

The determinants of effective performance management in South African utility companies

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ABSTRACT

The purpose of this study was to evaluate the determinants of effective performance management in South African utility companies. A non-profit organisation was chosen as a representative company for the water utility sector in South Africa. The organisation has embarked on a process of developing a performance management system and this study will aid the organisation in their process. The study was undertaken to understand what the determinants of an effective performance management system are.

A comprehensive literature review was conducted by the researcher to get a better understanding of the various aspects of performance management and an overview of the water sector of South Africa. An empirical study was conducted and questionnaires were used to gather the data. An analysis of the research data was utilised to conclude the findings.

Employee involvement, proper design of the reward system, effective performance appraisal and the successful implementation of the system are some key factors for effective performance management. The findings of the study indicate that employee involvement is low. The employees perceive the vision, mission and strategy within the organisation as poorly articulated and feel that they are not rewarded for their skills and knowledge. The majority of the respondents apprehend the performance appraisal system to be unfair.

The author prescribed recommendations to improve employee involvement and the articulation of the vision, mission and strategy of the organisation.

KEYWORDS: Determinants, Performance Management, Rewards, Performance Appraisal.

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CHAPTER 1: NATURE AND SCOPE OF THE STUDY

1.1 Introduction

Organisations come about when groups of people put together their efforts for a communal goal. Having a joint goal to work towards require alignment in the efforts of various people to achieve this goal. As a result of falling commodity prices and increasing financial market volatility, the world economy has stumbled in 2