011).

Behavioural Observation Scales (BOS) were first introduced by Lantham and Wexley in 1997, as an attempt to improve upon BARS (Denisi & Murphy, 2017:421–433; Othman, 2014). This scale ask raters to indicate the specific frequency a behaviour is observed in the subject typically statements would read similar to "creates an environment conducive to success" whereupon a rater would indicate a 1 for "almost never" or a 5 for "always" (Morris, 2011).

Behaviour base scales are by far the most commonly used scales in 360-degree feedback with GRS and BOS being the most popular amongst these (Morris, 2011). The instrument and scale design and selection is of critical importance, as it both guides the rater to select as unbiasedly as possible the correct number on the scale as well as indicating to the subject the areas which need to be improved and developed (Morris, 2011). This will ultimately affect the communication and also the attitudes of the participants in the process (Morris, 2011).

2.6.6 Why use 360-degree feedback? The advantages of 360-degree feedback.

Research has shown that 360-degree feedback is a far more reliable system compared to the more traditional single supervisor rating systems for various reasons (Campion *et al.*, 2015:85–93). Firstly 360-degree feedback systems are thought to be more reliable and valid systems of performance appraisal compared to basic single rater systems because it gathers information from and provides an assessment of an individual from the perspective of multiple sources (Basu, 2015:50–61; Gergely, 2012; Kanaslan & Iyem, 2016:172–182; Silverman *et al.*, 2005). All assessments at its core occurs in the mind of a human being and by its very definition will always be to a certain extent subjective (Van der Heijden & Nijhof, 2004). It is however thought that the 360-degree system reduces bias or subjectivity and subsequently increases reliability (Campion *et*

al., 2015:85–93; Gergely, 2012). Secondly it allows for better context during the employee's rating as it includes ratings from different individuals who have worked with the focal employee in different settings (Campion *et al.*, 2015:85–93). Because 360-degree feedback involves multiple ratings of an individual, as a third point, it encourages teamwork, responsible corporate citizen behaviour and other aspects of performance appraisals which are not always measured well with other performance management mechanisms (Campion *et al.*, 2015:85–93). The system allows contrasting ratings to be included in the data set thus further reducing individual biases or perception based rating to influence the outcome of the rating (Campion *et al.*, 2015:85–93; Silverman *et al.*, 2005).

360-degree feedback is also thought to reduce leniency in ratings as the anonymity of supervisors should encourage them to rate an individual truthfully and because there are multiple ratees it would be highly unlikely that leniency in ratings from all individuals would be occurring (Campion *et al.*, 2015:85–93; Silverman *et al.*, 2005). Employees should also more readily accept ratings from multiple sources, as a negative rating from a single supervisor could be constraint as a personal relationship constraint between the employee and supervisor. However feedback is much more difficult to discredit when the same results are received from multiple sources (Campion *et al.*, 2015:85–93). The multiple rating sources have made this method the optimal system for monitoring employee behaviour and implementing an employee development plan based on multiple inputs (Drogomyretska, 2014:38–44).

Additionally Silverman *et al.*, 2005 also contributes some of the following reasons for increased use of 360-degree feedback:

- The detailed information 360-degree feedback provides, enable the implementation of effective and relevant development plans which can be used as an alternative to expensive development centres as it also measures employee behaviours.
- Multiple reporting lines have become prevalent in modern businesses and as such multiple avenues of rating employees has become a necessity.
- Many modern-day businesses work on team-based structures, thus increasing the need for 360-degree type feedback systems.
- Many modern-day companies have a much closer working relationships with various stakeholders (e.g. clients, customers or suppliers) and these parties can provide valuable

information regarding development and usually provide an invaluable new perspective to the company.

- Many companies believe that employing 360-degree feedback will enhance employees' work engagement.
- Various companies also implement 360 feedback systems simply because many other companies have implemented it.

It is argued that 360-degree feedback system also has some of the following advantages at individual and/or organisational level hence, the increased use of the system:

- Some findings suggest it increases an individual's self-awareness and subsequent effectiveness in the workplace (Nowack & Mashihi, 2012:157–182).
- Certain studies show it can improve employee engagement (Morris, 2011).
- It is thought to improve respect and dialogue amongst employees (Morris, 2011).

2.6.7 Disadvantages and problems with 360-degree feedback

Like most appraisal system 360-degree feedback systems also come with some significant disadvantages (Hosain, 2016:21). One of the biggest risks when using the method is the guarantee of anonymity, which is always a contentious issue, as many individuals are involved in the process and in some instances the process is even outsourced, posing an even higher risk to possible information breaches (Drogomyretska, 2014:38–44; Hosain, 2016:21). Feedback poses the risk that the employee may experience unrealistic fear when the appraisal is negative for him or her and they might feel that other raters are victimising them (AA, n.d.:1–8; Baroda *et al.*, 2012:55–66; Hosain, 2016:21). Without proper feedback the appraisal could be seen as a futile exercise, as individual, as most cases require direction on how to improve an exercise in vain as individuals will most probably not take action to improve their performance on their own and in most cases require direction on how to improve (AA, n.d.:1–8; Vukotich, 2014:103–120). In many instances individuals could resist the rating and in the rare case become defiant towards the rating (Vukotich, 2014:103–120). When used as an appraisal system there could also be collusion between raters to give each other mutual high ratings (Baroda *et al.*, 2012:55–66).

The feedback also takes some time to complete, compile and analyse quantitative data in order to give individuals clear and constructive feedback following their rating (Vulkotich, 2014:119).

360-degree feedback systems usually measure various aspects on scales from one to five which could be interpreted differently across different cultural contexts (Vukotich, 2014:103–120). This factor as well as other cultural values can affect the validity of a multi-rater feedback system's results (Vukotich, 2014:103–120).

2.6.8 Obtaining the best results from 360-degree feedback

In a recent paper by Nowack & Mashihi, (2012), they state that according to meta-analytic findings 360-degree feedback can result in behavioural change within an organisation. However, effects are minimal at best and if the process is incorrectly implemented, it could lead to employee disengagement and/or a decrease in performance. In one of Nowack & Mashihi, (2012)'s more recent articles they aim to update the historic "best practices" and questions suggested by authors, such as Bracken, Timmreck, Fleenor, and Summers in 2001, Morgeson, Mumford and Camion in 2005, Craig and Hannum in 2006 and Fleenor, Taylor and Craig in 2008, into 15 important questions modern 360-degree interventions should ask to maximise the effectiveness of a 360-degree process.

The questions posed by Nowack & Mashihi, (2012) are as follows:

- Does 360-Degree Feedback Do More Harm Than Good?

  In most instances 360-degree feedback interventions that are not well designed could potentially increase employee disengagement at both individual and organisational levels (Ilgen, 2000:550–566; Kluger & DeNisi, 1996:254–284). Discouragement and frustration can be pronounced when expected 360-degree feedback is not aligned with the individual's expectation, specifically in the case of negative feedback (Atwater & Brett, 2005:532–548). Self over estimators in managerial positions reacted significantly worse, displaying anger and frustration as opposed to enlightenment or increased awareness towards the 360 feedback process, especially when receiving negative feedback (Nowack & Mashihi, 2012:157–182).

- Does 360-Degree Feedback Work?

  Most researchers agree that 360-degree process can increase self-awareness and both individual and team effectiveness when used under the correct conditions and "best practices" guidelines (Atwater & Brett, 2006:578–600; Fleenor *et al.*, 2008; Reily *et al.*, 1996:599–612).

- What Type and How Many Raters Should Be Included?

  The raters included in the 360-degree process will be largely dependent on the purpose of the exercise; typically the persons included will be superiors, peers, subordinates and other internal clients (Nowack & Mashihi, 2012:157–182).

- Do Ratings Between Rater Groups Agree With Each Other?

  Whereas conventional performance appraisal processes require high interrater reliabilities for valid measurement, 360-degree processes assume that raters from different sources will provide unique and meaningful information (Lance *et al.*, 2008:223–232). There is extensive literature on the differences between rater groups and the interpretation thereof (Le *et al.*, 2007:6–15; Murphy, 2008:148–160; Murphy *et al.*, 2001:130–148). This subject will be discussed further in section- 2.6.11 Discrepancies between different rating sources in 360-degree feedback.

- Do Ratings Within Rater Groups Agree With Each Other?

  According to Nowack & Mashihi, (2012), early meta-analytic studies of the correlation between supervisor ratings and subordinates showed only moderate to weak correlations and could be due to various factors such as selective focus, linguistic barriers and sampling biases.

- Which Response Scale Is Best for 360-Degree Feedback?

  Data suggests that the response scales do in fact have an influence on 360-degree feedback results and some appear to be preferable compared to other. Rating scales are discussed in more details in section-2.6.5 "The 360-degree feedback instrument", of this document (Nowack & Mashihi, 2012:157–182).

- How Many Rating Points Should Be on a 360-Degree Feedback Scale?

  There is no set of standards for category points required in a 360-degree feedback instrument to provide the most reliable data in the 360-degree feedback process. The instrument scales for 360-degree feedback are discussed in more details in section 2.6.5 "The 360-degree feedback instrument", (Nowack & Mashihi, 2012:157–182).

- Should an Individual 360-Degree Feedback Report Contain a Mix of Graphs, Charts, Tables, and Responses to Open-Ended Questions to Maximize Understanding?

  Scant research on the subject of best 360-degree feedback results presentation has been completed (Nowack & Mashihi, 2012:157–182). However different organisations will have different ways they believe are most effective for assimilating such 360-degree results some may prefer qualitative presentations whilst others will prefer quantitative reporting (Nowack & Mashihi, 2012:157–182).

- Can Open-Ended Questions Be Emotionally Damaging to Clients?

  Open-ended voluntary question are common in 360-degree feedback questionnaires and despite the minimal research on the cognitive and emotional reaction to such qualitative feedback these can affect receivers both positively and negatively and should therefore be carefully considered (Nowack & Mashihi, 2012:157–182).

- Does Personality Impact How People Respond to 360-Degree Feedback?

  The ability to implement new behaviours following 360-degree feedback, accept feedback by others and motivation to improve all appear to be directly related to the feedback receiver's personality (Nowack & Mashihi, 2012:157–182). Individuals who are conscientious, goal orientated, extravert, possess high self-efficacy, have internal locus of control, and have low anxiety are most motivated to utilise 360-degree feedback for development (Nowack & Mashihi, 2012:157–182).

- How Do You Manage the Feedback of Under estimators and Over estimators?

  Some research has found that managers, especially males and older managers, tend to overestimate their own leadership effectiveness compared to evaluations by observers (Vecchio & Anderson, 2009:165–179). According to Goffin & Anderson, 2007:271–289,

overestimated self-rating was correlated to self-esteem, high achievement and socially desirable personalities. These candidates are however prone to derailment as they tend to be ignorant as to their own weaknesses and strengths and usually show negative reaction to feedback (Nowack & Mashihi, 2012:157–182).

The other phenomenon of under rating is also present in 360-degree feedback (Nowack & Mashihi, 2012:157–182). These individuals often don't recognise their own strengths identified by others (Nowack, 2009:280–297). These individuals tend to be more emotional, anxious and nervous in their 360-degree feedback interpretations (Goffin & Anderson, 2007:271–289). These individuals usually constitute 25%-30% of individuals taking part in a 360-feedback process and tend to display characteristics such as perfectionism, self-criticisms and tend to focus on their weaknesses with their strengths being thought of as over complimentary ratings (Nowack, 2009:280–297).

- What Kind of Training or Certification by Coaches Is Required to Help Clients Understand and Interpret 360-Degree Feedback Reports?

  Minimum requirement is familiarity with the 360-degree feedback process (Nowack & Mashihi, 2012:157–182).

- Are There Cultural Differences to Be Considered in the Use of 360-Degree Feedback?

  One should expect different results based on cultural differences of participating groups (Nowack & Mashihi, 2012:157–182). A study by Shipper *et al.*, 2007, found that the 360-degree feedback process was most effective in low power distance or individualistic cultures such as the USA. Various self-observer discrepancy relationships exist based on different cultures which will be discussed in more detail in section 2.6.11 "Discrepancies between different rating sources in 360-degree feedback.".

- Does a 360-Degree Feedback Report Require Debriefing?

  For best transfer of learnings, goal setting and general improvement in their job performance it is understood that coaching and debriefing will improve the effects of 360-degree feedback (Nowack & Mashihi, 2012:157–182). Some researchers have found that after one-year elapsing from the time of the 360-degree assessment and subsequent intervention, employees forgot more than 90% of what they have had learnt.

- How Can You Leverage the Impact of 360-Degree Feedback to Ensure Successful Behavioral Change?

  Two important things or aspects need to be considered during the 360-degree process; firstly to carefully manage the emotions of individuals after feedback ; and secondly, to create goals and ensure reaching them ; following the self-awareness assessment result reached by using a 360-degree feedback process (Nowack & Mashihi, 2012:157–182).

2.6.9 Concluding verdict on using 360-degree feedback

Muti-rater feedback systems are considered to be superior compared to traditional methods of performance rating as the advantages outweigh the disadvantages of the system (Kanaslan & Iyem, 2016:172–182). Most authors however still suggest that 360-degree feedback is best used for employee development not as a performance appraisal system and for decision making such as salary increases and promotions (Bracken *et al.*, 2017:761–794; Hosain, 2016:21).

2.6.10 Validity of 360-degree feedback

Many organisations have readily adopted 360- degree feedback systems. However how effective these approaches are in developing and improving employee performance is less clear (Bracken & Church, 2013:34–40; Silverman *et al.*, 2005).

The validity of 360-degree reviews can be further questioned as only weak positive correlations between performance and feedback for 360-degree reviews have been found, whereas in some studies correlations have been found to be negative (Massingham *et al.*, 2011:43–74; Woods, Stephen & West, Michael, 2015). In addition to the many instances of anecdotal evidence of the use of 360-degree feedback, there is disproportionately little empirical evidence available which critically evaluates its impacts (Silverman *et al.*, 2005). Moreover, 360-degree feedback has only achieved mixed success when it has been utilised for performance appraisal purposes (Silverman *et al.*, 2005). Some research even found that there are consistent differences in ratings and thus one should be careful to not be lulled into a false sense of surety that results will be more objective (Van der Heijden & Nijhof, 2004).

2.6.11 Discrepancies between different rating sources in 360-degree feedback.

Typically 360-degree feedback rating systems contain very low correlations (Pearson correlations .3 to .6) between different raters, with convergence observed between self and peer ratings (Grahek, 2008; Nowack, 1992:141–155; Nowack & Mashihi, 2012:157–182).

There are many different factors for discrepancies in ratings of an individual's self-rating compared to those of different raters (Gentry *et al.*, 2010:237–250; Kaiser & Craig, 2005:235–245; Marmet, 2015; Nowack & Mashihi, 2012:157–182).

The main reason suggested for discrepancies is as a result of the way the rater perceives the appraisee. In fact, raters will have varying opportunities to observe target behaviours, be biased in the behaviours they observe, and will attach different importance to different types of behaviours (Kaiser & Craig, 2005:235–245). Another reason suggested for discrepancies in 360-degree ratings is the linguistic properties of rating items; in other words, the interpretation of a questionnaire will be different for each rater. (Kaiser & Craig, 2005:235–245; Van der Heijden & Nijhof, 2004; Vukotich, 2014:103–120).

Most studies find that self-ratings tend to be higher than that of observer or others' ratings. However, there are cases where the opposite has been observed (Massingham *et al.*, 2011:43–74; Mukhopadhyay, 2006).

There are various reasons for inherent higher self-ratings within individuals; the main effect most certainly being the leniency-effect. According to this notion individuals tend to emphasize their merits, downplay their faults and are thus driven by self enhancement (Van der Heijden & Nijhof, 2004). However, discrepancies in self- versus observer ratings may be due to other factors such as job perception- and assessment criteria between individuals, different cognitive processes between individuals and the different feelings and responses experienced by each individual (Campbell & Lee, 1988:302–314). Alternatively, there might be a higher rating of an employee by an observer when compared to self-rating. This is commonly attributed to the halo effect (Van der Heijden & Nijhof, 2004).

Discrepancies in ratings are also expected to differ in different cultural groups (Nowack & Mashihi, 2012:157–182). Cultural dimensions such as individualism versus collectivism, power distance, uncertainty avoidance, short-term versus long-term orientation and gender egalitarianism have been thoroughly studied and appear to affect 360-degree ratings (Hofstede & McRae, 2004:52–88;

Nowack & Mashihi, 2012:157–182). Research has found that self-other rating discrepancies were higher in cultures which displayed higher individualism and lower power distance (Nowack & Mashihi, 2012:157–182). Examples of such occurrences are in Latin American cultures where Varela & Premeaux, (2008) found that the lowest discrepancies were between peers and self-ratings and were as a result of observers giving their managers very high ratings. Researchers such as Gentry *et al.*, (2010), found that higher self-ratings in individualistic higher power cultures was the main reason for higher self-observer rating discrepancies and not observer ratings.

Different measurement items however show different levels of self-other discrepancies within different cultures and are also associated with different factors such as job performance, employee effectiveness and derailment, depending on the culture/country being measured (Nowack & Mashihi, 2012:157–182). For example, in a study by Gentry *et al.*, (2010), comparing 22362 U.S managers to 3810 Asian managers it was found that self-other discrepancies were a measure of the likelihood of the subject to experience future derailment. Atwater *et al.*, (2005), states that self-other discrepancies may also be related to high assertiveness and power distance and linked to effectiveness in countries such as the U.S but not European countries. Self-observer discrepancies in measurements of decisiveness and composure were higher in power distant cultures (Asian) compared to other cultures that displayed lower power distance such as in the Americas (Eckert *et al.*, 2010:259–278).

In other studies it was found that self-ratings for older managers and males displayed higher discrepancies compared to observer ratings indicating that even age and gender appear to show correlations with higher self-other rating discrepancies (Vecchio & Anderson, 2009:165–179).

2.7 CHAPTER SUMMARY

The use of 360-degree feedback performance appraisal methods have become very prevalent in modern day companies. There are various reasons why companies implement 360-degree feedback, most of all being that it appears to be the present trend. As more performance and subsequent remuneration and employee advancements are, and in the future, most probably will be based on the results of such ratings, the importance to evaluate the accuracy of such rating systems cannot be stressed enough.

As little empirical evidence is available, many questions exist regarding the validity of 360-degree feedback systems, specifically the validity of its use in performance appraisals.

Discrepancies often exist between self- and observer ratings or even between different raters of the same appraisee. There are many suggestions to explain these phenomena, but empirical evidence is scant at best. There is thus a need for more empirical studies as well as possible formulation of new hypotheses to explain rating discrepancies which can contribute to the better understanding and utilisation of 360-degree reviews.

CHAPTER 3 METHODOLOGY AND RESULTS

3.1 METHODS

3.1.1 Introduction

This section serves to present the research process by describing the measuring instrument, data collection method, the data population, sampling method, the analytical methods utilised as well as ethical considerations. The description of the process serves to enable further research to replicate the process if necessary.

3.1.2 RESEARCH APPROACH

Research commonly takes either a quantitative of qualitative approach. As stated previously this study utilised a quantitative approach to data gathering and analyses. As the data that was analysed was objective and consists of numbers and correlations/discrepancies between numbers, a quantitative approach was the most feasible approach for the study as it also provides greater precision and statistical validity (Matveev, 2002:59–67; Welman *et al.*, 2011).

As the main objective of the study was to elucidate correlations/discrepancies between different rating sources the use of the quantitative approach was further justified, and a questionnaire/ statement agreement scale survey instrument was utilised to collect data.

3.1.3 RESEARCH DESIGN

A cross-sectional survey was undertaken on self- and observational ratings of the subjects' behaviour with participants only being asked once to complete a survey, in this case self- and multiple observation ratings of subjects' behaviour in the workplace. The use of self-designed 360-degree feedback measurement instruments are common, as there is no one standardised measurement for every company and the tool utilised depends on the requirements, objectives and culture of the company conducting the measurements (Bracken *et al.*, 2017:761–794; Fleenor & Prince, 1997). In this study the measurement instrument was constructed by the MD Human Resources department, consisting of 20 statements divided into four constructs/ themes which aligned with MD's company values (Table 1). Research in the study can be considered descriptive, as the main objective of the study will be to identify the relationship between self and observer ratings in 360-degree feedback. Firstly the employees were asked to complete a self-survey and

then were asked to complete ratings on specific superiors, peers and in the case of managers, subordinates. In the case of manager, subordinates were nominated by the Human Resources department of MD as to ensure the respondent rated other employees with whom the employee had daily interactions

3.1.4 RELIABILITY AND VALIDITY

Reliability and validity respectively refer to how accurately the research represents what is actually happening and how credible the results obtained from the study are (Welman *et al.*, 2011). The study utilised Cronbach's alpha as a measure of reliability for research results obtained. The Cronbach Alphas were calculated for the four different constructs/themes as well as for the four different types of ratings encountered in the study. All showed values higher than 0,8. The results can be seen in Table 3 and Table 4. The study also utilised the mean inter-item correlations of the different rating types in order to prove reliability (See Table 5).

3.1.5 Measuring instrument

The necessary demographic information for the participants were gathered from the Human Resources department of MD. To ensure the anonymity of the participants limited demographic information was requested; namely the position of the employee i.e. manager, supervisor or subordinate, gender and country or specific division employed in; as well as level of education/qualification.

The measuring instrument focused on measuring the frequency in which the subject displays a certain behaviour related to a statement on the survey as well as self-rating. Observers also provided a rating of the subject utilising a Likert-type 5-point scale. The participants were asked to rate the behaviours on the following scale; 1-always demonstrates this behaviour, 2-usually demonstrates this behaviour, 3-sometimes demonstrates this behaviour, 4-rarely demonstrates this behaviour and 5-never demonstrates this behaviour. The behaviour statements measured by the survey are illustrated in Table 1. It is important to note the researcher, as also stated in Chapter 1, inverted this rating scale for easier graphical and statistical interpretation.

Table 1: Table indicating the different construct/themes the measurement instrument utilised for self and observer ratings.

Theme/Construct	Theme/Construct heading	Statement
C1	**We invest in relationships**	S1: makes me feel valued
		S2: builds strong positive relationships
		S3:encourages me to deliver high quality work in accordance with the Firm's standards
		S4: recognises my efforts and successes
		S5: is available to help and support me when I need it
C2	**We support a culture of growth, innovation, and people development**	S6: encourages innovation and creativity and encourages the contributions of others
		S7: supports me in my learning, personal growth and development
		S8: willingly and proactively shares knowledge and experience with me and the team
		S9: set clear goals and measures this objectively and fairly
C3	**We focus on quality, operational efficiency and a safety work environment**	S10: is performing at the level that he should for the position that he holds
		S11: communicates proactively and adequately to me/others on matters
		S12: provides meaningful and constructive feedback with clear, relevant examples
		S13: takes responsibility for his area and do not blame others if things go wrong
		S14: supports me in balancing my life outside of work considering the needs of the business
		S15: " walks the talk" and leads by example
C4	**We expect honesty and integrity**	S16: demonstrates the importance of delivering high quality client service
		S17: demonstrates high compliance to company rules, policies, procedures and the firms code of conduct
		S18: word is his bond and you can believe him if he promises to do something
		S19: is consistent in his behaviour and you know where you stand
		S20: has strong moral principals and will not let others or situations make him deviate from these principles

3.1.6 PROCEDURE

Initial Preparations

The Human Resources department of MD was informed of the researcher's intention to utilise the information before the information was collected. Written permission was also gained from MD for the participant to utilise the information (Appendix D Permission letter from company to use data).

Ethical Considerations

The Human Resources department of MD ensured strict confidentiality to all participants completing the survey. All participants in the initial email circulation accompanying the survey were informed that all their information would be kept strictly confidential. The MD Human Resources department thus ensured that the personal information of the subjects was modified to be totally anonymous before it was handed over to the researcher.

Data Capturing and feedback

The survey results were received from the Human Resource Department via email. The data was captured in MS Excel and was coded and cleaned to allow for easier exporting into statistical analysis and graphing software programs SPSS and Sigmaplot.

The email with a link to the survey was the most convenient way to reach all the employees as; all had access to emails and were also spread across multiple divisions and countries. The email gave the employees clear instructions as to the confidentiality of the survey, as well as the fact that it would only take approximately 10-15 minutes to complete the rating. The participants were given 21 days to complete the survey.

3.1.7 SAMPLE SELECTION

Sampling is the process by which a unit is chosen within a population so as to generalize the data back to the whole population (Trochim, 2006:34) The sample was collected from the total target population of the company from each individual who chose to participate at managerial and supervisor levels. The data was easily accessible and convenient for the researcher to collect in terms of time and cost. The sample strategy followed was thus convenience sampling as stated in Bryman *et al.,* 2015. Of the 100 surveys sent to participants via email, 80 participants provided and received multi-rater ratings in this study from top-down to peer to subordinate ratings with a total of

273 ratings of multiple sources being collected. This gives the impression that the data will deliver representative results. However, not all employees completed the questionnaire which in effect makes the sampling random probability sampling.

3.1.8 STATISTICAL ANALYSIS

As mentioned previously the scale used in this study was inverted; scale utilised in the study (1=highest frequency of behaviour and 5=lowest frequency of behaviour) the reasons being greater ease to interact with data; graphical interpretations and presentations of the scale utilised in this study. Once the primary data was received via email and adapted as per above, it was cleaned and coded by the researcher utilising MS Excel. This allowed for easier export to other statistical analysis programs. The data was analysed utilizing IBM 2013 SPSS Statistics Version 22 and graphs were created utilizing Sigmaplot V14.0.

IBM 2013 SPSS Statistics Version 22 was utilised for descriptive statistics to determine rating frequency means and standard deviations of each type of rating across all measurements and constructs/themes. The absolute difference between self-ratings and observer ratings (calculated from the means of peer, upwards and top-down ratings) could then be determined and presented for the different demographic groups sampled in the study.

According to Streiner (2003), Cronbach's alpha (α) is the most commonly used measure utilised for internal consistency and reliability and was thus applied to the total data set, the various construct/themes and different types of ratings (Table 3 and Table 4). As a general rule value for Cronbach alphas above 0.7 is considered acceptable and any value above 0.9 is considered as excellent (Muijs, 2011). The Cronbach alpha for the total data set was measured at 0,9.

As an additional measure of internal data reliability, the mean inter-item correlation coefficients or Spearman's rho between self-ratings and the various observer rating types were also calculated, with all items showing a significant linear association between inter item mean correlations of higher than 0,75 (Table 5).

3.1.9 RESEARCH OBJECTIVES

Below the main objectives of the research study are summarised. The primary objective of the study used analyses to firstly explore the relationship between 360-degree feedback self-ratings and observer ratings, for the purpose of determining the differences/discrepancies between self and observer ratings, and secondly, to elucidate what the reasons and consequences of such discrepancies can mean.

The following were the objectives of the study:

- Determine if 360-degree feedback systems display discrepancies between self and observer ratings within MD.
- If discrepancies exist, are they quantifiable and can one elucidate the reasons for such discrepancies?
- Determine if observations of 360-degree feedback reviews within MD are similar to results found in literature.
- What are the implications of using 360-degree feedback reviews for MD in terms of employee job performance improvement and identification of developmental needs and behavioural changes?

The researcher firstly set out to achieve the primary objective, requiring three, interlinked actions i.e. to determine if there were discrepancies between self- and observer ratings, secondly to quantify the discrepancies and then to hypothesize the possible reasons for discrepancies.

3.1.10 CONCLUSION

The general objective of the study was to analyse the possible discrepancies between self- and observer ratings in 360-degree feedback performance review systems. An empirical study using a quantitative approach was used. The data utilised was obtained with the necessary permission from Master Drilling (Pty) Ltd, following a 360-degree feedback pilot survey that was completed in 2015. The study targeted employees throughout the whole organisation at supervisory levels and above. All participants targeted were sent a survey via email and given 21 days to complete it. The results of the survey findings are presented in section 3.2 of this chapter.

3.2 RESULTS

3.2.1 Introduction

The previous section provided a description of the methodology applied during the study. This section will provide the demographic breakdown of the participants in the study, present measures taken to ensure the reliability of the data as well as presenting the descriptive results of the different types of rating source and different demographic groupings. Finally, the results will be present and the differences in mean self- and observer ratings for different rating sources as well as different groups will be compared.

Response rate

Of the 100 surveys sent to participants 80 participant fully or partially completed the survey, resulting in an 80% response rate. The high response rate thus allowed the researcher to generalise the results with greater confidence (Creswell, 2005).

3.2.2 Biographical information

Most responses were collected from the Latin American division of the company with 41% of responses. The second most responses were from MDX (23%), the exploration division of MD, which is also based in South Africa (Table 2).

For the purposes of the study the employees were divided into two employment levels namely, managers and supervisors with 11% of respondents being classified as managers and 89% as supervisors (Table 2). Most respondents were males at 94% compared to females at 6% (Table 2).

The employees were also classified according to how long they have been employed by MD ranging from 51% of respondents being employed less than 5 years, 35% working at MD between 5 and 10 years, to 14% of employees being employed by the company for more than 10 years (Table 2).

Furthermore, respondents were also classified according to their highest level of education. 41% of employees possess a post-school diploma; 28% hold a university degree; and 25% only have high school education. Only 6% of participants possess a post graduate qualification or higher (Table 2).

Table 2 indicates that respondents originated from six countries with more than half of the responses (51%) coming from South Africa. The least number of respondents were from Brazil (4%) and China (8%).

In terms of responses from divisions within MD, most responses were collected from the Latin American division of the company with 41% of responses (Table 2). The second highest response rate was from MDX (23%), the exploration division of MD, which is also based in South Africa (Table 2).

For the purposes of the study the employees were divided into two employment levels namely managers and supervisors with 11% of respondents being classified as managers and 89% as supervisors (Table 2). Most respondents were males at 94% compared to females at 6% (Table 2).

The employees were also classified according to how long they have been employed by MD; with 51% of respondents being employed less than 5 years, 35% working at MD between 5 and 10 years and 14% of employees being employed by the company for more than 10 years (Table 2).

Table 2: Biographical information of sample population.

Item	Frequency n=80	Percentage % n=80
Country		
China	6	8%
Brazil	3	4%
Peru	10	13%
Mexico	10	13%
Chile	10	13%
South Africa	41	51%
Division		
MDX	18	23%
MDSA	14	18%
DTS and Africa	9	11%
MD China	6	8%
MD Latin America	33	41%
Employment level		
Manager	9	11%
Supervisor	71	89%
Gender		
Male	75	94%
Female	5	6%
Years employed in company		
0-5 years	41	51%
5-10 years	28	35%
10+ years	11	14%
Level of education		
Postgraduate	5	6%
University degree	22	28%
Post-school diploma	33	41%
High School graduate	20	25%

3.2.3 Reliability of data

Cronbach alphas were calculated to test the reliability of the dataset. Table 3 indicates the Cronbach alphas for the various themes/constructs utilised in the measuring instrument. All constructs/themes measured above the suggested 0.6, which is acceptable for a dataset utilised in Social Sciences. The highest measurement was construct C4- "We expect honesty and integrity"

and the lowest Cronbach alpha was measured for construct C2- "We support a culture of growth, innovation, and people development" (Table 3).

Table 3: Cronbach alpha measures of different construct/theme statements.

Theme/Construct	Statement	Cronbach α
C1	**We invest in relationships**	0.88
C2	**We support a culture of growth, innovation, and people development**	0.84
C3	**We focus on quality, operational efficiency and a safety work environment**	0.86
C4	**We expect honesty and integrity**	0.93

Table 4: illustrates the Cronbach alpha values of the various rating sources. All rating source possessed a Cronbach alpha value greater than 0.98, indicating the dataset is highly reliable (Table 4). The highest Cronbach alpha values were obtained for peer and upwards ratings data at 0.99, with self and top-down ratings data showing a slightly lower value of 0.98 (Table 2).

Table 4: Cronbach alpha measures of different rating sources.

Rating type	Cronbach α
Self	0.98
Top-down	0.98
Peer	0.99
Upward	0.99

The mean inter-item correlation or Spearman's rho, comparing self- to observer rating sources, all indicated a very strong correlation between the different rater sources (Table 5). The correlation between self-ratings and the means of all observer ratings was very good at .823 (Table 5). The rating source with the highest correlation to self-ratings was upwards ratings with a correlation of 0.789, followed by peer ratings with 0.770 and top-down ratings with 0.764 (Table 5).

Table 5: Correlation coefficients for different rating sources and mean of all observer ratings

Rating source	Self all	Observer all	Top-down all	Peer all	Upward all
Self all	1,000				
Observer all	.823	1,000			
Top-down all	.764	.953	1,000		
Peer all	.770	.944	.891	1,000	
Upward all	.789	.891	.758	.778	1,000

**Correlation is significant at the 0.01 level (2-tailed)

3.2.4 Descriptive statistics for self-ratings and different observer rating sources

The reliability measure in the previous section indicates the measurement instrument results are acceptable for utilisation in further statistical analysis of the dataset.

The following section will explore the descriptive statistics, comparing the various constructs/themes and rating sources.

This section will determine the means and standard deviations of the different construct/ themes, statements and rating sources. The means and standard deviation for each statement per rating source are listed in Appendix B: Results per measurement item.

From Table 6 and Figure 6 it can be seen that for the total dataset the mean of self-ratings is considerably higher at 4,37 compared to any of the other observer rating sources. The lowest mean rating was for individuals' peer ratings with a mean rating of only 3,87 followed by ratings by an individual's subordinate at 4,08 and superior at 4,07 (Table 6).

Table 6: Descriptive statistics for all rater sources (please note observer rating represents a mean of all rating types excluding self-ratings).

Descriptive Statistics		
Rating source	**Mean**	**Std. Deviation**
Self all	4,37	0,21
Upward	4,08	0,24
Top-down all	4,07	0,2
Observer all	4	0,19
Peer	3,87	0,19

Absolute differences between self-ratings and observer ratings means

Figure 5 indicates that the biggest discrepancies occur between self-ratings and peer ratings, with an absolute difference between mean ratings for the entire dataset at 0,5. This is followed by self vs top-down rating differences at 0,37 and self vs upward ratings with an absolute difference of 0,29.

Figure 5: Graph indicating the differences in means between self-ratings and various observer rating sources for the entire dataset.

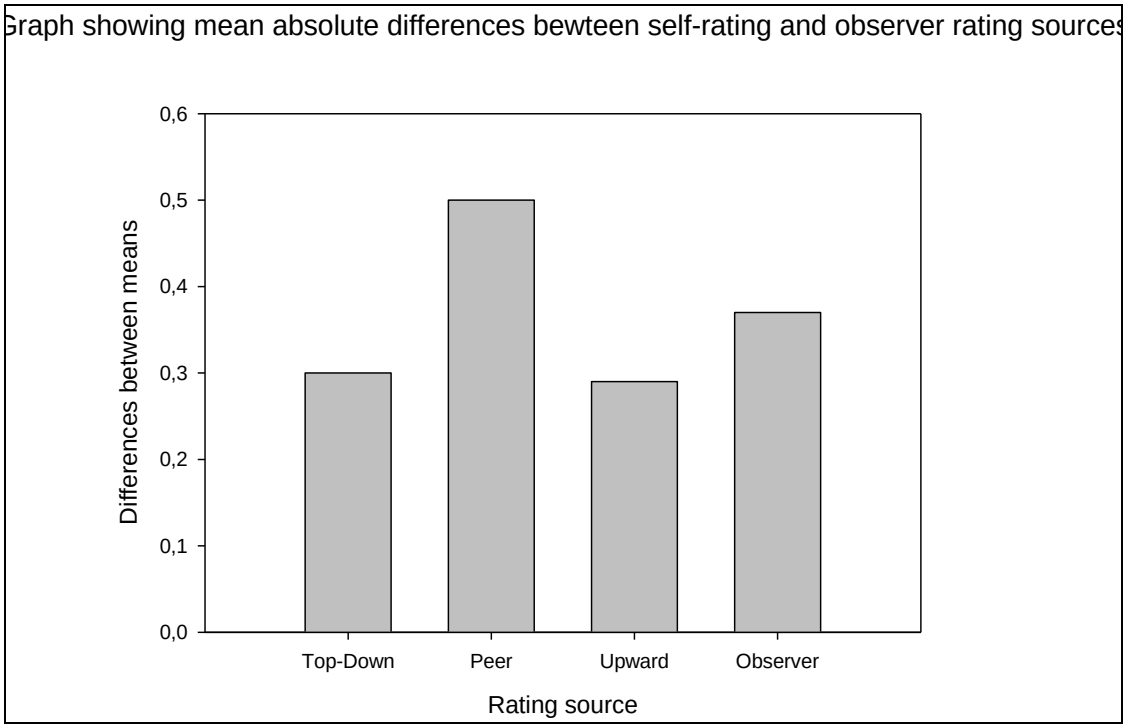


Figure 6: Bar chart indicating the average response for each category in the questionnaire per rating source.

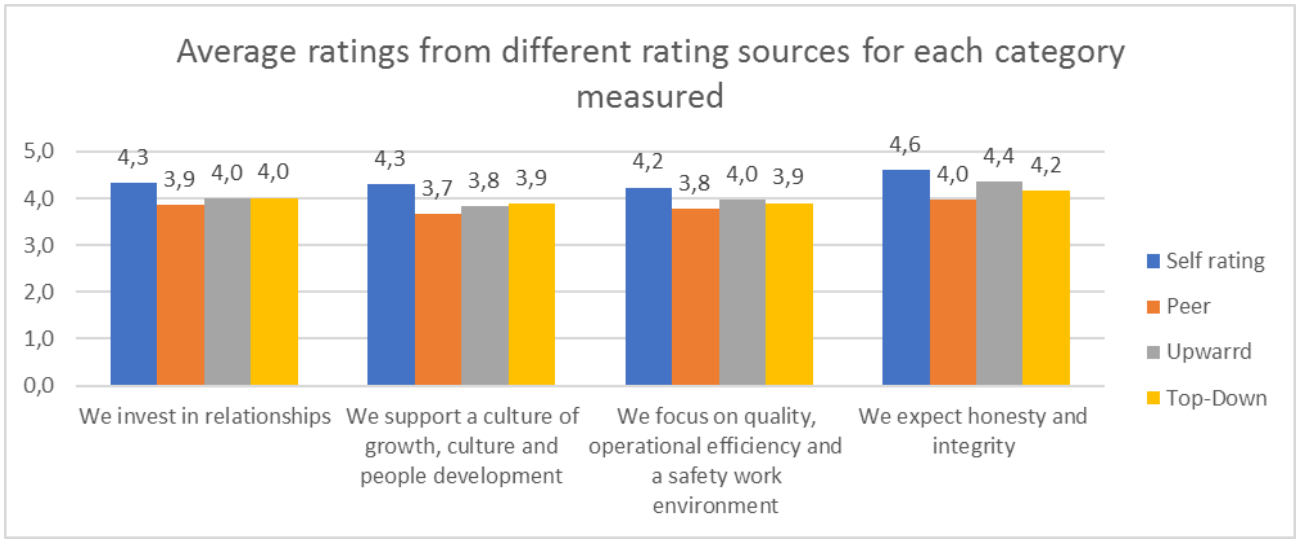
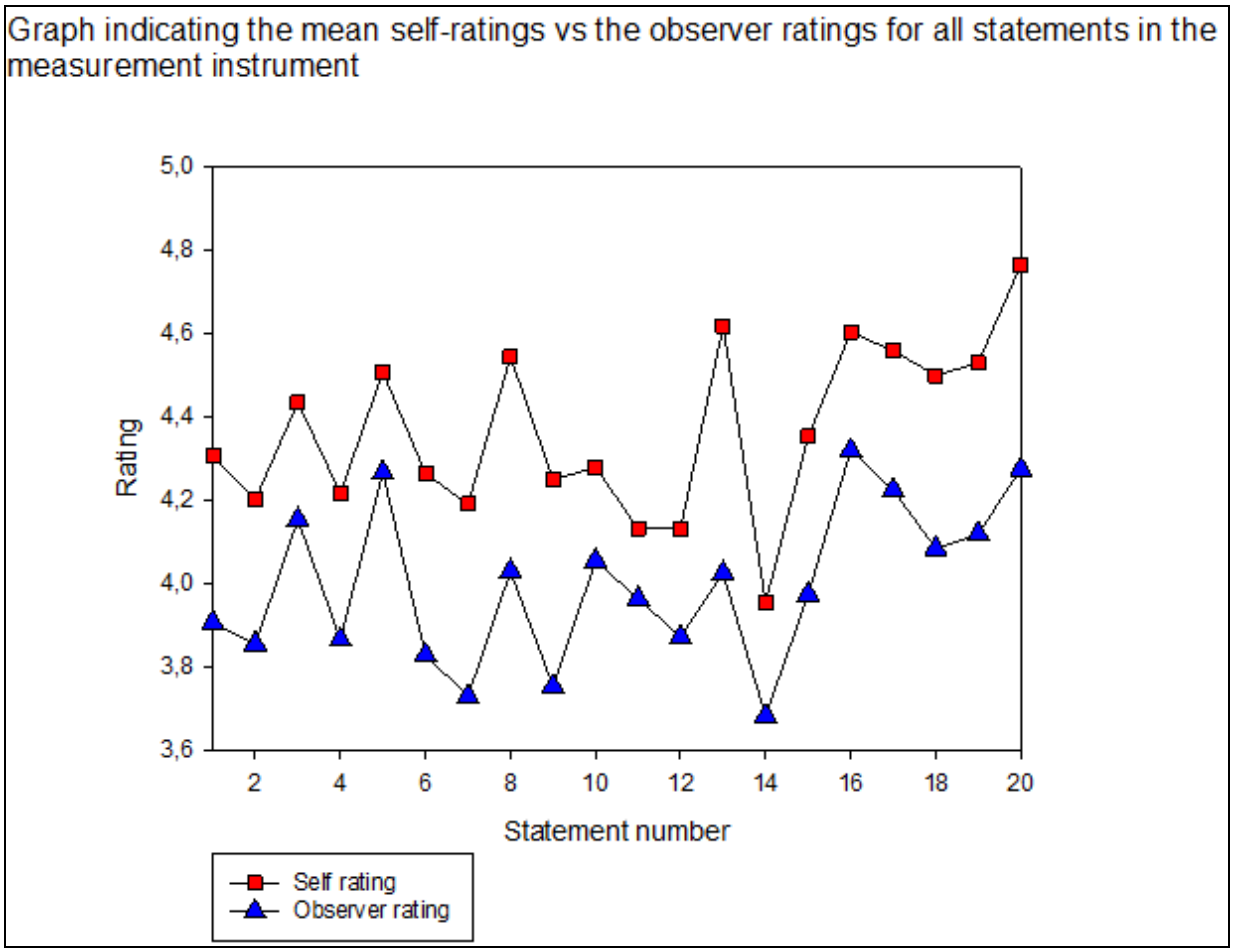


Figure 7 illustrates the mean ratings for all respondents for each statement for self- and observer rating. The difference between the mean self-ratings and observer ratings are illustrated in Figure 8.

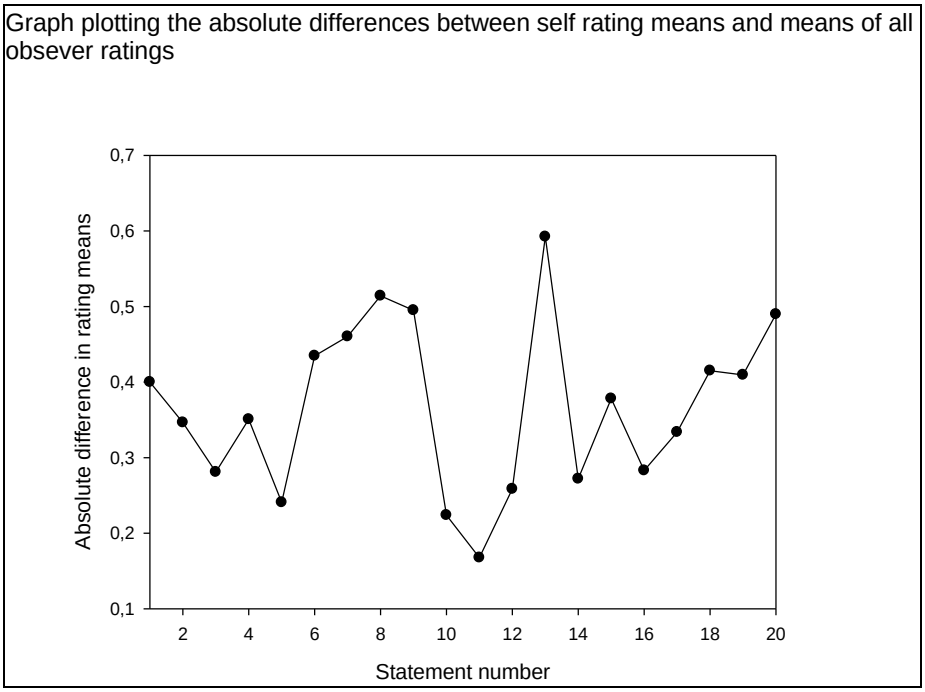
Figure 7: Graph indicating the mean self-ratings compared to the mean observer ratings for each statement in the measurement instrument. Self-rating means are indicated in red and observer rating means are indicated in blue.



The largest rating discrepancy is encounter for statement S13 with an absolute difference between self- rating and observer means of 0,59 with the lowest discrepancy being observed for statement S17 with an absolute difference of 0,17 (Figure 8 and Table 1). The average differences were in rating responses between self-ratings and observer ratings (0,37) (Figure 6 and Figure 8).

Statements S6 to S9 displayed larger discrepancies of between 0,43 and 0,50. Statement S20 displayed a significant discrepancy at 0,49 (Table 1 and Figure 8).

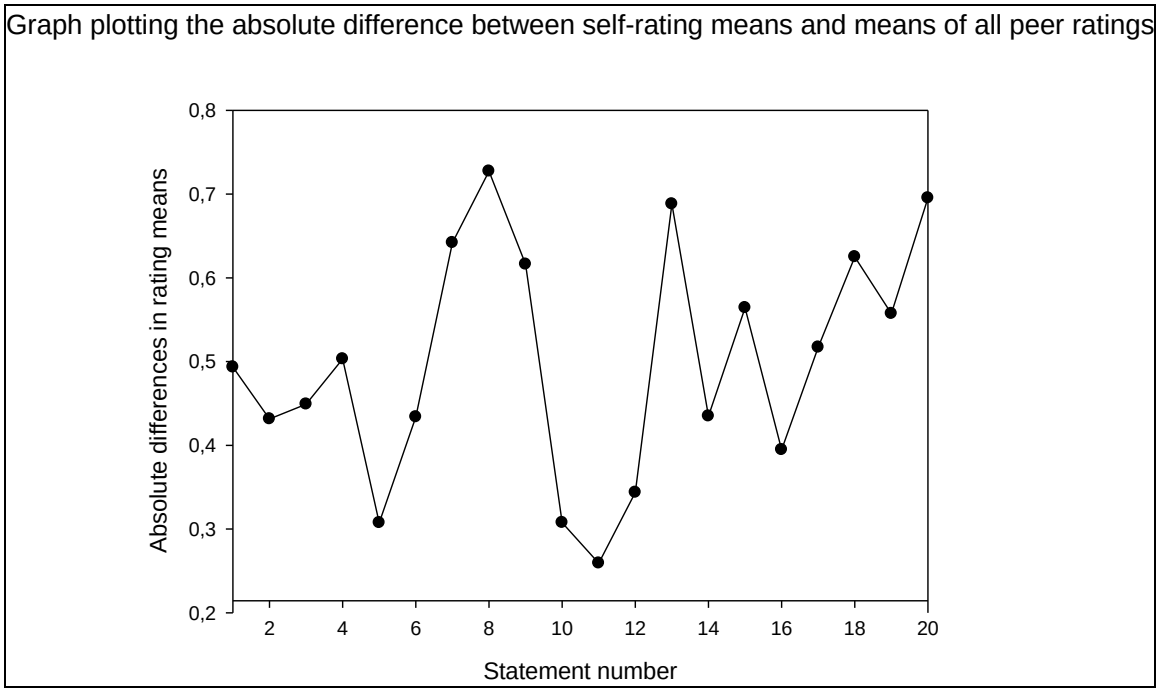
Figure 8: Graph illustrating the absolute difference between mean self-ratings and all other rating source means of the entire dataset.



Absolute differences between means of self-ratings and peer ratings

As the discrepancies between self-rating and peer ratings were the most significant, these are examined first. The absolute differences in mean self-ratings and peer ratings for each statement are plotted in Figure 9. The highest discrepancies between mean self-ratings and peer ratings was observed for statement 8 at 0,72 with the lowest difference measured for statement S11at 0,26 (Figure 9 and Table 1). Other statements that also showed significant discrepancies (above 0,4) were statements S1, S2, S3, S4, S7, S9, S13, S15, S17, S18, S19 and S20 (Figure 9 and Table 1). Statements with lower discrepancies (lower than 0,4) were observed for statements S5, S10, S12 and S16 (Figure 9 and Table 1).

Figure 9: Graph indicating the mean differences between self-rating responses and peer rating responses for each statement in the measurement instrument.

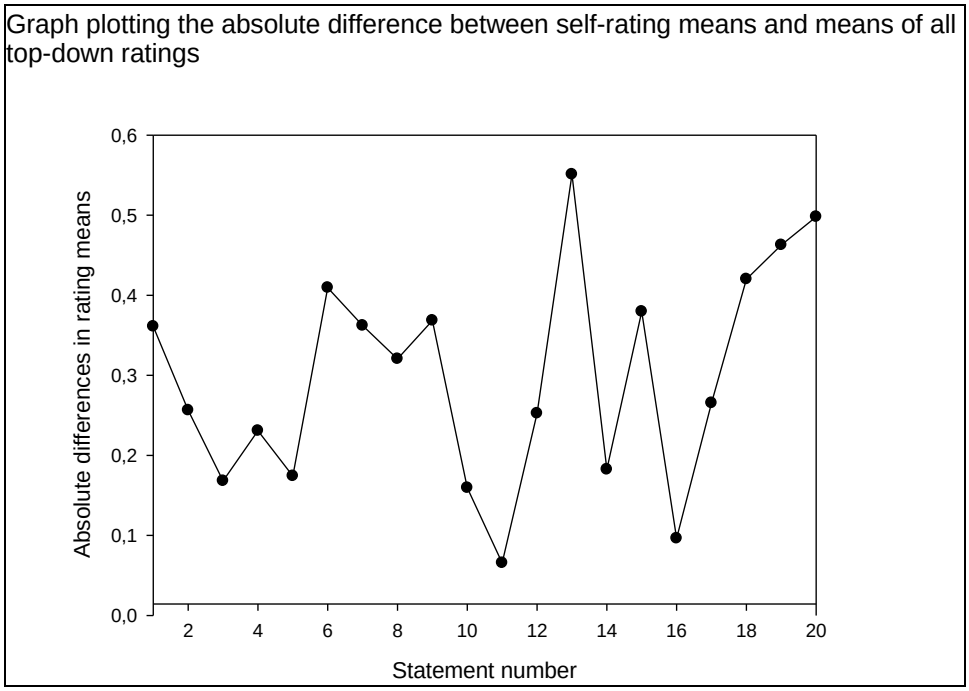


Absolute differences between means of self-ratings and top-down ratings

Figure 10 shows the absolute differences for the means of all self-rating responses compared to the mean responses of top-down ratings for each statement in the measurement instrument. The largest difference in these rater sources can be observed for statement S13 at 0,55 and the smallest discrepancy for statement S11 at 0,07 (Figure 10 and Table 1).

Other statements showing larger (above 0,4) discrepancies between these rating sources were statements S6, S18, S19 and S20 (Figure 10 and Table 1). Statements S1-S5, S7-S12, and S14-S17 showed discrepancies lower than 0,4 (Figure 10 and Table 1).

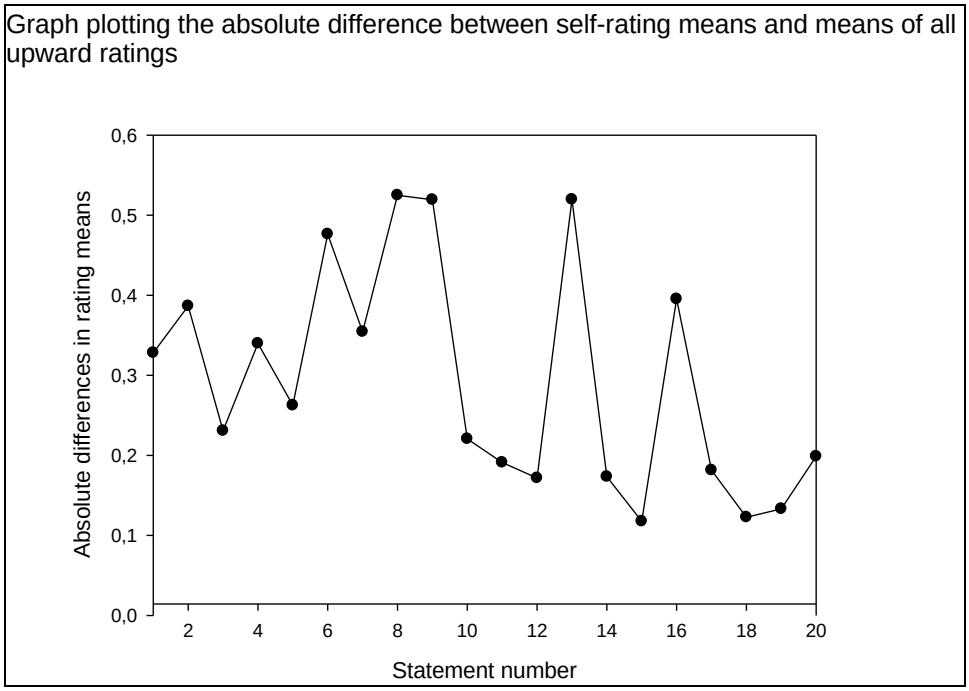
Figure 10: Graph indicating the mean differences between mean self-rating responses and top-down rating responses for each statement in the measurement instrument.



Absolute differences between mean self-ratings and upward ratings

The discrepancies in the form of absolute difference values between self-rating means and peer rating means can be seen in Figure 11 below. The highest discrepancy is observed for statement S8 at 0,52 with statement S15 displaying the lowest value at 0,12 (Figure 11 and Table 1). Statements with discrepancies higher than 0,4 were S6, S9 and S 13 (Figure 11 and Table 1). Statements displaying lower discrepancies (lower than 0,4) were statements S1-S4, S5, S7, S10-S12 and S14-S20 (Figure 11 and Table 1).

Figure 11: Graph indicating the mean differences between self-rating responses and upward rating responses for each statement in the measurement instrument.



3.2.5 Descriptive statistics for self and obsever data for different demographic groups

Self-vs observer mean rating discrepancies for different nationalities

The mean values of peer, upward and top-down ratings are calculated (observer rating) and presented in Table 7 versus the self-rating means for each country. Self-rating means per country for every country in the study was higher than the mean observer rating in every instance (Table 7). The highest self-rating mean was calculated for South Africa at 4,46 with Mexico's self-rating mean displaying the lowest value at 4,14 (Table 7 and Figure 12). All countries showed mean self-ratings higher than 4 (Table 7). In contrast most countries displayed observer rating means with a value of less than 4 with only China and Brazil indicating observer ratings higher than 4 (Table 7).

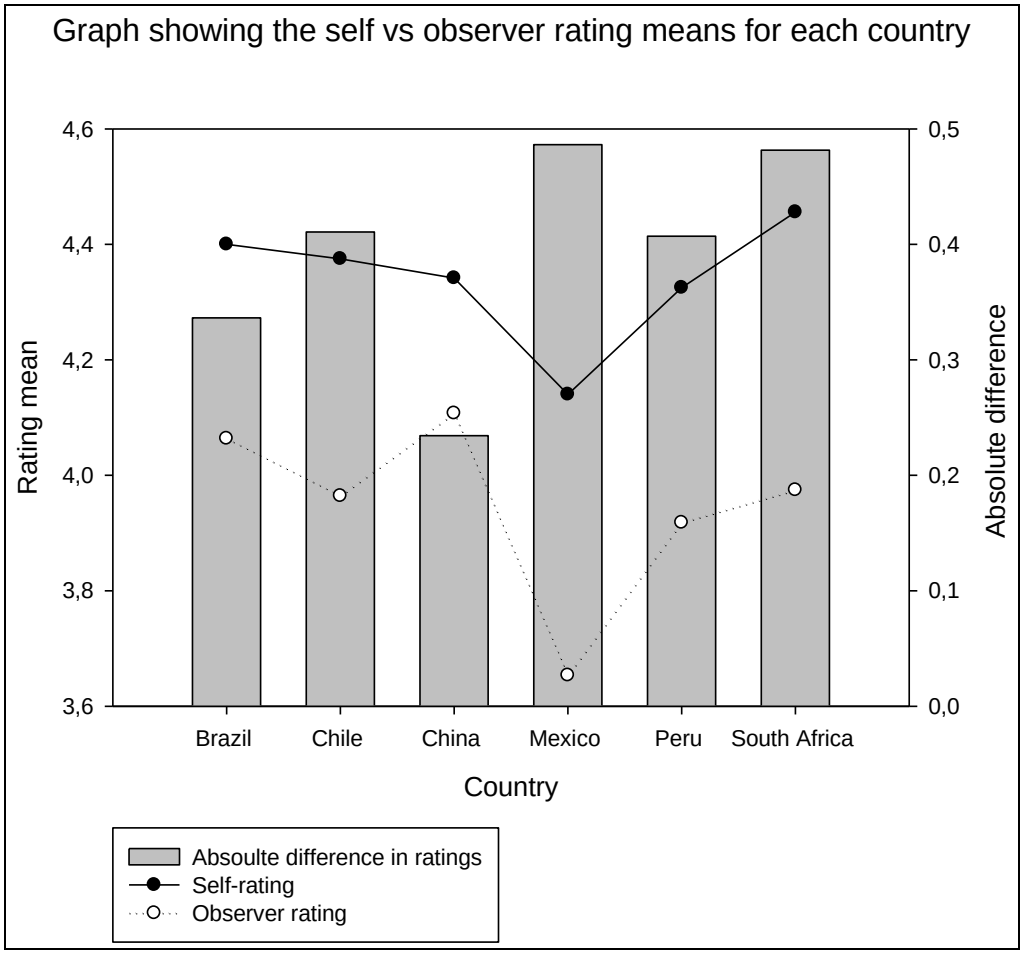
Table 7: Descriptive statistics for self and observer rating means per country (please note observer rating represents a mean of all rating types excluding self-ratings).

Descriptive Statistics			
Rating source	**N**	**Mean**	**Std. Deviation**
South Africa self	30	4,46	0,4
Brazil self	5	4,4	0,3
Chile self	10	4,38	0,45
China self	6	4,34	0,31
Peru self	8	4,33	0,29
Mexico self	10	4,14	0,42
China observer	21	4,11	0,54
Brazil observer	17	4,06	0,56
South Africa observer	86	3,97	0,75
Chile observer	30	3,96	0,64
Peru observer	21	3,92	0,63
Mexico observer	28	3,65	0,57

China displayed the highest mean observer rating with 4,11, followed by Brazil, South Africa, Chile, Peru and Mexico (Figure 12 and Table 7).

The discrepancies (absolute difference between self and observer rating means) can be seen in Figure 12. Mexico showed the highest discrepancy at 0,49 followed by South Africa (0,48), Chile (0,41), Peru (0,41), Brazil (0,33) and China with the lowest discrepancy at 0,33 (Figure 12).

Figure 12: Plot showing the mean self and observer ratings per country as well as the absolute difference between self and observer ratings (self-rating means >observer rating means).



Self-vs observer mean rating discrepancies for difference company divisions

When comparing the different divisions in the company all the self-rating means once again showed higher values compared to their corresponding observer mean ratings (Table 8 and Figure 13). The highest self-rating mean was measured for MDSA (4,63) followed by MDX with 4,43, MD China (will show same results as China country) at 4,43, MD Latin America with 4,3 and DTS which showed the lowest self-rating at 4,23 (Table 8 and Figure 13). All divisions thus showed mean self-ratings higher than 4 (Table 8).

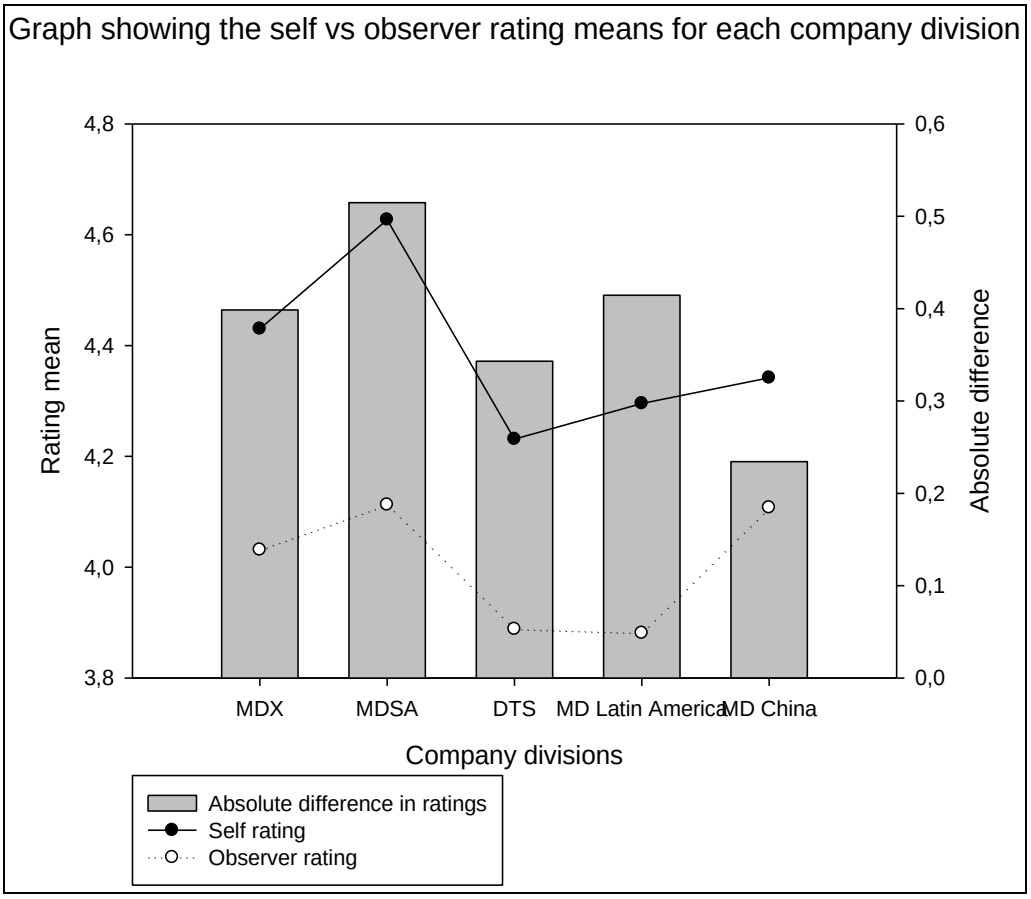
MDSA also displayed the highest observer rating mean at 4,11 followed by MD China (will show the same results as China) (4,11), MDX (4,03), DTS (3,89) with MD Latin America displaying the lowest mean observer rating at (3,88) (Table 8 and Figure 13). All divisions except for MDSA and MD China shows observer ratings lower than 4 (Table 8 and Figure 13).

The highest absolute difference between self-and observer means was for MDSA (0,51) followed by MD Latin America (0,41), MDX (0,40), DTS (0,34) and MD China showing the smallest discrepancy between rating at 0,23 (Figure 13).

Table 8: Descriptive statistics for self and observer rating means per company division (please note observer rating represents a mean of all rating types excluding self-ratings).

Descriptive Statistics			
Rating source	**N**	**Mean**	**Std. Deviation**
MDSA self	12	4,63	0,34
MDX self	10	4,43	0,38
MD China self	6	4,34	0,31
MD Latin America self	33	4,30	0,38
DTS self	8	4,23	0,44
MDSA observer	28	4,11	0,49
MD China observer	21	4,11	0,54
MDX observer	35	4,03	0,71
DTS observer	22	3,89	0,58
MD Latin America observer	96	3,88	0,62

Figure 13: Plot showing the mean self and observer ratings per division as well as the absolute difference between self and observer ratings (self-rating means >observer rating means).



Self-vs observer mean rating discrepancies between manager and supervisory levels of employment

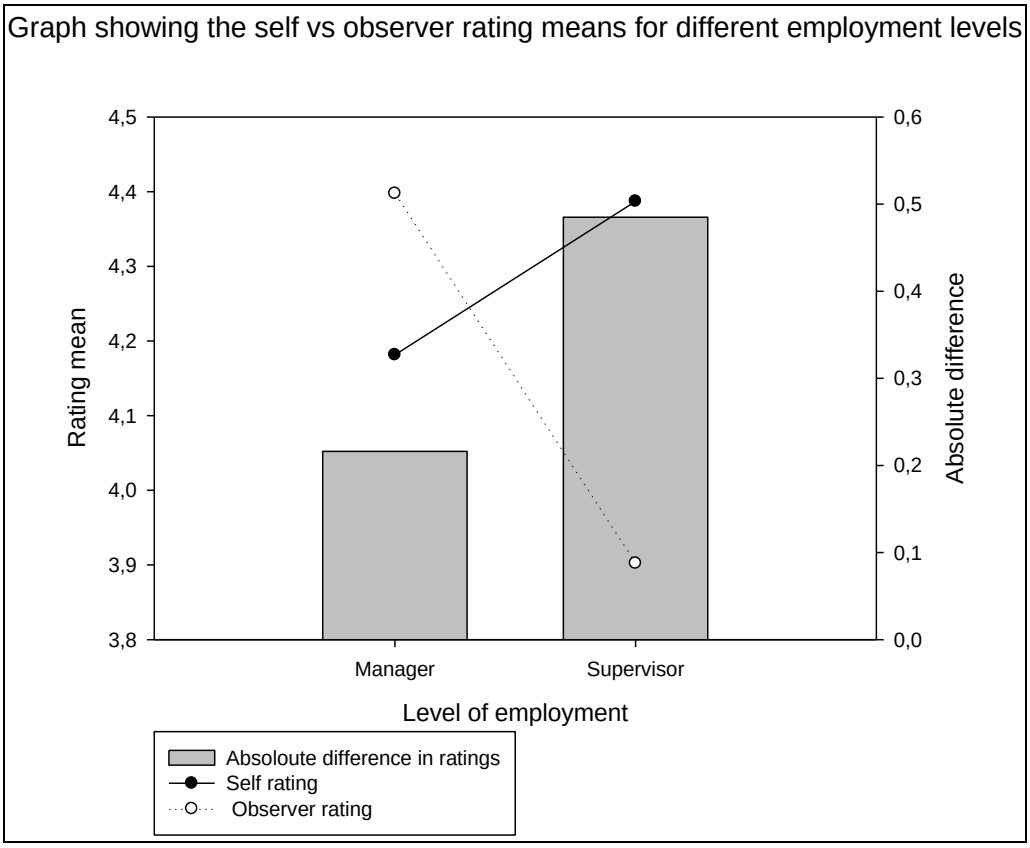
The mean self-ratings for supervisor were higher at 4,39, compared to the mean self-ratings for managers at 4,18 (Table 9 and Figure 14). In contrast the managers showed the higher mean observer rating with 4,40, compared to supervisors with a mean rating of 3,90 (Table 10). It should be noted that there were very few managerial level self-ratings (N=6) (Table 9).

The absolute difference between the mean self and observer ratings for the different levels of employment was 0,49 for supervisors and 0,22 (was a negative value=observer rating> self-rating) for managers (Figure 14). It should be noted that the mean observer ratings for managerial level of employment was higher compared to the managerial self-rating. From this it can be deduced that on average managers rated themselves lower then they were rated by observers.

Table 9: Descriptive statistics for self and observer rating means for manager and supervisory levels of employment (please note observer rating represents a mean of all rating types excluding self-ratings).

Descriptive Statistics			
Rating source	**N**	**Mean**	**Std. Deviation**
Manager self	6	4,18	0,41
Manager observer	25	4,40	0,51
Supervisor self	63	4,39	0,39
Supervisor observer	177	3,90	0,60

Figure 14: Plot showing the mean self and observer ratings for manager and supervisory levels of employment (the observer rating mean for managers was higher than the corresponding self rating mean).



Self-vs observer rating discrepancies between males and females

When comparing the mean self-ratings of male and female respondents, female respondents rated themselves higher at 4,59 when compared to their male counterparts at 4,37 (Table 10). It must however be noted that the number of self-ratings from female respondents were much lower at N=6 compared to males at N=57 (Table 10 and Figure 15). Female respondents also showed higher mean observer ratings at 4,14 compared to males at 3,88 (Table 10 and Figure 15). However, once again the amount of respondents providing observer ratings were much lower at N=16 when compared to male observer ratings at N=161 (Table 10).

Although there was a noticeable difference in the mean self and mean observer ratings between male and female respondents the absolute difference was similar with the discrepancy between self and observer ratings for males being slightly higher at 0,49 compared to females at 0,45 (Figure 15).

Table 10: Descriptive statistics for self and observer rating means for males and females of employment (please note observer rating represents a mean of all rating types excluding self-ratings).

Descriptive Statistics			
Rating source	**N**	**Mean**	**Std. Deviation**
Female self	6	4,59	0,40
Male Self	57	4,37	0,38
Female Observer	16	4,14	0,69
Male Observer	161	3,88	0,58

Figure 15: Plot showing the mean self- and observer ratings for males and females (self-rating means >observer rating means).

Self-vs observer rating mean discrepancies for participants employed for different periods of time in the company

The mean self- and observer ratings of employees that have been employed by the company for different periods of time was also compared. The results of the mean self- and observer ratings for respondents employed 0-5 years, 5-10 years and more than10 years are presented in Table 11. When comparing self- rating means, respondents that were employed more than 10 years showed the highest self-rating mean at 4,44, followed by employees with 0-5 years of experience working at MD with 4,38 and finally employees with 5-10 years measured the lowest mean self-rating of 4,35 (Table 11 and Figure 16).

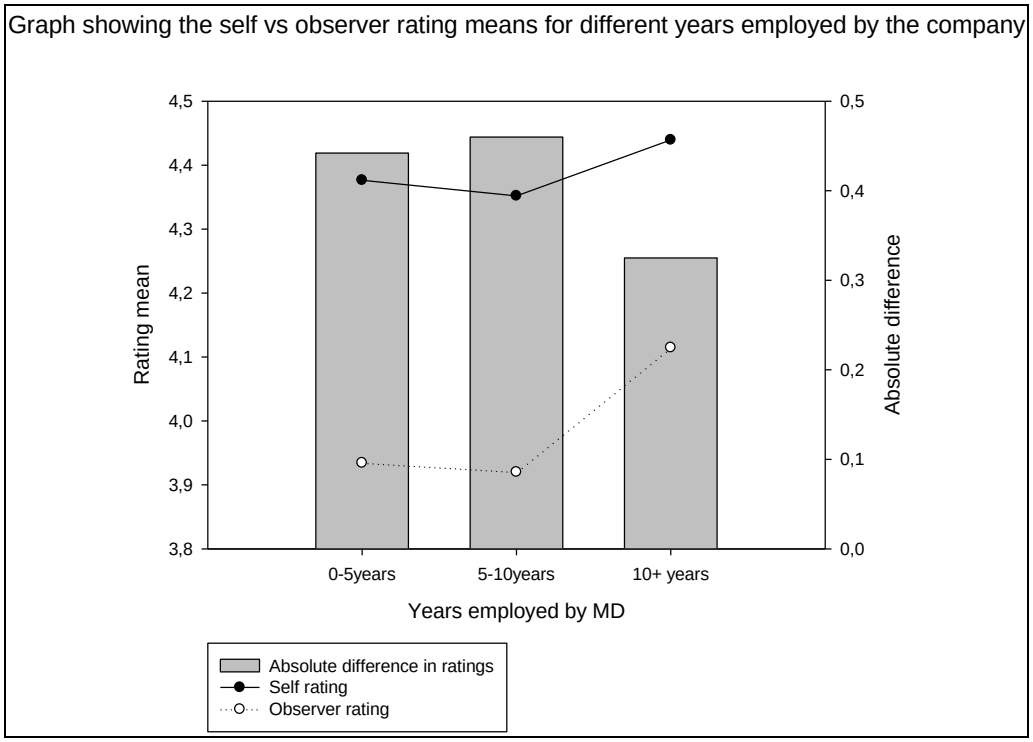
The observer rating mean was the highest for employees that worked 10+ years for the company at 4,11 and for the other two categories the observer rating means were almost the same with 3,93 (0-5 years) and 3,92 (5-10 years) (Table 11).

The largest difference between self-rating mean and observer mean was measured for employees working in the company for 5-10 years (0,46). Respondents employed 0-5 years showed slightly smaller difference at 0,44 and employees with 10+ years' experience working at the company showed a considerably lower difference between ratings at 0,33 (Figure 16).

Table 11: Descriptive statistics for self and observer rating means for individuals employed for different time periods within the company (please note observer rating represents a mean of all rating types excluding self-ratings).

Descriptive Statistics			
Rating source	**N**	**Mean**	**Std. Deviation**
10+ years self	6	4,44	0,48
0-5 years self	34	4,38	0,39
5-10 years self	26	4,35	0,39
10+ observer	11	4,11	0,41
0-5 years observer	98	3,93	0,60
5-10 years observer	81	3,92	0,62

Figure 16: Plot showing the mean self and observer ratings for participants employed for different time periods at Master Drilling (self-rating means >observer rating means).



Self-vs observer rating mean discrepancies for participants with different levels of education

The mean self- and observer ratings of respondents categorized into different levels of education/qualifications are presented in The discrepancy in self-rating means compared to observer rating means was as follow: for respondents that only had a high school qualification there was a difference of 0,48; followed by university graduates with a difference of 0,46; diploma holders with 0,39 and then employees holding postgraduate qualifications with 0,10 (please note for this difference the observer means was higher compared to the self-rating mean) (Figure 17).

Table 12. High school graduates along with respondents completing a university degree, jointly showed the highest self-rating means at 4,41 (The discrepancy in self-rating means compared to observer rating means was as follow: for respondents that only had a high school qualification there was a difference of 0,48; followed by university graduates with a difference of 0,46; diploma holders with 0,39 and then employees holding postgraduate qualifications with 0,10 (please note for this difference the observer means was higher compared to the self-rating mean) (Figure 17).

Table 12). This was followed by respondents possessing a diploma and postgraduate qualification with 4,33 and 4,28 respectively (The discrepancy in self-rating means compared to observer rating means was as follow: for respondents that only had a high school qualification there was a difference of

0,48; followed by university graduates with a difference of 0,46; diploma holders with 0,39 and then employees holding postgraduate qualifications with 0,10 (please note for this difference the observer means was higher compared to the self-rating mean) (Figure 17).

Table 12 and Figure 17).

All self-rating means were higher than corresponding observer rating means except for participants possessing a postgraduate degree (The discrepancy in self-rating means compared to observer rating means was as follow: for respondents that only had a high school qualification there was a difference of 0,48; followed by university graduates with a difference of 0,46; diploma holders with 0,39 and then employees holding postgraduate qualifications with 0,10 (please note for this difference the observer means was higher compared to the self-rating mean) (Figure 17).

Table 12). For employees possessing a postgraduate degree the mean observer rating was higher compared to the corresponding self-rating mean and was consequently the highest observer rating mean at 4,38 (Figure 17). This was followed by observer mean ratings for employees possessing a university degree, diploma and high school graduates, all showing almost the exact same mean observer ratings at 3,95, 3,94 and 3,93 respectively (The discrepancy in self-rating means compared to observer rating means was as follow: for respondents that only had a high school qualification there was a difference of 0,48; followed by university graduates with a difference of 0,46; diploma holders with 0,39 and then employees holding postgraduate qualifications with 0,10 (please note for this difference the observer means was higher compared to the self-rating mean) (Figure 17).

Table 12).

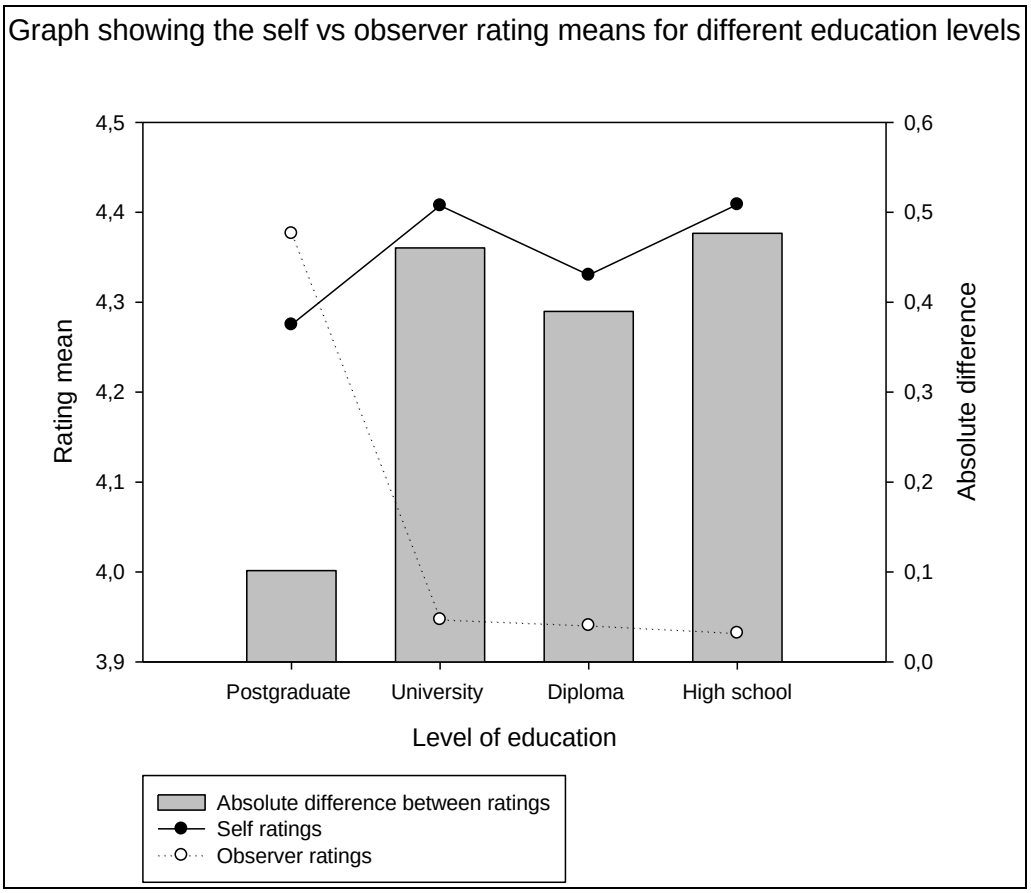
The discrepancy in self-rating means compared to observer rating means was as follow: for respondents that only had a high school qualification there was a difference of 0,48; followed by university graduates with a difference of 0,46; diploma holders with 0,39 and then employees holding postgraduate qualifications with 0,10 (please note for this difference the observer means was higher compared to the self-rating mean) (Figure 17).

Table 12: Descriptive statistics for self and observer rating means for different education levels of individuals in the company (please note observer rating represents a mean of all rating types excluding self-ratings).

Descriptive Statistics			
Rating source	**N**	**Mean**	**Std. Deviation**
High school self	16	4,41	0,37

University self	20	4,41	0,41
Postgraduate observer	10	4,38	0,46
Diploma self	31	4,33	0,39
Postgraduate self	2	4,28	0,60
University observer	59	3,95	0,70
Diploma observer	87	3,94	0,58
High school observer	45	3,93	0,56

Figure 17: Plot showing the mean self and observer ratings individuals employed for different time periods at MD (self-rating means >observer rating means except for individuals holding postgraduate degrees).



CHAPTER 4 DISCUSSION

4.1 INTRODUCTION

In the previous chapter the results between self and observer 360-degree feedback within MD was presented. This chapter will discuss the findings of the results and relate the findings to the various research objectives identified in the study.

In order to frame the discussion on the result obtained from this study the objectives of the study are once again revisited below:

- Determine if 360-degree feedback systems display discrepancies between self and observer ratings within MD.
- If discrepancies exist, are they quantifiable and can one elucidate the reasons for such discrepancies?
- Determine if observations of 360-degree feedback reviews within MD are similar to results found in the literature.
- What are the implications of using 360-degree feedback reviews for MD, in regarding employee job performance improvement and identification of developmental needs and behavioural changes?

Before any discrepancies could be determined between self and observer ratings the validity and reliability of the data had to be scrutinized. For reliability this was completed using Cronbach alpha measurements, which showed very high measures for each construct in the 360-degree questionnaire.

4.2 DETERMINE IF 360-DEGREE FEEDBACK SYSTEMS DISPLAY DISCREPANCIES BETWEEN SELF AND OBSERVER RATINGS WITHIN MD.

As can be seen from the results, there are significant discrepancies between self- and observer ratings for every category within the questionnaire (Figure 6). In fact, there was a discrepancy between self and observer rating averages for each question in the survey questionnaire (Figure 7). When considering upward, top-down and peer rating averages each rating type displayed a negative discrepancy compared to the average self-rating for the respondent (i.e. observer rating was lower than corresponding self-rating (Figure 5). Furthermore, when analysing the data as per each

demographic group identified in Table 2, each demographic grouping showed a discrepancy between self and observer ratings (Table 7 to The discrepancy in self-rating means compared to observer rating means was as follow: for respondents that only had a high school qualification there was a difference of 0,48; followed by university graduates with a difference of 0,46; diploma holders with 0,39 and then employees holding postgraduate qualifications with 0,10 (please note for this difference the observer means was higher compared to the self-rating mean) (Figure 17).

Table 12 and Figure 12 to Figure 17). This confirms that individuals sampled from MD rated themselves differently for the same dimensions measured compared to observer rating sources received from their colleagues.

4.3 IF DISCREPANCIES EXIST, ARE THEY QUANTIFIABLE AND CAN ONE ELUCIDATE THE REASONS FOR SUCH DISCREPANCIES?

4.3.1 Total dataset

It is important to note that for each statement in the measurement instrument the average self-rating was higher compared to the corresponding observer rating (Figure 6, Figure 7 and Figure 8). When comparing the self-versus-observer rating types across the entire dataset, the average self-ratings for each statement was on average 0.37 higher compared to observer ratings (Figure 7 and Figure 8). The largest discrepancy between self and observer ratings for the various statements in the measurement instrument were as large as 0.6 (statement S13), compared to the lowest discrepancy showing values of only 0.17 (Figure 8 and Table 1).

When comparing the total data set the largest average discrepancy was observed between self- and peer ratings with a discrepancy of 0.5 (self-ratings being higher than peer ratings) (Table 6 and Figure 5). This was followed by self vs top-down ratings which showed an average discrepancy of 0.3 and self vs upward rating which displayed an average discrepancy of 0.29; almost the exact same value as self vs top-down (self-ratings higher in every case) (Table 6 and Figure 5). The overall discrepancy between self and observer ratings was 0.37 with self-ratings being higher than observer ratings. The most probable reason for the overall overestimation within MD is most probably due to the "leniency" effect amongst supervisors which resulted in inflated self-ratings amongst supervisors.

4.3.2 Per nationality

Per nationality

Data from each country once again showed a self-rating average that was higher compared to the corresponding country's observer rating average (Table 7 and Figure 12). South Africa and Mexico showed the highest discrepancies (0.49 both South Africa and Mexico) between self and observer ratings means. However in the case of Mexico it showed both lowest values for self and observer ratings with the discrepancy between two ratings still being exactly the same as that of South Africa at 0.49 (Table 7 and Figure 12). The much lower ratings on both the self and observer ratings can more plausibly elude to a leniency effect amongst Mexican participants which would be more plausible than an overly strict rating by all other countries.

China showed the lowest discrepancy between self and observer ratings of 0.24. This appears to be due to self-ratings which are relatively low compared to other countries (Table 7 and Figure 12). This is typical for Asian countries which tend to show lower self-ratings as they have a higher power distant less individualistic culture (Gentry *et al.*, 2010:237–250). It could also be that the measurement system was erroneous due to linguistic constraints as Chinese participants completed the survey in English and not their native language (Gheith, 2014:119; Kaiser & Craig, 2005:235–245; Van der Heijden & Nijhof, 2004).

South American countries showed the second lowest discrepancies between self and observer ratings with an average between Brazil, Chile and Peru of 0.37 (Table 7 and Figure 12). Self-ratings are lower when compared to South African results perhaps, eluding to a slightly more power distant cultural effect when compared to South African respondents. In this instance however, the survey instrument was translated into Spanish and Portuguese by the internal marketing divisions.

Company divisions

When comparing the discrepancies across different divisions within the company, MDSA showed the highest discrepancy at 0.53; significantly higher than the next highest discrepancies of 0.42 and 0.40 for MD Latin America and MDX respectively (Table 8 and Figure 13). These results correlate to the per nationality results as per the previous section of the discussion.

Level of employment

Two "levels" of employment were used for the purpose of this study, supervisor and managerial levels. Within this demographic grouping managers displayed self-ratings that were lowered compared to corresponding observer ratings (Table 9 and Figure 14). The average manager's self-rating was significantly lower at 4.18 when compared to the corresponding average observer rating of 4.4 showing, indicating a "negative" discrepancy of 0.22 (Table 9 and Figure 14). Inversely the employees categorized into the supervisory levels displayed a self-rating average significantly higher at 4.39, compared to their observer rating average (3.9), equating to a discrepancy of 0.49 (Table 9 and Figure 14). It must however be stated that most of the population categorized into managerial positions also possessed high levels of education, as will be discussed in the section "Levels of Education", later in this section of the research report.

Gender

When comparing results between male and female respondents it should be noted that the number of female respondents were significantly less than the male respondents (Table 10). Both self and observer rating averages were higher for female respondents compared to the corresponding rating for males (Table 10 and Figure 15). Discrepancies between male and female self and observer ratings displayed minimal differences with the latter showing a discrepancy of 0.49 to the former's 0.45. This slightly higher discrepancy in males is most probably related to the fact that male respondents tend to slightly overestimate their leadership skills in their self-ratings compared to female respondents (Vecchio & Anderson, 2009:165–179).

Employment period

Three different employment duration "intervals" were examined within MD, namely 0-5 years employed, 5-10 years employed and 10+ years employed. The highest self and observer ratings were observed for respondents who were employed 10+ years within MD (Table 11 and Figure 16). The discrepancies for employees working for MD 10+ years was significantly lower at 0.33, compared to employees who were with the company for 0-5 and 5-10 years at 0.45 and 0.43 respectively (all self-ratings higher than observer ratings) (Table 11 and Figure 16). The lower ratings observed by employees employed for shorter periods could perhaps be due to the central tendency effect. It is suggested that employees with less working experience at MD would avoid forming any personal biases and thus do not rate any of their colleagues particularly harshly or

highly. The lower rating for these employees could be due to the fact that supervisors suffer the effects of "under sampling" them during their ratings; in other words they have not observed them long enough and therefore stereotype them as inexperienced within the company and hence must have a lower job performance (Van der Heijden & Nijhof, 2004). Conversely the relatively higher self and observer ratings for employees with 10+ years of experience could be as a result of the combination of the decreased central tendency effects.

Level of education

Respondent rating feedback was also categorised according to levels of education ranging from high school to postgraduate degrees (The discrepancy in self-rating means compared to observer rating means was as follow: for respondents that only had a high school qualification there was a difference of 0,48; followed by university graduates with a difference of 0,46; diploma holders with 0,39 and then employees holding postgraduate qualifications with 0,10 (please note for this difference the observer means was higher compared to the self-rating mean) (Figure 17).

Table 12). This was the only other grouping in which an observer rating was measured to be higher than the corresponding self-rating with postgraduate observer ratings showing a higher average at 4.38 compared to self-ratings, at 4.28 (The discrepancy in self-rating means compared to observer rating means was as follow: for respondents that only had a high school qualification there was a difference of 0,48; followed by university graduates with a difference of 0,46; diploma holders with 0,39 and then employees holding postgraduate qualifications with 0,10 (please note for this difference the observer means was higher compared to the self-rating mean) (Figure 17).

Table 12 and Figure 17). Postgraduates also showed a "negative" discrepancy between self and observer ratings of only 0.1 compared to 0.46, 0.39 and 0.48 for respondents with a University degree, Diploma and High School qualification respectively (The discrepancy in self-rating means compared to observer rating means was as follow: for respondents that only had a high school qualification there was a difference of 0,48; followed by university graduates with a difference of 0,46; diploma holders with 0,39 and then employees holding postgraduate qualifications with 0,10 (please note for this difference the observer means was higher compared to the self-rating mean) (Figure 17).

Table 12 and Figure 17). Researchers are of the opinion that such rating results can usually be attributed to the “halo” effect (Van der Heijden & Nijhof, 2004).

4.4 DETERMINE IF OBSERVATIONS OF 360-DEGREE FEEDBACK REVIEWS WITHIN MD ARE SIMILAR TO RESULTS FOUND IN LITERATURE.

The discrepancies between the self and observer ratings observed in MD are not uncommon and is also observed in most other studies. Various authors or researchers cite a typical, weak correlation(s) between different rater sources in 360-degree feedback (Compare or see Gentry et al., 2010:237–250; Kaiser & Craig, 2005:235–245; Marmet, 2015; Nowack & Mashihi, 2012:157–182).

Overall self-ratings were higher compared to observer ratings except, for a few instances such as between different employment levels, such as managers and supervisors and respondents possessing postgraduates' degrees vs employees who possess lower levels of education (Figure 14 and Figure 17). The phenomenon of higher self-ratings compared to observer ratings is common in other studies, as the general tendency is for individuals to rate themselves higher "leniency effect", when completing their self-ratings compared to the corresponding observer ratings (Massingham *et al.*, 2011:43–74; Mukhopadhyay, 2006; Van der Heijden & Nijhof, 2004).

The study also found similarities with other studies in terms of self-versus-observer discrepancies between different cultural groups (Figure 12). MD China showed the lowest self-ratings as well as discrepancies. This is similar to findings in studies conducted by Eckert *et al.*, 2010:259–278 and Gentry & Hannum, 2010:237–250 which found that self-versus-observer ratings were lower for more power distant, collectivist cultures such as found in Asia. Conversely MDSA and other South African divisions showed some of the highest self-ratings and discrepancies with observer ratings. It could possibly be ascribed to the fact that respondents within the South African divisions tend to have a lower power distance and be a more individualistic and their culture(s) allow for individual expression.

4.5 WHAT ARE THE IMPLICATIONS OF USING 360-DEGREE FEEDBACK REVIEWS FOR MD WITH REGARDS TO EMPLOYEE JOB PERFORMANCE IMPROVEMENT AND IDENTIFICATION OF DEVELOPMENTAL NEEDS AND BEHAVIOURAL CHANGES?

4.5.1 Job performance

There is undoubtably a link between job performance and self and observer rating discrepancies although the link is still somewhat poorly understood (Albright, Michelle & Levy, Paul, 1995:577–

600; Gentry *et al.*, 2010:237–250; Massingham *et al.*, 2011:43–74; Morris, 2011; Nowack, 1992:141–155; Nowack & Mashihi, 2012:157–182; Van der Heijden & Nijhof, 2004). Predominantly observer ratings were much lower compared to self-ratings within Master Drilling, especially for the South African divisions of the company (Figure 5, Figure 6, Figure 12 and Figure 13). However, the managerial level employees within MD who mostly also possessed tertiary degrees, showed negative discrepancies between self and observer ratings i.e. observer ratings were higher than self-ratings on average (Figure 14 and Figure 17).

The fact that most individuals participating in the study will receive negative feedback in terms of their perceived self-performance being much higher than the ratings allocated to them by observers could lead to both positive or negative receptivity of the feedback, mostly resulting in possible disengagement and poor job performance, especially where individual feedback on results are non-existing or poorly managed which in turn could lead to disengagement and poor job performance. The self over estimators who are the majority of the respondents in the case of MD thus have to be very carefully managed when receiving their feedback, as these employees are vulnerable to derailment and are more often than not ignorant to their own strengths and weaknesses. These tendencies hamper enlightenment and self-awareness of their true performance. If such employees are poorly managed, it could lead to decreased job performance and misalignment with company goals and objectives.

MD did not provide any guidance in terms of feedback through coaching and feedback; which is a critical part of ensuring the 360-degree process is effective and does not result in decreased job performance at an individual and organisational level (Nowack & Mashihi, 2012:157–182). On average respondents at managerial levels however, displayed underrating as observer ratings were considerably higher compared to self-ratings. These individuals consisted of 11% of the total sample population (Table 2 and Figure 14). They also require special guidance when feedback is given regarding their rating as they tend to be perfectionistic and have more pronounced emotional reactions to their feedback (Goffin & Anderson, 2007:271–289).

The fact that MD is a multinational company complicates the process of feedback and coaching when receiving 360-degree feedback. Different cultures show different correlations between self- versus observer discrepancies and these measure correlate with job performance (Nowack & Mashihi, 2012:157–182). The interpretations of result and feedback of the more power distant, collectivist cultures, such as MD China should be given individual attention and not simply

structured with the rest of the company as this will most probably lead to incorrect feedback, coaching and development programs, which could affect the individual job performance of these employees.

4.5.2 Developmental needs

Some argue that development should be the main purpose of the 360-degree feedback process, as the process is then seen as less threatening, resulting in increased employee receptivity and increased effectiveness of the process (Morris, 2011; Silverman *et al.*, 2005). Within MD results it can clearly be seen that some questions and dimensions tested, showed larger discrepancies compared to others (Figure 6 and Figure 8).

Statements S13, "takes responsibility for his area and do not blame others if things go wrong", showed the greatest discrepancy, followed by statements 8, 9 and 20 (Figure 8 and Table 1). Statements 8 and 9 focus on the ability of the individual to share knowledge with their colleagues and set goals. Statement 20 (although falling in a different category in the questionnaire) also involves measuring the integrity and honesty of the individual similarly to statement S13 (Table 1).

There is thus a clear development intervention required in terms of the integrity and accountability of the supervisory levels within MD. Once again, however, it must be stressed that no feedback and coaching were given to employees along with their results, thus hampering the best transfer of learnings, goal setting and general improvement in their job performance (Nowack & Mashihi, 2012:157–182). The feedback should ideally be accompanied by an employee development plan, which give the employee's clear goals and objectives for improvement. Managers can give the individuals guidance on their development and measure progress (Morris, 2011).

4.5.3 Behavioural change

Behavioural change will be linked to the development plans to be implemented for employees' stage. However, no feedback and development plans were implemented prior to the 360-degree process which in effect means the exercise was to a large extent a futile one. Behavioural change is usually minimal at best with 360-degree feedback processes and the lack of feedback and implementation plans prior to the 360-degree feedback process could additionally pose the threat of causing further employee disengagement and reduced job performance (Nowack & Mashihi, 2012:157–182).

CHAPTER 5 CONCLUSION

It is the trend that many companies today employee 360-degree feedback processes. However in most incidences, as was the case with MD it appears to be mostly as a result of the latest fad or because other companies are also conducting these studies and companies follow suit (Nowack & Mashihi, 2012:157–182) . The link between self-versus-observer rating discrepancies, job performance and behaviour change have been observed within 360-degree feedback processes. However, the effects could be both negative and positive and the former is almost always the case, especially when process feedback and follow-up is poor.

Feedback is the key principle upon which 360-degree feedback builds. In the case of MD feedback and follow-up was near non-existent. This is most probably resulted in a decrease in job performance and negative behavioural change as individuals participating in the study will most probably not achieve self-awareness but rather take criticism as negative and most probably leading to increased disengagement and decreased job performance.

The self-versus-observer rating discrepancies were greatest for the South African divisions of MD and differed markedly from other nationalities such as China and most Latin American countries. Respondents in higher positions and possessing tertiary education, on the contrary to most results, showed a negative discrepancy between self and observer ratings. These discrepancies are similar to findings in other studies of 360-degree feedback and rating discrepancies could thus have been predicted to a certain extend during implementation and design phase of the 360-degree feedback process. Feedback and development programmes following the 360-degree process should have been implemented and development processes should have been be tailored to inter group differences in ratings.

In most cases self-ratings within MD were much higher compared to observer ratings, elucidating to a large degree of overrating, most probably due to the leniency effect. Furthermore, employees showing 10+ years of experience with MD showed the highest self and observer ratings. The latter may indicate employees' reluctance to rate superiors who have influence within the company negatively as they might face consequences. This brings into question the fact that the feedback culture within MD might be very poor. Therefore, further emphasising the fact that processes such as 360-degree feedback must be implemented and managed with extreme care.

The overall implications of implementing such a rating process could be highly negative to MD in terms of job performance, development and behavioural change; mainly since individuals did not receive proper feedback. The rating discrepancies predominantly show high positive discrepancies towards self-ratings, thus further emphasising that most employees will receive negative feedback and require carefully feedback preferably delivered by an individual trained in 360-degree processes.

The trend in 360-degree feedback is that the process is generally poorly implemented and managed and the implications for companies simply employing this process without proper due diligence will almost certainly lead to decreased job performance, undesired behavioural changes and no or only minimal employee development.

5.1 LIMITATIONS OF THE STUDY

The study simply utilised the translation of the internal employees of the rating instrument to different languages and as such did not compare the validity of the instrument between different languages and cultural groups.

The study also did not qualitatively assess the relationships between raters before distributing the questionnaires. This various additional phenomenon such as rater bias could have adversely affected the results of the study.

The participants did not complete every type of rating requested in the instrument and as such specific discrepancies between a specific manager/supervisor and his/her direct peers, subordinates and superiors could not always be examined.

The study only compared averages between rater groups and did not qualitatively assess individuals within the study in order to better assess which rater discrepancy effects could have influenced the discrepancies between self and observer ratings.

5.2 RECOMMENDATIONS FOR FUTURE 360-DEGREE PROCESS IMPROVEMENTS AT MASTER DRILLING

5.2.1 Preparation

Employees should be properly notified and prepared for the process with clear communication to all specifically on the purpose of the process (Morris, 2011). In the case of MD the questionnaire was

simply delivered to employees via email without any clear communications to the purpose of the instrument, only that information would be kept confidential and responses were anonymous. It is recommended that the process only be utilised for development purposes and that this be communicated to employees in future.

5.2.2 Measurement instrument

The instrument was well designed in terms of its alignment with the company values. However, the translations for different nationalities within the companies could have been verified by professional translators in order to ensure validity of all responses.

5.2.3 Feedback and follow-up

The researcher is of the opinion that this portion of the feedback process could have the biggest negative implication for MD if the 360-feedback process is utilised in future. Improved feedback is required. A simple report to employees, without any guidance for improvement or support, serves no purpose. As the first emotional response of employees is initially negative, especially with results that show predominantly overrates, (as is the case within MD), special consideration is required in the initial period immediately following feedback. Feedback should be presented in ways that do not threaten the ego of the recipient and include a formal internal development plan to clearly indicate to the employee the areas where improvement is required.

5.3 FUTURE RESEARCH RECOMMENDED

Ideally a longitudinal study of the same subjects should be conducted upon the next 360-degree feedback review conducted within MD. This could validate the results and more effectively measure possible effects of the process on job performance, employee development and behavioural change.

A qualitative analysis of selected self-observer relationships within a quantitative dataset could deduce possible causes for certain discrepancies within different groups within a specific sample population.

LIST OF REFERENCES

AA. n.d. Incorporating 360-Degree Feedback into the Performance Appraisal System. :1–8.

Albright, Michelle, D. & Levy, Paul, E. 1995. The Effects of Source Credibility and Performance Rating Discrepancy on Reactions to Multiple Raters. *J. Appl. Soc. Psychol.* 25(7):577–600.

Anso, H.. 2014. THE IMPACT OF PERFORMANCE APPRAISAL ON EMPLOYEE PERFORMANCE. A case study of band of Nigeria plc. University of East London.

Armstrong, M. 2006. Performance management: Key Strategies and Guidelines. 3rd ed. Kogan page: London.

Arwal, A. 2011. Models and Theories of Performance Management System. Owerri.

Atkins, P.W.B. & Wood, R.E. 2002. Self-versus others' ratings as predictors of assessment center ratings : Validation evidence for 360-degree feedback programs. *Pers. Psychol.* 55(4):871–904.

Atwater, L. & Brett, J.F. 2006. 360 degree feedback to managers: Does it result in changes in employee attitudes? *Gr. Organ. Manag.* 31:578–600.

Atwater, L., Waldman, D., Ostroff, C., Robie, C., & Johnson, K.. 2005. Self-other agreement: Comparing its relationship with performance in the U.S. and Europe. *Int. J. Sel. Assess.* 13:25–40.

Atwater, L.E. & Brett, J.F. 2005. Antecedents and consequences of reactions to developmental 360-degree feedback. *J. Vocat. Behav.* 66:532–548.

Baroda, S., Sharma, C., & Bhatt, J.K. 2012. 360 Degree Feedback Appraisals-An innovative approach of Performance Management System. *Int. J. Manag. Inf. Technol.* 1(2):55–66.

Basu, T. 2015. Integrating 360 degree feedback in to performance appraisal tool and developmental process. *J. Bus. Manag.* 17(1):50–61.

Boyatzis, R.E. 1982. The Competent Manager. Wiley: Hoboken, NJ.

Bracken, D.., Dalton, M.., Jako, R.A., McCauley, C.D., Pollman, V.., & Degree, S.. 1997. Should 360-degree feedback be used only for developmental purposed? *Center for Creative Leadership*. :36.

Bracken, D.. & Summers, L. 1998. High Tech 360. *Train. Dev.* 52:42–46.

Bracken, D. & Church, A.H. 2013. The " New " Performance Management Paradigm : Capitalizing on the Unrealized Potential of 360 degree feedback. *People Strateg.* 36(2):34–40.

Bracken, D.W. 1994. Straight talk about multirater feedback. *Train. Dev.* 48(9):44.

Bracken, D.W. 1996. Multisource (360 degree) feedback - Surveys for Individual and Organisational Development. , in: Organisational Surveys: Tools for Assessment and Change (1996). Jossey-Bass, pp. 117–2.

Bracken, D.W. & Rose, D.S. 2011. When Does 360-Degree Feedback Create Behavior Change? And How Would We Know It When It Does? *J. Bus. Psychol.* 26(2):183–192.

Bracken, D.W., Rose, D.S., & Church, A.H. 2017. The Evolution and Devolution of 360 ° Feedback. *Soc. Ind. Organ. Psychol.* 9(4):761–794.

Bryman, A., Bell, E., Hirschsohn, P., Dos Santos, A., Du Toit, J., Masenge, A., Van Aardt, I., & Wagner, C. 2015. Research Methodology: Business and Management Contexts. 3rd ed. Oxford University Press: Oxford.

Campbell, D.J. & Lee, C. 1988. Self-Appraisal in Performance Evaluation: Development Versus Evaluation. *Acad. Manag. Rev.* 13(2):302–314.

Campion, M.C., Campion, E.D., & Campion, M.A. 2015. Improvements in Performance Management Through the Use of 360 Feedback. *Ind. Organ. Psychol.* 8(1):85–93.

Cooper, W.H. 1998. "Ubiquitous halo ". *Psychol. Bull.* 91:218–244.

Creswell, J.. 2005. Educational Research: Planning, conducting and evaluation educational research. Pearson: London.

Creswell, J.. 2013. Qualitative inquiry and research design: choosing among five approaches. Sage: London.

Denisi, A.S. & Murphy, K.R. 2017. Performance appraisal and performance management: 100 years of progress? *J. Appl. Psychol.* 102(3):421–433.

Drogomyretska, M.I. 2014. THE MOST PROMISING EMPLOYEE EVALUATION METHODS IN MODERN ORGANIZATIONS. *Netw. Intell. Stud.* 2(3):38–44.

Eckert, R., Ekelund, B., Gentry, W., & Dawson, J. 2010. I don't see me like you see me but is that a problem? Cultural differences in rating discrepancy in 360-degree feedback instruments. *Eur. J. Work Organ. Psychol.* 19:259–278.

Edwards, D. & Ewen, D. 2000. 360 feedback as a longitudinal development intervention: a consultancy perspective. *Sel. Dev. Rev.* 14(4):367–386.

ETS. 2012. 90% of companies use 360 but many struggle with common issues [WWW Document]. *Learn. Train.* URL http://www.personneltoday.com/pr/2012/02/90-of-companies-use-360-but-many-struggle-with-common-issues/.

Farrell, A. 2013. An investigation into Performance Appraisal effectiveness from the perception of Employees in an Irish Consumer Services Company . National College of Ireland.

Fleenor, J., Taylor, S., & Chappelow, C. 2008. Leveraging the impact of 360-degree feedback. Wiley: New York, NY.

Fleenor, J.W., Bracken, D.W., Timmreck, C.W., Fleenor, J.W., & Summers, L. 2001. 360 feedback from another angle. *Hum. Resour. Manage.* 40(1):3–20.

Fleenor, J.W. & Prince, J.M. 1997. Using 360-degree feedback in organizations: an annotated bibliography. Centre for Creative Leadership: Greensboro, North Carolina.

Gentry, W.A. & Hannum, K. 2010. Self-observer rating discrepancies of managers in Asia: A study of derailment characteristics and behaviors in Southern Confucian Asia. *Int. J. Sel. Assess.* 18:237–250.

Gentry, W.A., Yip, J., & Hannum, K.M. 2010. Self-Observer Rating Discrepancies of Managers in Asia: A study of derailment characteristics and behaviors in Southern and Confucian Asia. *Int. J. Sel. Assess.* 18(3):237–250.

Gergely, E. 2012. Performance Management Examinations in Human Resource Management of Certain Profit-oriented Organizations and Mayor's Offices. University of Debrecen.

Gheith, N.A. 2014. Applying a balanced score card approach and Multi-Rater feedback strategy to shift from appraising to managing head nurses' performance at general surgical units-Main Mansoura University Hospital-Egypt. *J. Nurs. Educ. Pract.* 7(8):119.

Goffin, R.D. & Anderson, D.W. 2007. The self-rater's personality and self-other disagreement in multisource performance ratings: Is disagreement healthy? *J. Manag. Psychol.* 22:271–289.

Goleman, D. 1997. Beyond IQ: Developing the leadership competencies of emotional intelligence. , in: Paper Presented at the 2nd International Competency Conference.

Grace, N. & Abirami, P. 2016. A STUDY TO ASSESS THE KNOWLEDGE ON 360 DEGREE PERFORMANCE APPRAISAL AMONG FACULTY OF SRM COLLEGE OF NURSING , KATTANKULATHUR. *Int. J. Pharm. Biol. Sci.* 6(1):172–177.

Grahek, M. 2008. Agreement between self and other ratings in multi-rater tools: Performance, alternative measures, and importance. University of North Texas.

Hofstede, G. & McRae, R.R. 2004. Personality and culture revisited: Linking traits and dimensions of culture. *Cross-Cultural Res.* 38:52–88.

Hosain, M.S. 2016. 360 Degree Feedback as a Technique of Performance Appraisal: Does it Really Work? *Asian Bus. Rev.* 6(1):21.

Iaffaldano, M.T. & Muchinsky, P.M. 1985. Job satisfaction and job performance: a meta-analysis. *Psychol. Bull.* 97(2):251–273.

Ilgen, D.C. 2000. Bearing bad news: Reactions to negative performance feedback. *Appl. Psychol. An Int. Rev.* (49):550–566.

Iqbal, M.Z., Akbar, S., & Buhwar, P. 2015. Effectiveness of Performance Appraisal: An Integrated Framework. *Int. J. Manag. Rev.* 17(4):510–533.

Jackson, M. 2009. The halo effect in overdrive [WWW Document]. *Psychol. Today*. URL http://www.psychologytoday.com/blog/natural-history-the-modern-mind/200907/the-halo-effect-inoverdrive.

Judge, T.A., Thoresen, C.J., Bono, J.E., & Patton, G.K. 2001. The Job Satisfaction-Job Performance Relationship: A Qualitative and Quantitative Review. *Psychol. Bull.* 127(3):376–407.

Kaiser, R.B. & Craig, S.B. 2005. Building a better mouse trap: item characteristics associated with rating discrepancies in 360-degree feedback . *Consult. Psychol. J. Pract. Res.* 57(4):235–245.

Kanaslan, E.K. & Iyem, C. 2016. Is 360 Degree Feedback Appraisal an Effective Way of Performance Evaluation? *Int. J. Acad. Res. Bus. Soc. Sci.* 6(5):172–182.

Kettley, P. 1997. Personal Feedback, Cases in Point. The institute for employment studies: Brighton, UK.

Kim, T. 2014. Performance Appraisal : Determinants of Public Employees' Acceptance. The State University of New Jersey.

Kluger, A.N. & DeNisi, A. 1996. The effects of feedback interventions on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychol. Bull.* 119(2):254–284.

Lance, C.E., Hoffman, B.J., & Baranik, L.E. 2008. Rater source factors represent important subcomponents of the criterion construct space, not rater bias. *Hum. Resour. Manag. Rev.* 18(4):223–232.

Landy, F.J. & Farr, J.L. 1980. Performance Rating. *Psychol. Bull.* 87(1):72–107.

Le, H., Oh, I.S., Shaffer, J.A., & Schmidt, F.L. 2007. Implications of methodological advances for the practice of personnel selection: How practitioners benefit from recent developments in meta-analysis. *Acad. Manag. Perspect.* 21:6–15.

Leedy, P.. & Omrod, J.. 2013. Leedy. 10th ed. Pearson Education.

Leslie, J.B. & Fleenor, J.W. 1997. CHOOSING 360 A GUIDE TO EVALUATING MULTI-RATER FEEDBACK INSTRUMENTS FOR MANAGEMENT DEVELOPMENT. CENTER FOR CREATIVE LEADERSHIP: Greensboro, North Carolina.

Marmet, M.D. 2015. The Impact of Rater Personality and Purpose of Appraisal on Performance Ratings. University of Connecticut.

Massingham, P., Nguyet, T., & Nguyen, Q. 2011. Using 360 degree peer review to validate self-reporting in human capital measurement. *J. Intellect. Cap.* 12(1):43–74.

Matveev, A.V. 2002. The advantages of employing quantitative and qualitative methods in intercultural research: practical implications from the study of the perceptions of intercultural communication competencies by American and Russian managers. *Bull. Russ. Commun. Assoc. Theory Commun. Appl. Commun.* 1:59–67.

McCarthy, A.M. & Garavan, T.N. 2007. Understanding acceptance of multisource feedback for management development. *Pers. Rev.* 36(4):903–917.

Morris, P. 2011. How 360 degree feedback practices create positive or negative participant perceptions of the process. The University of Brighton.

Muijs, D. 2011. Doing quantitative research in education using SPSS.

Mukhopadhyay, K. 2006. "360 – Degree Appraisal – A Performance Assessment Tool".

Murphy, K.R. 2008. Explaining the weak relationship between job performance and ratings of job performance. *Ind. Organ. Psychol.* 1:148–160.

Murphy, K.R., Cleveland, J.N., & Mohler, C. 2001. Reliability, validity and meaningfulness of

multisource ratings. , in: Handbook of Multisource Feedback. Jossey-Bass: San Francisco. . Jossey-Bass: San Francisco, pp. 130–148.

Nowack, K. 1992. Self-assessment and rater assessment as a dimension of management development. *Hum. Resour. Dev. Q.* :141–155.

Nowack, K. 1993. 360 feedback the whole story. *Train. Dev.* 47(1):69–72.

Nowack, K. 2009. Leveraging multirater feedback to facilitate successful behavioral change. *Psychol. J. Pract. Res.* 61:280–297.

Nowack, K.M. & Mashihi, S. 2012. Evidence-based answers to 15 questions about leveraging 360-degree feedback. *Consult. Psychol. J.* 64(3):157–182.

Obi, J.N. 2016. PERFORMANCE APPRAISAL AS A TOOL FOR ENHANCING PRODUCTIVITY IN AN ORGANIZATION. *Int. J. Innov. Sustain. Dev.* 7(2):35.

Othman, N. 2014. Employee Performance Appraisal Satisfaction : the Case Evidence From Brunei ' S Civil Service. University of Manchester.

Reily, R.R., Smither, J.W., & Vasilopoulos, N.L. 1996. A longitudinal study of upward feedback. *Pers. Psychol.* 49:599–612.

Shayo, A.F. 2013. THE EFFECTS OF PERFORMANCE APPRAISAL SYSTEM ON EMPLOYEES' PERFOMANCE IN THE TANZANIAN COMMUNITY RADIOS: A CASE OF SELECTED RADIOS IN DAR ES SALAAM. OPEN UNIVERSITY OF TANZANIA.

Shields, J., Brown, M., Kaine, S., Dolle-Samuel, S., North-Samardzic, A., McLean, P., Johns, R., Robinson, J., O'Leary, P., & Plimmer, G. 2016. Managing Employee Performance & Reward: Concepts, Practices, Strategies. Second ed. Cambridge University Press.

Shipper, F., Hoffman, R., & Rotondo, D. 2007. Does the 360 feedback process create actionable knowledge equally across cultures? ? *Acad. Manag. Learn. Educ.* 6:33–50.

Silverman, M., Kerrin, M., & Carter, A. 2005. 360 Degree Feedback: Beyond the Spin. , Institue for employee studies. Brighton.

Streiner, D.L. 2005. An introduction to coefficient alpha and internal consistency. *J. Pers. Assess.* 80(1):99–103.

Trochim, W.M.K. 2006. The Research Methods Knowledge Base [WWW Document]. URL http://anatomyfacts.com/Research/ResearchMethodsKnowledgeBase.pdf.

Van der Heijden, B.I.J.M. & Nijhof, A.H.J. 2004. The value of subjectivity: problems and prospects for 360-degree appraisal systems.

Varela, O.E. & Premeaux, S.F. 2008. Do cross-cultural values affect multisource feedback dynamics? The case of high power distance and collectivism in two Latin American countries. *Int. J. Sel. Assess.* 16:134–142.

Vecchio, R.P. & Anderson, R.J. 2009. Agreement in self– other ratings of leader effectiveness: The role of demographics and personality. *Int. J. Sel. Assess.* 17:165–179.

Vukotich, G. 2014. PROBLEMS AND PITFALLS WITH 360 FEEDBACK. *Bus. Stud. J.* 6(1):103–120.

Welman, C., Kruger, F., & Mitchell, B. 2011. Research Methodology.

Woods, Stephen, A. & West, Michael, A. 2015. The Phsychology of Work and Organizations. Second ed. Cengage Learning.

APPENDIX A: EXAMPLE OF MEASUREMENT INSTRUMENT

	Rating Scale:					
	The rating scale used in the Feedback form is:					
	1 = Always demonstrates this behaviour					
	2 = Usually demonstrates this behaviour					
	3 = Sometimes demonstrates this behaviour					
	4 = Rarely demonstrates this behaviour					
	5 = Never demonstrates this behaviour					
		Person A				
		Manager				
	SCORES	Self Assessment	Top-down	Peer	Upward	Individual overall average (excl. Self)
A	**We invest in relationships**					
1	makes me feel valued	2,0	3,0	1,0	1,0	1,7
2	builds strong positive relationships	2,0	2,0	1,0	2,0	1,7
3	encourages me to deliver high quality work in accordance with the Firm's standards	2,0	1,0	1,0	1,0	1,0
4	recognises my efforts and successes	2,0	2,0	1,0	1,0	1,3
5	is available to help and support me when I need it	2,0	1,0	1,0	1,0	1,0
	Section average:	**2,0**	**1,8**	**1,0**	**1,2**	**1,3**
B	**We support a culture of growth, innovation, and people development**					
6	encourages innovation and creativity and encourages the contributions of others	2,0	1,0	1,0	2,0	1,3
7	supports me in my learning, personal growth and development	2,0	1,0	2,0	1,0	1,3
8	willingly and proactively shares knowledge and experience with me and the team	2,0	1,0	2,0	2,0	1,7
9	set clear goals and measures this objectively and fairly	3,0	2,0	3,0	2,0	2,3
	Section average:	**2,3**	**1,3**	**2,0**	**1,8**	**1,7**
C	**We focus on quality, operational efficiency and a safety work environment**					
10	is performing at the level that he should for the position that he holds	2,0	2,0	1,0	1,0	1,3
11	communicates proactively and adequately to me/others on matters	3,0	2,0	1,0	1,0	1,3
12	provides meaningful and constructive feedback with clear, relevant examples	2,0	2,0	1,0	2,0	1,7
13	takes responsibility for his area and do not blame others if things go wrong	2,0	2,0	1,0	1,0	1,3
14	supports me in balancing my life outside of work considering the needs of the business	2,0	1,0	2,0	1,0	1,3
15	" walks the talk" and leads by example	3,0	2,0	1,0	2,0	1,7
	Section average:	**2,3**	**1,8**	**1,2**	**1,3**	**1,4**
D	**We expect honesty and integrity**					
16	demonstrates the importance of delivering high quality client service	2,0	1,0	1,0	1,0	1,0
17	demonstrates high compliance to company rules, policies, procedures and the firms code of	2,0	2,0	1,0	1,0	1,3
18	word is his bond and you can believe him if he promises to do something	2,0	1,0	1,0	1,0	1,0
19	is consistent in his behaviour and you know where you stand	2,0	2,0	1,0	2,0	1,7
20	has strong moral principals and will not let others or situations make him deviate from thes	2,0	1,0	1,0	1,0	1,0
	Section average:	**2,0**	**1,4**	**1,0**	**1,2**	**1,2**
	Overall average (all sections):	**2,1**	**1,6**	**1,3**	**1,4**	**1,4**

APPENDIX B: RESULTS PER MEASUREMENT ITEM

Rating source and statement code	Statement/construct	N	Mean	Std. Deviation
	We invest in relationships			
Self S1	**makes me feel valued**	65	4,31	,660
Self S2	**builds strong positive relationships**	69	4,20	,531
Self S3	**encourages me to deliver high quality work in accordance with the Firm's standards**	69	4,43	,675
Self S4	**recognises my efforts and successes**	69	4,22	,683
Self S5	**is available to help and support me when I need it**	67	4,51	,637
	We support a culture of growth, innovation, and people development			
Self S6	**encourages innovation and creativity and encourages the contributions of others**	68	4,26	,704
Self S7	**supports me in my learning, personal growth and development**	68	4,19	,738
Self S8	**willingly and proactively shares knowledge and experience with me and the team**	68	4,54	,633
Self S9	**set clear goals and measures this objectively and fairly**	68	4,25	,632
	We focus on quality, operational efficiency and a safety work environment			
Self S10	**is performing at the level that he should for the position that he holds**	68	4,28	,619
Self S11	**communicates proactively and adequately to me/others on matters**	68	4,13	,571
Self S12	**provides meaningful and constructive feedback with clear, relevant examples**	68	4,13	,644
Self S13	**takes responsibility for his area and do not blame others if things go wrong**	68	4,62	,574
Self S14	**supports me in balancing my life outside of work considering the needs of the business**	68	3,96	,921
Self S15	**" walks the talk" and leads by example**	68	4,35	,641
	We expect honesty and integrity			

Self S16	**demonstrates the importance of delivering high quality client service**	68	4,60	,522
Self S17	**demonstrates high compliance to company rules, policies, procedures and the firms code of conduct**	68	4,56	,608
Self S18	**word is his bond and you can believe him if he promises to do something**	68	4,50	,533
Self S19	**is consistent in his behaviour and you know where you stand**	68	4,53	,559
Self S20	**has strong moral principals and will not let others or situations make him deviate from these principles**	68	4,76	,427
	We invest in relationships			
Top-Down S1	**makes me feel valued**	75	3,95	,928
Top-Down S2	**builds strong positive relationships**	75	3,95	,943
Top-Down S3	**encourages me to deliver high quality work in accordance with the Firm's standards**	75	4,27	,759
Top-Down S4	**recognises my efforts and successes**	75	3,99	,878
Top-Down S5	**is available to help and support me when I need it**	75	4,33	,741
	We support a culture of growth, innovation, and people development			
Top-Down S6	**encourages innovation and creativity and encourages the contributions of others**	76	3,86	,976
Top-Down S7	**supports me in my learning, personal growth and development**	76	3,83	,855
Top-Down S8	**willingly and proactively shares knowledge and experience with me and the team**	76	4,22	,759
Top-Down S9	**set clear goals and measures this objectively and fairly**	76	3,88	,923
	We focus on quality, operational efficiency and a safety work environment			
Top-Down S10	**is performing at the level that he should for the position that he holds**	75	4,12	,869
Top-Down S11	**communicates proactively and adequately to me/others on matters**	75	4,07	,811
Top-Down S12	**provides meaningful and constructive feedback with clear, relevant examples**	75	3,88	,805

Top-Down S13	**takes responsibility for his area and do not blame others if things go wrong**	75	4,07	,977
Top-Down S14	**supports me in balancing my life outside of work considering the needs of the business**	75	3,77	1,098
Top-Down S15	**" walks the talk" and leads by example**	75	3,97	,822
	We expect honesty and integrity			
Top-Down S16	**demonstrates the importance of delivering high quality client service**	75	4,51	,705
Top-Down S17	**demonstrates high compliance to company rules, policies, procedures and the firms code of conduct**	75	4,29	,749
Top-Down S18	**word is his bond and you can believe him if he promises to do something**	75	4,08	,955
Top-Down S19	**is consistent in his behaviour and you know where you stand**	75	4,07	,844
Top-Down S20	**has strong moral principals and will not let others or situations make him deviate from these principles**	75	4,27	,890
	We invest in relationships			
Peer S1	**makes me feel valued**	70	3,81	,856
Peer S2	**builds strong positive relationships**	70	3,77	,951
Peer S3	**encourages me to deliver high quality work in accordance with the Firm's standards**	70	3,99	,807
Peer S4	**recognises my efforts and successes**	70	3,71	,903
Peer S5	**is available to help and support me when I need it**	70	4,20	,894
	We support a culture of growth, innovation, and people development			
Peer S6	**encourages innovation and creativity and encourages the contributions of others**	71	3,83	,894
Peer S7	**supports me in my learning, personal growth and development**	71	3,55	,983
Peer S8	**willingly and proactively shares knowledge and experience with me and the team**	71	3,82	,867
Peer S9	**set clear goals and measures this objectively and fairly**	71	3,63	,914
	We focus on quality, operational efficiency and a safety work environment			
Peer S10	**is performing at the level that he should for the position that he holds**	71	3,97	,774
Peer S11	**communicates proactively and adequately to me/others on matters**	71	3,87	,877

Peer S12	**provides meaningful and constructive feedback with clear, relevant examples**	71	3,79	,773
Peer S13	**takes responsibility for his area and do not blame others if things go wrong**	71	3,93	1,005
Peer S14	**supports me in balancing my life outside of work considering the needs of the business**	71	3,52	1,054
Peer S15	**" walks the talk" and leads by example**	71	3,79	,893
	We expect honesty and integrity			
Peer S16	**demonstrates the importance of delivering high quality client service**	72	4,21	,768
Peer S17	**demonstrates high compliance to company rules, policies, procedures and the firms code of conduct**	72	4,04	,830
Peer S18	**word is his bond and you can believe him if he promises to do something**	72	3,88	,887
Peer S19	**is consistent in his behaviour and you know where you stand**	72	3,97	,822
Peer S20	**has strong moral principals and will not let others or situations make him deviate from these principles**	72	4,07	,877
	We invest in relationships			
Upward S1	**makes me feel valued**	49	3,98	,777
Upward S2	**builds strong positive relationships**	49	3,82	,834
Upward S3	**encourages me to deliver high quality work in accordance with the Firm's standards**	49	4,20	,707
Upward S4	**recognises my efforts and successes**	49	3,88	,726
Upward S5	**is available to help and support me when I need it**	49	4,24	,830
	We support a culture of growth, innovation, and people development			
Upward S6	**encourages innovation and creativity and encourages the contributions of others**	52	3,79	,893
Upward S7	**supports me in my learning, personal growth and development**	49	3,84	,717
Upward S8	**willingly and proactively shares knowledge and experience with me and the team**	52	4,02	,727
Upward S9	**set clear goals and measures this objectively and fairly**	52	3,73	,931
	We focus on quality, operational efficiency and a safety work environment			

Upward S10	**is performing at the level that he should for the position that he holds**	51	4,06	,759
Upward S11	**communicates proactively and adequately to me/others on matters**	51	3,94	,580
Upward S12	**provides meaningful and constructive feedback with clear, relevant examples**	51	3,96	,662
Upward S13	**takes responsibility for his area and do not blame others if things go wrong**	51	4,10	,781
Upward S14	**supports me in balancing my life outside of work considering the needs of the business**	46	3,78	,758
Upward S15	**" walks the talk" and leads by example**	51	4,24	,764
	We expect honesty and integrity			
Upward S16	**demonstrates the importance of delivering high quality client service**	53	4,21	,661
Upward S17	**demonstrates high compliance to company rules, policies, procedures and the firms code of conduct**	53	4,38	,713
Upward S18	**word is his bond and you can believe him if he promises to do something**	53	4,38	,657
Upward S19	**is consistent in his behaviour and you know where you stand**	53	4,40	,716
Upward S20	**has strong moral principals and will not let others or situations make him deviate from these principles**	53	4,57	,605

APPENDIX C: SOLEMN DECLARATION

NWU®
NORTH-WEST UNIVERSITY
NOORDWES-UNIVERSITEIT
YUNIBESITI YA BOKONE-BOPHIRIMA

Higher Degrees Administration

SOLEMN DECLARATION AND PERMISSION TO SUBMIT

1. Solemn declaration by student

I, **W.C. Olivier**

declare herewith that the thesis/dissertation/mini-dissertation/article entitled (**exactly as registered/approved title**),

The implications of self-versus-observer rating discrepancies in 360-reviews

which I herewith submit to the North-West University is in compliance/partial compliance with the requirements set for the degree:

Master of Business Administration at the North-West University

is my own work, has been text-edited in accordance with the requirements and has not already been submitted to any other university.

LATE SUBMISSION: If a thesis/dissertation/mini-dissertation/article of a student is submitted after the deadline for submission, the period available for examination is limited. No guarantee can therefore be given that (should the examiner reports be positive) the degree will be conferred at the next applicable graduation ceremony. It may also imply that the student would have to re-register for the following academic year.

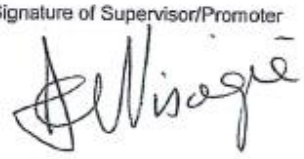
Signature of Student  University Number 28369939

Signed on this 12 day of November of 20 18

2. Permission to submit and solemn declaration by supervisor/promoter

The undersigned declares that the thesis/dissertation/mini-dissertation complies with the specifications set out by the NWU and that:

- the student is hereby granted permission to submit his/her mini-dissertation/ dissertation/thesis:
  X Yes ○ No
- that the student's work has been checked by me for plagiarism (by making use of TurnItIn software for example) and a satisfactory report has been obtained:
  X Yes ○ No

Signature of Supervisor/Promoter  Date 2018/11/12

APPENDIX D PERMISSION LETTER FROM COMPANY TO USE DATA

Master Drilling Exploration (Pty) Ltd
A Master Drilling Group Ltd Company

Reg No: 2004/029872/07 | Vat No: 4090221153
Physical: 4 Bosman Street, Fochville, South Africa, 2515
Postal: P.O. Box 902, Fochville, South Africa, 2515
Tel: +27 (0)18 771 8100 | Fax: +27 (0)18 771 5156
Email: exploration@masterdrilling.com | www.masterdrilling.com

MASTER DRILLING

13 November 2018

To whom it may concern this hereby serves to confirm that Master Drilling gives permission to Mr. W.C. Oliver ID:8507075026084, student number: 28369939 to utilise anonymous data from a 360 degree feedback process that was implement by Master Drilling in 2016.

Yours faithfully

FG Dixon
General Manager

APPENDIX E TURNITIN REPORT

12530115:Olivier_WC_28369939_MBAA874_Turnitin_test.doc

ORIGINALITY REPORT

6%	4%	1%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

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7	William A. Gentry. "Self-Observer Rating Discrepancies of Managers in Asia: A study of derailment characteristics and behaviors in Southern and Confucian Asia : Self-Observer Rating Discrepancies", International Journal of Selection and Assessment, 08/16/2010 Publication	<1%

APPENDIX F RAW DATA CODED

		Statement number																			
Person number	Rating type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Self	4,00	4,00	5,00	4,00	4,00	4,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	5,00	5,00	5,00
1	Top-Down	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
1	Top-Down	5,00	5,00	5,00	4,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00	4,00	5,00
1	Top-Down	4,00	4,00	5,00	4,00	4,00	3,00	3,00	5,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	5,00
1	Top-Down	5,00	3,00	4,00	3,00	3,00	3,00	4,00	4,00	4,00	5,00	5,00	5,00	5,00	4,00	4,00	5,00	5,00	5,00	5,00	4,00
1	Top-Down	4,00	4,00	5,00	4,00	4,00	3,00	3,00	5,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	5,00
1	Peer	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
2	Self	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
2	Top-Down	2,00	1,75	2,75	2,75	2,00	3,00	3,00	3,00	2,50	2,00	2,50	2,00	2,00	2,75	2,50	3,25	3,25	2,50	2,50	3,00
2	Peer	3,25	3,50	3,75	3,50	3,50	3,25	3,25	3,25	4,00	3,50	3,25	3,00	3,25	3,75	3,75	3,25	3,50	3,50	3,75	4,00
2	Upward	4,00	3,00	3,00	4,00	3,00	3,00	4,00	3,00	3,00	3,00	4,00	3,00	4,00	4,00	4,00	3,00	5,00	4,00	5,00	5,00
3	Self	5,00	4,00	5,00	4,00	4,00	5,00	5,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	5,00	4,00	5,00	4,00	5,00	4,00
3	Top-Down	4,13	3,75	4,25	4,50	4,13	4,13	3,88	3,88	4,13	3,25	3,25	3,88	3,38	3,25	3,38	4,13	4,13	3,38	3,75	3,38
3	Peer	4,00	3,50	3,75	4,00	4,00	3,50	3,50	3,75	3,50	3,75	3,50	3,25	3,00	4,00	3,75	3,75	4,00	3,50	4,00	3,75
3	Upward	4,00	4,00	4,00	4,00	3,00	3,00	4,00	3,00	3,00	3,00	3,00	4,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00
4	Self	4,00	4,00	4,00	4,00	4,00	3,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	5,00
4	Top-Down	4,75	4,00	4,00	3,50	4,00	3,50	4,00	3,50	3,50	3,75	3,75	4,00	3,75	3,75	4,00	4,00	3,75	3,75	3,75	3,75
4	Peer	4,25	4,25	4,00	4,50	4,25	4,00	4,25	4,00	4,00	4,25	4,00	4,00	4,25	4,25	4,00	4,00	4,00	4,00	4,25	4,25
4	Upward	4,00	4,00	4,00	4,00	5,00	4,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00
5	Self	5,00	4,00	4,00	4,00	5,00	4,00	4,00	5,00	4,00	4,00	4,00	4,00	5,00	4,00	4,00	4,00	5,00	5,00	4,00	5,00
5	Top-Down	4,50	4,75	4,50	4,75	4,75	4,25	4,75	4,50	4,75	4,75	4,75	4,50	5,00	4,75	4,75	4,50	4,50	4,75	4,75	5,00
5	Peer	4,00	4,25	4,00	4,25	4,00	3,75	3,50	3,50	3,75	4,25	3,50	3,50	4,00	4,25	4,25	4,00	4,25	4,00	4,00	4,50
5	Upward	5,00	5,00	5,00	5,00	5,00	4,00	5,00	4,00	3,00	4,00	4,00	5,00	5,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00
6	Self	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00
6	Top-Down	3,75	4,00	4,25	4,00	4,00	4,00	4,25	4,00	4,00	4,25	4,25	4,00	4,25	4,00	4,25	4,25	4,00	3,75	4,25	4,25
6	Peer	4,25	3,75	4,25	3,75	4,25	3,50	3,75	3,75	4,00	4,00	4,25	4,00	4,00	4,00	4,00	4,75	4,50	4,25	4,00	4,50
6	Upward	4,00	3,00	4,00	4,00	4,00	4,00	4,00	4,00	3,00	4,00	4,00	4,00	3,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00
7	Self	4,00	4,00	5,00	4,00	4,00	4,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	5,00	5,00	5,00
7	Top-Down	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
7	Top-Down	5,00	5,00	5,00	4,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00	4,00	5,00
7	Top-Down	4,00	4,00	5,00	4,00	4,00	3,00	3,00	5,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	5,00

7	Top-Down	5,00	3,00	4,00	3,00	3,00	3,00	4,00	4,00	4,00	5,00	5,00	5,00	5,00	4,00	4,00	5,00	5,00	5,00	5,00	4,00
7	Top-Down	4,00	4,00	5,00	4,00	4,00	3,00	3,00	5,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	5,00
8	Self	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
8	Top-Down	2,00	1,75	2,75	2,75	2,00	3,00	3,00	3,00	2,50	2,00	2,50	2,00	2,00	2,75	2,50	3,25	3,25	2,50	2,50	3,00
8	Peer	3,25	3,50	3,75	3,50	3,50	3,25	3,25	3,25	4,00	3,50	3,25	3,00	3,25	3,75	3,75	3,25	3,50	3,50	3,75	4,00
8	Upward	4,00	3,00	3,00	4,00	3,00	3,00	4,00	3,00	3,00	3,00	4,00	3,00	4,00	4,00	4,00	3,00	5,00	4,00	5,00	5,00
9	Self	5,00	4,00	5,00	4,00	4,00	5,00	5,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	5,00	4,00	5,00	4,00	5,00	4,00
9	Top-Down	4,13	3,75	4,25	4,50	4,13	4,13	3,88	3,88	4,13	3,25	3,25	3,88	3,38	3,25	3,38	4,13	4,13	3,38	3,75	3,38
9	Peer	4,00	3,50	3,75	4,00	4,00	3,50	3,50	3,75	3,50	3,75	3,50	3,25	3,00	4,00	3,75	3,75	4,00	3,50	4,00	3,75
9	Upward	4,00	4,00	4,00	4,00	3,00	3,00	4,00	3,00	3,00	3,00	3,00	4,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00
10	Peer	4,25	4,50	4,50	4,50	4,25	4,75	4,00	4,00	3,25	4,75	3,50	3,50	5,00	3,75	4,75	5,00	4,25	4,50	4,50	5,00
10	Upward	3,25	2,75	4,00	3,50	2,50	3,75	3,50	3,50	3,25	4,50	2,75	3,00	3,75	2,75	3,25	3,75	3,00	3,25	2,50	3,50
11	Self	4,00	5,00	5,00	5,00	5,00	4,00	4,00	5,00	4,00	3,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00
11	Peer	3,00	1,50	3,00	2,50	2,50	3,00	3,00	3,50	3,50	3,00	3,50	3,50	2,50	3,50	2,00	3,00	3,50	2,00	3,00	2,50
11	Upward	3,20	3,20	4,00	3,00	4,00	3,40	3,00	4,20	3,00	3,80	3,00	3,00	4,20	4,00	3,00	4,20	4,40	3,20	3,40	4,00
12	Self	3,00	4,00	3,00	4,00	3,00	4,00	3,00	3,00	4,00	4,00	3,00	3,00	3,00	3,00	4,00	3,00	3,00	5,00	4,00	5,00
12	Peer	3,25	3,25	3,25	3,00	3,75	3,25	3,25	3,25	3,25	3,75	3,50	3,25	3,25	3,75	3,50	3,50	3,25	3,25	3,00	3,75
12	Upward	4,20	4,00	4,00	4,40	4,40	4,80	4,00	4,40	4,20	4,00	4,40	4,20	4,40	3,00	4,40	4,00	4,20	4,40	4,40	4,40
13	Top-Down	3,00	3,00	4,00	4,00	5,00	4,00	5,00	5,00	5,00	4,00	4,00	4,00	5,00	3,00	4,00	5,00	5,00	5,00	5,00	5,00
13	Upward	4,00	3,50	4,00	4,25	4,00	4,00		4,00	3,75	3,75	3,75	3,75	4,00		4,00	4,25	3,75	4,00	4,25	4,00
14	Self	4,00	4,00	5,00	3,00	5,00	4,00	5,00	5,00	4,00	5,00	4,00	4,00	5,00	3,00	4,00	5,00	5,00	4,00	5,00	4,00
14	Peer	4,00	4,00	5,00	3,50	5,00	4,00	4,50	4,50	4,00	5,00	4,50	4,50	4,50	3,50	5,00	5,00	5,00	4,50	4,50	4,00
14	Upward	3,00	4,00	5,00	3,00	5,00	4,00	4,00	5,00	4,00	5,00	4,00	4,00	5,00	3,00	5,00	5,00	5,00	5,00	5,00	4,00
15	Self	4,00	4,00	4,00	4,00	5,00	4,00	4,00	5,00	5,00	4,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	4,00
15	Peer	3,00	3,00	3,40	3,40	4,40	3,70	3,40	4,00	3,40	4,00	3,40	3,70	3,40	3,40	3,40	4,00	4,40	3,70	3,00	3,40
15	Upward	3,00	3,50	4,00	3,00	3,50	4,50	3,00	4,00	3,50	4,00	3,50	3,50	4,50	3,50	3,50	4,00	4,00	3,00	3,50	4,50
16	Self	3,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00
16	Peer	3,50	3,00	3,50	3,50	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,50	2,50	3,50	3,00	3,50	3,50	3,50	3,00	3,50
16	Upward	3,00	3,00	4,00	2,00	3,00	2,00	3,00	4,00	2,00	3,00	3,00	4,00	3,00	2,00	4,00	5,00	5,00	5,00	5,00	5,00
17	Self	3,00	4,00	4,00	4,00	3,00	2,00	2,00	5,00	4,00	3,00	3,00	3,00	4,00	4,00	4,00	5,00	4,00	4,00	5,00	5,00
17	Top-Down	3,00	4,00	4,00	4,00	5,00	3,00	3,00	5,00	3,00	4,00	4,00	5,00	4,00	4,00	4,00	5,00	5,00	5,00	5,00	5,00
17	Peer	3,00	4,00	3,00	4,00	3,00	2,00	4,00	3,00	3,00	3,00	3,00	3,00	2,00	5,00	2,00	4,00	3,00	3,00	5,00	5,00
18	Self	5,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
18	Top-Down	4,50	4,50	3,50	4,00	5,00	3,50	3,50	4,50	4,00	4,00	4,50	4,50	5,00	4,50	5,00	5,00	4,50	4,50	4,50	5,00
18	Peer	3,50	3,00	3,00	2,50	4,00	3,00	2,50	3,50	3,00	4,00	4,00	2,50	3,00	3,00	3,00	3,00	4,00	3,00	3,50	3,50
18	Upward	5,00	5,00	5,00	5,00	5,00	5,00	3,40	5,00	5,00	5,00	5,00	5,00	4,40	5,00	5,00	5,00	4,40	4,40	4,70	5,00
19	Self	5,00	5,00	5,00	5,00	5,00	4,00	4,00	4,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00

19	Top-Down	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
19	Peer	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	4,00	5,00	5,00	4,00	5,00	4,00	5,00
20	Self	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	3,00	4,00	3,00	4,00	4,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00
20	Top-Down	3,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00	4,00	4,00	4,00	4,00	4,00	5,00	4,00	5,00	4,00	5,00	4,00	5,00
20	Peer	5,00	5,00	5,00	5,00	5,00	5,00	4,00	4,00	3,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00
20	Upward	5,00	4,00	5,00	5,00	5,00	4,00	5,00	4,00	4,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	5,00
21	Self	5,00	4,00	5,00	4,00	4,00	4,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00
21	Peer	4,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	4,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00
21	Upward	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	4,00	5,00
22	Self	5,00	3,00	4,00	4,00	4,00	5,00	4,00	3,00	4,00	4,00	5,00	3,00	5,00	1,00	4,00	5,00	5,00	4,00	4,00	5,00
22	Top-Down	4,00	3,00	5,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	5,00	4,00	5,00	4,00	5,00	3,00	4,00
22	Peer	2,00	3,00	5,00	4,00	5,00	4,00	4,00	4,00	2,00	4,00	2,00	3,00	5,00	2,00	1,00	5,00	5,00	3,00	4,00	3,00
23	Top-Down	5,00	4,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	4,00	3,00	4,00	3,00	3,00	3,00	3,00
24	Top-Down	3,00	3,00	4,00	4,00	5,00	4,00	3,00	3,00	3,00	4,00	4,00	4,00	5,00	4,00	5,00	4,00	3,00	4,00	3,00	3,00
24	Peer	2,00	3,00	4,00	2,00	2,00	2,00	2,00	2,00	2,00	3,00	3,00	2,00	4,00	1,00	3,00	3,00	2,00	2,00	4,00	2,00
24	Upward	5,00	5,00	5,00	5,00	5,00	4,00	4,00	5,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00
25	Top-Down	4,00	5,00	3,00	4,00	5,00	4,00	3,00	5,00	2,00	3,00	3,00	3,00	4,00	5,00	3,00	4,00	3,00	4,00	4,00	4,00
25	Peer	4,00	5,00	4,00	4,00	5,00	5,00	3,00	5,00	5,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	4,00	2,00	5,00	5,00
26	Top-Down	5,00	4,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	1,00	5,00	5,00	4,00	4,00	4,00	5,00
26	Peer	5,00	4,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	1,00	5,00	5,00	4,00	4,00	4,00	5,00
27	Top-Down	4,00	3,00	2,00	4,00	4,00	2,00	3,00	4,00	2,00	3,00	3,00	3,00	3,00	4,00	3,00	2,00	3,00	4,00	4,00	3,00
28	Top-Down	5,00	4,00	5,00	5,00	4,00	3,00	4,00	3,00	4,00	4,00	3,00	3,00	4,00	3,00	4,00	4,00	4,00	3,00	3,00	3,00
29	Top-Down	4,00	5,00	4,00	4,00	4,00	3,00	4,00	4,00	2,00	3,00	3,00	3,00	4,00	4,00	4,00	4,00	4,00	3,00	4,00	4,00
30	Self	3,00	4,00	3,00	4,00	3,00	4,00	5,00	4,00	3,00	5,00	4,00	3,00	5,00	3,00	4,00	4,00	3,00	5,00	3,00	5,00
30	Top-Down	5,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
30	Peer	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00
31	Self	5,00	5,00	5,00	5,00	5,00	5,00	3,00	5,00	4,00	4,00	4,00	3,00	5,00	1,00	5,00	5,00	4,00	5,00	5,00	5,00
31	Peer	2,00	1,00	3,00	3,00	1,00	3,00	1,00	2,00	1,00	3,00	2,00	3,00	2,00	3,00	3,00	4,00	2,00	3,00	2,00	1,00
31	Upward	5,00	4,00	5,00	4,00	5,00	4,00	5,00	4,00	5,00	4,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	5,00	5,00
32	Top-Down	4,00	4,00	5,00	4,00	4,00	5,00	3,00	4,00	4,00	5,00	4,00	4,00	4,00	1,00	5,00	5,00	4,00	5,00	4,00	5,00
32	Peer	5,00	4,00	4,00	4,00	5,00	5,00	4,00	5,00	3,00	5,00	4,00	4,00	5,00	5,00	5,00	4,00	5,00	3,00	4,00	5,00
33	Self	4,00	5,00	5,00	4,00	5,00	4,00	3,00	5,00	5,00	4,00	4,00	5,00	5,00	3,00	4,00	5,00	4,00	5,00	5,00	5,00
33	Peer	3,00	3,00	3,00	2,00	3,00	3,00	4,00	3,00	3,00	4,00	3,00	2,00	3,00	4,00	4,00	3,00	2,00	3,00	2,00	3,00
34	Self	5,00	4,00	5,00	4,00	5,00	4,00	5,00	4,00	4,00	4,00	5,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00
34	Top-Down	4,00	5,00	4,00	4,00	4,00	3,00	4,00	4,00	2,00	3,00	3,00	3,00	4,00	4,00	4,00	4,00	4,00	3,00	4,00	4,00
34	Peer	3,00	4,00	3,00	4,00	5,00	4,00	2,00	4,00	4,00	3,00	4,00	4,00	5,00	4,00	4,00	3,00	5,00	2,00	3,00	3,00
35	Self	5,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00

35	Top-Down	3,00	3,00	4,00	4,00	4,00	3,00	3,00	4,00	3,00	4,00	4,00	4,00	4,00	3,00	4,00	4,00	3,00	4,00	2,00	3,00
35	Peer	3,00	3,00	4,00	3,00	4,00	3,00	3,00	4,00	4,00	4,00	4,00	3,00	3,00	3,00	4,00	4,00	3,00	3,00	3,00	3,00
35	Upward	3,00	4,00	3,00	3,00	4,00	1,00	3,00	4,00	2,00	3,00	4,00	4,00	2,00	3,00	3,00	4,00	3,00	4,00	2,00	3,00
36	Self	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	4,00	5,00	4,00	5,00	5,00
36	Top-Down	4,00	5,00	4,00	4,00	4,00	4,00	4,00	5,00	4,00	4,00	4,00	4,00	3,00	3,00	5,00	5,00	4,00	5,00	4,00	5,00
36	Peer	4,00	3,00	4,00	4,00	3,00	3,00	4,00	3,00	4,00	3,00	3,00	4,00	3,00	2,00	3,00	3,00	4,00	4,00	4,00	4,00
36	Upward	5,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	5,00	5,00	4,00	4,00	4,00	5,00	4,00	5,00	5,00
37	Self	3,00	4,00	4,00	3,00	4,00	4,00	2,00	3,00	4,00	3,00	3,00	4,00	4,00	2,00	2,00	4,00	5,00	4,00	4,00	4,00
37	Top-Down	4,00	4,00	4,00	5,00	5,00	4,00	4,00	4,00	4,00	4,50	4,00	3,50	5,00	5,00	4,50	5,00	4,50	4,50	4,50	5,00
38	Self	4,00	4,00	4,00	3,00	4,00	4,00	3,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00
38	Top-Down	4,00	4,50	5,00	4,50	4,50	5,00	5,00	4,00	4,00	4,00	4,50	4,00	4,50	4,50	3,00	4,00	3,50	3,50	3,50	4,50
38	Peer	4,00	3,00	2,00	3,00	3,00	4,00	1,00	4,00	3,00	3,00	3,00	4,00	4,00	1,00	3,00	5,00	4,00	3,00	3,00	4,00
38	Upward	4,00	5,00	4,00	3,00	2,00	3,00	3,00	4,00	4,00	3,00	3,00	4,00	4,00	3,00	4,00	4,00	5,00	4,00	4,00	4,00
39	Self	5,00	5,00	3,00	4,00	5,00	5,00	4,00	5,00	4,00	5,00	4,00	3,00	5,00	3,00	5,00	5,00	4,00	4,00	5,00	5,00
39	Top-Down	5,00	4,50	4,00	4,50	5,00	5,00	4,00	4,50	3,50	4,50	4,50	5,00	4,50	4,50	4,00	5,00	4,50	4,50	5,00	5,00
39	Peer	3,00	2,00	3,00	3,00	4,00	3,00	3,00	2,00	2,00	2,00	2,00	3,00	2,00	3,00	2,00	3,00	2,00	3,00	3,00	2,00
39	Upward	3,00	4,00	4,00	5,00	5,00	4,00	3,00	3,00	1,00	3,00	4,00	4,00	4,00	4,00	2,00	3,00	3,00	3,00	4,00	4,00
40	Self	4,00	4,00	4,00	4,00	5,00	4,00	5,00	5,00	4,00	4,00	4,00	4,00	5,00	4,00	4,00	5,00	5,00	5,00	5,00	5,00
40	Top-Down	4,50	4,50	4,50	4,50	4,50	4,50	4,50	4,50	4,00	4,50	4,50	4,50	4,50	4,50	4,00	4,50	4,50	4,00	4,50	4,50
40	Peer	4,00	4,00	3,00	2,00	5,00	4,00	3,00	4,00	4,00	3,00	3,00	4,00	4,00	3,00	3,00	4,00	4,00	3,00	4,00	4,00
40	Upward	5,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00	4,00
41	Self	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	5,00
41	Top-Down	2,50	3,00	2,00	2,00	3,00	4,00	3,00	2,50	2,50	2,00	3,00	2,50	3,00	2,00	2,50	3,00	3,00	2,00	2,50	3,00
41	Peer	4,00	3,00	3,00	3,00	4,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	2,00	3,00	3,00	2,00	2,00	2,00	3,00	3,00
41	Upward	3,00	2,00	3,00	3,00	5,00	5,00	4,00	3,00	4,00	4,00	4,00	3,00	5,00	4,00	2,00	4,00	4,00	3,00	5,00	5,00
42	Self	3,00	4,00	4,00	3,00	4,00	4,00	3,00	5,00	4,00	3,00	3,00	4,00	3,00	4,00	3,00	4,00	5,00	3,00	3,00	5,00
42	Top-Down	2,00	2,00	2,50	1,50	4,00	1,50	2,50	4,00	2,50	4,00	2,00	2,50	1,50	2,00	2,00	3,50	4,00	3,00	2,00	2,00
42	Peer	4,00	4,00	4,00	4,00	5,00	3,00	2,00	4,00	3,00	5,00	4,00	5,00	3,00	3,00	3,00	5,00	5,00	4,00	4,00	4,00
42	Upward	3,00	2,00	4,00	3,00	5,00	3,00	4,00	4,00	3,00	4,00	4,00	4,00	2,00	4,00	4,00	5,00	4,00	5,00	4,00	5,00
43	Self	4,00	5,00	4,00	4,00	5,00	5,00	5,00	5,00	4,00	5,00	4,00	5,00	5,00	4,00	4,00	4,00	5,00	4,00	4,00	5,00
43	Top-Down	4,00	4,50	4,00	4,00	4,50	5,00	3,50	4,00	5,00	4,50	5,00	4,50	4,50	4,00	4,00	4,50	4,50	4,00	4,50	4,50
43	Peer	4,00	3,00	4,00	3,00	4,00	4,00	3,00	3,00	4,00	4,00	4,00	3,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00	4,00
43	Upward	4,00	4,00	5,00	4,00	5,00	4,00	4,00	5,00	5,00	5,00	4,00	4,00	4,00	3,00	4,00	5,00	5,00	4,00	5,00	5,00
44	Self	4,00	4,00	3,00	3,00	4,00	3,00	4,00	4,00	4,00	3,00	4,00	4,00	5,00	3,00	4,00	5,00	3,00	4,00	4,00	5,00
44	Top-Down	3,00	3,50	2,50	3,00	4,50	2,00	2,00	2,00	1,50	3,50	3,50	2,50	4,00	3,50	3,50	5,00	4,50	4,00	4,00	5,00
44	Peer	4,00	3,00	4,00	3,00	4,00	4,00	4,00	4,00	3,00	4,00	4,00	4,00	4,00	3,00	3,00	4,00	3,00	3,00	4,00	4,00
44	Upward	3,00	2,00	3,00	4,00	5,00	4,00	4,00	5,00	4,00	4,00	5,00	5,00	5,00	4,00	3,00	5,00	4,00	5,00	5,00	5,00

45	Self	4,00	4,00	4,00	3,00	4,00	3,00	4,00	3,00	4,00	4,00	5,00	5,00	4,00	3,00	4,00	4,00	3,00	4,00	4,00	5,00
45	Top-Down	3,50	2,50	3,00	2,50	4,50	2,50	3,00	3,50	2,00	3,00	3,50	2,50	3,00	2,50	2,50	2,50	3,00	3,00	3,50	4,50
45	Peer	3,00	4,00	3,00	2,00	5,00	3,00	2,00	3,00	2,00	4,00	5,00	4,00	4,00	2,00	4,00	4,00	4,00	4,00	4,00	5,00
45	Upward	4,00	3,00	3,00	3,00	2,00	3,00	4,00	3,00	3,00	4,00	4,00	3,00	4,00	5,00	4,00	4,00	5,00	5,00	4,00	5,00
46	Self	4,00	3,00	5,00	5,00	5,00	5,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00
46	Top-Down	2,00	2,00	3,50	1,50	4,00	2,00	2,00	2,00	3,50	3,50	4,00	3,00	3,50	2,00	3,50	4,50	5,00	3,50	4,50	4,50
46	Peer	3,00	4,00	4,00	2,00	4,00	3,00	3,00	2,00	3,00	4,00	4,00	3,00	3,00	2,00	4,00	5,00	4,00	4,00	4,00	4,00
46	Upward	4,00	3,00	4,00	4,00	4,00	2,00	2,00	2,00	4,00	5,00	4,00	3,00	4,00	3,00	5,00	5,00	5,00	5,00	5,00	5,00
47	Top-Down	4,00	4,00	4,50	4,50	3,50	5,00	4,00	4,00	4,00	4,50	4,50	3,50	3,50	4,50	3,50	4,50	4,00	4,50	4,50	4,00
47	Peer	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	3,00	5,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00
48	Self	4,00	3,00	4,00	4,00	4,00	5,00	4,00	5,00	4,00	5,00	4,00	3,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	4,00
48	Top-Down	4,00	4,00	4,50	4,00	5,00	4,50	3,00	5,00	5,00	5,00	3,50	2,50	5,00	4,50	4,50	4,50	4,50	5,00	4,50	5,00
48	Peer	4,00	3,00	4,00	3,00	2,00	4,00	2,00	4,00	2,00	5,00	4,00	4,00	3,00	3,00	3,00	5,00	4,00	3,00	3,00	4,00
49	Top-Down	4,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	3,00	4,00	4,00	4,00	5,00	4,00	5,00
49	Peer	2,00	3,00	2,00	3,00	4,00	2,00	2,00	2,00	2,00	3,00	4,00	2,00	3,00	2,00	3,00	3,00	3,00	4,00	3,00	3,00
50	Self	4,00	5,00	4,00	5,00	4,00	5,00	4,00	5,00	5,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	4,00	4,00	5,00	4,00
50	Top-Down	3,50	3,50	4,00	4,50	4,00	5,00	4,00	5,00	5,00	4,00	4,50	4,00	4,00	4,50	3,50	4,50	3,50	4,00	3,50	4,00
50	Peer	3,00	3,00	4,00	3,00	4,00	3,00	3,00	3,00	4,00	3,00	3,00	4,00	3,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00
51	Self	5,00	4,00	4,00	4,00	5,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	4,00	4,00	5,00	5,00	5,00	5,00	5,00	4,00
51	Top-Down	4,00	4,50	4,50	4,00	5,00	3,50	4,00	4,00	3,50	4,50	4,50	4,00	4,00	4,50	4,00	4,50	4,50	4,00	4,00	5,00
51	Peer	5,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
52	Self	4,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	3,00	4,00	4,00	3,00	5,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00
52	Top-Down	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	3,00	4,00	3,00	4,00	3,00	4,00	4,00	3,00	3,00	4,00	3,00
52	Peer	3,00	3,00	4,00	3,00	5,00	3,00	3,00	4,00	3,00	4,00	4,00	3,00	4,00	3,00	4,00	3,00	4,00	3,00	4,00	4,00
53	Self	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
53	Top-Down	2,50	3,00	3,50	3,00	3,50	3,00	3,00	3,50	3,00	3,00	3,00	3,00	3,00	3,00	3,00	4,50	4,00	3,00	3,00	3,50
53	Peer	4,00	4,00	3,00	3,00	3,00	4,00	3,00	3,00	3,00	3,00	3,00	4,00	4,00	4,00	3,00	4,00	3,00	4,00	3,00	4,00
54	Self	4,00	4,00	5,00	3,00	4,00	4,00	4,00	5,00	4,00	4,00	4,00	4,00	5,00	3,00	4,00	5,00	5,00	4,00	5,00	5,00
54	Top-Down	4,50	5,00	4,50	4,00	5,00	5,00	4,50	4,50	5,00	5,00	4,50	4,00	4,50	4,00	5,00	5,00	4,50	4,50	4,50	4,50
54	Peer	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
55	Self	4,00	3,00	3,00	4,00	5,00	3,00	4,00	5,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	5,00	5,00	4,00	5,00
55	Top-Down	3,00	3,00	4,00	3,00	4,00	3,00	3,00	3,00	3,00	2,50	3,00	3,00	4,00	3,50	3,00	3,00	4,00	3,50	3,00	3,50
55	Peer	3,00	2,00	3,00	2,00	3,00	4,00	4,00	3,00	3,00	4,00	3,00	3,00	5,00	3,00	4,00	4,00	3,00	4,00	3,00	4,00
56	Self	4,00	4,00	5,00	4,00	4,00	4,00	3,00	5,00	4,00	4,00	3,00	4,00	3,00	3,00	4,00	5,00	4,00	5,00	4,00	5,00
56	Top-Down	3,00	3,00	3,00	3,00	4,00	3,00	3,00	4,00	3,00	3,00	4,00	3,00	2,00	2,00	4,00	4,00	4,00	3,00	3,00	4,00
56	Peer	4,00	5,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	4,00	3,00	4,00	5,00	5,00	5,00	4,00	4,00
56	Upward	4,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	5,00	4,00	3,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00

57	Self	4,00	4,00	4,00	4,00	5,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	3,00	4,00	5,00	5,00	4,00	4,00	5,00
57	Top-Down	3,00	3,00	4,00	3,00	3,00	1,00	2,00	4,00	2,00	5,00	2,00	4,00	1,00	1,00	4,00	5,00	4,00	1,00	2,00	2,00
57	Peer	4,00	4,00	5,00	5,00	5,00	5,00	4,00	4,00	5,00	5,00	4,00	4,00	4,00	4,00	3,00	5,00	4,00	4,00	4,00	4,00
57	Upward	5,00	4,00	5,00	5,00	5,00	4,00	3,00	5,00	5,00	5,00	3,00	4,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00
58	Self	4,00	4,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	4,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	4,00
58	Top-Down	1,00	2,00	4,00	1,00	3,00	2,00	3,00	3,00	3,00	4,00	4,00	2,00	2,00	1,00	2,00	4,00	3,00	1,00	4,00	4,00
58	Peer	2,00	2,00	4,00	3,00	3,00	1,00	1,00	3,00	3,00	3,00	2,00	3,00	1,00	1,00	3,00	3,00	4,00	3,00	3,00	4,00
58	Upward	5,00	5,00	5,00	4,00	5,00	4,00	5,00	4,00	4,00	5,00	5,00	4,00	4,00	4,00	5,00	5,00	3,00	5,00	5,00	5,00
59	Self	5,00	4,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
59	Top-Down	3,00	2,00	4,00	3,00	5,00	4,00	2,00	4,00	2,00	3,00	4,00	3,00	3,00	5,00	3,00	4,00	4,00	3,00	2,00	2,00
59	Peer	4,00	4,00	3,00	5,00	5,00	3,00	4,00	3,00	4,00	5,00	4,00	4,00	4,00	5,00	4,00	5,00	5,00	4,00	3,00	4,00
59	Upward	4,00	4,00	4,00	4,00	4,00	3,00	5,00	4,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00
60	Self	4,00	4,00	4,00	4,00	3,00	4,00	4,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00	3,00	4,00	4,00	4,00	4,00	5,00
60	Top-Down	4,00	4,00	5,00	5,00	5,00	5,00	4,00	4,00	5,00	5,00	4,00	4,00	5,00	3,00	5,00	5,00	5,00	4,00	4,00	5,00
60	Peer	5,00	5,00	5,00	5,00	4,00	5,00	3,00	4,00	3,00	3,00	3,00	3,00	5,00	3,00	5,00	5,00	5,00	5,00	5,00	5,00
60	Upward	4,00	4,00	4,00	4,00	5,00	3,00	4,00	4,00	3,00	3,00	4,00	4,00	3,00	4,00	4,00	4,00	5,00	4,00	4,00	5,00
61	Self	4,00	4,00	5,00	4,00	3,00	4,00	3,00	4,00	3,00	3,00	4,00	4,00	5,00	4,00	5,00	5,00	4,00	5,00	4,00	5,00
61	Top-Down	4,00	3,00	5,00	5,00	5,00	4,00	3,00	5,00	5,00	5,00	5,00	4,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00
61	Peer	4,00	2,00	3,00	3,00	5,00	5,00	4,00	3,00	3,00	4,00	3,00	3,00	3,00	2,00	3,00	5,00	5,00	4,00	4,00	4,00
61	Upward	5,00	4,00	5,00	4,00	5,00	5,00	5,00	4,00	4,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	5,00	4,00
62	Self	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	4,00	4,00	4,00	5,00	4,00	4,00	5,00	5,00	5,00	4,00	4,00
62	Top-Down	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
62	Peer	4,00	4,00	4,00	3,00	3,00	5,00	4,00	5,00	3,00	3,00	4,00	4,00	4,00	2,00	4,00	5,00	4,00	3,00	4,00	3,00
62	Upward	4,00	4,00	3,00	4,00	4,00	3,00	3,00	3,00	3,00	3,00	4,00	4,00	3,00		5,00	3,00	4,00	4,00	4,00	5,00
63	Self	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
63	Top-Down	3,00	4,00	5,00	3,00	5,00	3,00	5,00	5,00	4,00	4,00	4,00	4,00	3,00	3,00	3,00	5,00	5,00	4,00	4,00	4,00
63	Peer	4,00	4,00	4,00	4,00	5,00	4,00	4,00	4,00	3,00	4,00	3,00	3,00	3,00	4,00	3,00	4,00	4,00	4,00	4,00	3,00
63	Upward	2,00	2,00	4,00	2,00	4,00	2,00	3,00	4,00	2,00	4,00	3,00	3,00	4,00	2,00	4,00	3,00	4,00	4,00	3,00	4,00
64	Self	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
64	Top-Down	3,00	4,00	4,00	3,00	5,00	4,00	4,00	3,00	4,00	4,00	3,00	3,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00
64	Peer	5,00	4,00	5,00	5,00	5,00	5,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	3,00	4,00	5,00	5,00	4,00	4,00	5,00
64	Upward	3,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	3,00	3,00	4,00	4,00	4,00		4,00	3,00	3,00	5,00	4,00	5,00
65	Self	4,00	4,00	4,00	3,00	5,00	4,00	4,00	5,00	4,00	5,00	4,00	4,00	5,00	4,00	4,00	5,00	4,00	4,00	4,00	5,00
65	Top-Down	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	4,00	4,00	5,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00
65	Peer	3,00	4,00	4,00	3,00	5,00	4,00	3,00	3,00	4,00	4,00	4,00	4,00	5,00	3,00	3,00	4,00	4,00	4,00	4,00	4,00
65	Upward	4,00	4,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00	3,00	3,00	3,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00	4,00
66	Self	3,00	4,00	3,00	3,00	4,00	2,00	4,00	4,00	3,00	4,00	3,00	3,00	5,00	2,00	4,00	4,00	4,00	4,00	4,00	5,00

66	Top-Down	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	4,00	5,00	4,00	4,00	5,00	4,00	4,00	5,00	5,00	5,00	5,00	5,00
66	Peer	3,00	2,00	3,00	3,00	5,00	3,00	3,00	3,00	3,00	3,00	3,00	4,00	5,00	3,00	3,00	4,00	4,00	3,00	2,00	2,00
66	Upward	4,00	3,00	5,00	5,00	5,00	4,00	3,00	5,00	5,00	5,00	5,00	4,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00
67	Self		4,00	4,00	3,50		3,50	3,80	3,80	3,80	3,50	3,50	3,50	4,00	3,00	5,00	4,00	5,00	4,00	4,00	5,00
67	Top-Down	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	3,50	4,50	4,00	4,00	3,50
67	Peer																4,00	4,50	4,50	5,00	4,50
67	Upward																5,00	5,00	5,00	5,00	5,00
68	Self	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	4,00	5,00	4,00	5,00	4,00	4,00	5,00	5,00	5,00
68	Top-Down	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	2,50	2,50	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00
68	Peer	4,00	4,00	4,00	3,00	4,00	4,00	2,50	2,50	4,00	3,00	2,50	2,50	3,00	3,00	3,00	3,50	3,50	3,50	3,50	4,00
69	Top-Down	4,00	4,50	4,00	4,00	4,00	4,00	3,50	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,80	4,00	4,00	4,00	4,00
69	Peer																				
70	Self	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
70	Peer	5,00	5,00	5,00	5,00	5,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	4,00	4,00
70	Upward	4,20	4,00	4,00	4,40	4,40	4,80	4,00	4,40	4,20	4,00	4,40	4,20	4,40	3,00	4,40	4,00	4,20	4,40	4,40	4,40
71	Top-Down	3,00	3,00	4,00	4,00	5,00	4,00	5,00	5,00	5,00	4,00	4,00	4,00	5,00	3,00	4,00	5,00	5,00	5,00	5,00	5,00
71	Peer						5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
71	Upward	4,00	3,50	4,00	4,25	4,00	4,00		4,00	3,75	3,75	3,75	3,75	4,00		4,00	4,25	3,75	4,00	4,25	4,00
72	Self	4,00	4,00	5,00	3,00	5,00	4,00	5,00	5,00	4,00	5,00	4,00	4,00	5,00	3,00	4,00	5,00	5,00	4,00	5,00	4,00
72	Peer	4,00	4,00	5,00	3,50	5,00	4,00	4,50	4,50	4,00	5,00	4,50	4,50	4,50	3,50	5,00	5,00	5,00	4,50	4,50	4,00
72	Upward	3,00	4,00	5,00	3,00	5,00	4,00	4,00	5,00	4,00	5,00	4,00	4,00	5,00	3,00	5,00	5,00	5,00	5,00	5,00	4,00
73	Self	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	4,50	4,50	5,00	4,50	5,00	5,00	5,00	5,00	5,00	5,00
73	Top-Down	4,00	4,00	4,00	3,50	3,50	4,50	4,00	4,00	4,50	4,00	4,00	4,00	4,00	4,00	4,00	4,50	4,00	4,50	4,00	4,00
73	Peer	4,00	4,50	4,50	4,00	4,50	4,00	4,00	4,00	4,00	4,00	4,50	4,00	4,50	4,00	4,00	4,50	4,00	4,00	4,50	4,00
74	Self		4,50	4,50	4,00	4,50	4,00	4,00	4,00	5,00	4,00	4,00	4,00	5,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00
74	Peer	5,00	5,00	5,00	5,00	5,00	4,00	4,50	4,50	4,00	4,00	5,00	4,00	5,00	4,00	4,00	5,00	4,00	5,00	5,00	4,00
75	Self	4,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	4,00	4,00	4,00	5,00	5,00	4,00	4,00	5,00	5,00
75	Top-Down	3,50	3,50	4,00	3,50	3,50	3,00	3,50	3,50	3,00	3,00	3,00	3,00	3,00	3,00	3,00	4,00	3,00	4,00	3,00	3,00
75	Peer	4,00	3,50	4,00	3,50	4,00	4,00	4,00	4,00	4,00	4,00	5,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	3,00	4,00
75	Upward	4,00	3,50	4,00	3,50	4,00	4,00	4,00	4,00	4,00	4,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00	4,00	3,00	4,00
76	Self	5,00	5,00	5,00	5,00	5,00															
77	Self	5,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	4,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
77	Upward						4,00	3,00	4,00	3,00	4,00	3,00	3,00	4,00	3,00	4,00	4,00	3,00	4,00	4,00	3,00
78	Self		4,00	3,00	5,00		4,00	4,00	5,00	4,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	4,00	5,00	5,00	5,00
78	Peer	5,00	5,00	5,00	5,00	5,00	4,00	4,00	4,00	5,00	4,00	5,00	4,00	5,00	4,00	4,00	4,00	4,00	5,00	5,00	5,00
78	Upward						3,00	3,00	3,00	4,00	4,00	4,00	3,00	4,00	3,00	4,00	3,00	3,00	4,00	4,00	4,00
79	Self		4,00	5,00	4,00	5,00	4,00	5,00	5,00	5,00	5,00	4,00	4,00	5,00	4,00	4,00	4,00	4,00	5,00	5,00	5,00

79	Top-Down	5,00	5,00	5,00	5,00	5,00	4,00	4,00	4,00	4,00	3,00	3,00	3,00	3,00	3,00	2,00	5,00	4,00	3,00	4,00	5,00
79	Peer	3,00	4,00	5,00	3,00	4,00	3,00	4,00	5,00	4,00	5,00	3,00	4,00	5,00	5,00	4,00	4,00	3,00	3,00	5,00	4,00
79	Upward	4,00	4,00	3,00	4,00	4,00	4,00		4,00	4,00	4,00	4,00	4,00	3,00		4,00	4,00	4,00	4,00	4,00	3,00
80	Self	5,00	5,00	5,00	5,00	5,00	5,00	4,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
80	Top-Down						3,50	3,50	4,50	4,00											
80	Peer	3,50	4,50	5,00	4,50	4,50	3,50	3,50	4,50	4,00	4,50	4,00	5,00	4,00	4,00	4,00					
80	Upward						5,00	3,40	5,00	5,00							4,00	5,00	4,50	5,00	5,00

Person number	Male/Female	0-5-10year+	Education (uni=1)	Manager/Supervisor	Year	Tally	Division	Country	Ra
10	1	3	1	1	2016	42	DTS and Africa	South Africa	Pe
10	1	3	1	1	2016	43	DTS and Africa	South Africa	Up
20	1	1	1	2	2016	71	MDX	South Africa	Se
20	1	1	1	2	2016	72	MDX	South Africa	To
20	1	1	1	2	2016	73	MDX	South Africa	Pe
20	1	1	1	2	2016	74	MDX	South Africa	Up
21	1	3	1	1	2016	75	MDX	South Africa	Se
21	1	3	1	1	2016	76	MDX	South Africa	Pe
21	1	3	1	1	2016	77	MDX	South Africa	Up
47	1	3	1	1	2016	151	Peru	Peru	To
47	1	3	1	1	2016	152	Peru	Peru	Pe
69	1	2	1	1	2016	227	MDSA	South Africa	To
69	1	2	1	1	2016	228	MDSA	South	Pe

Africa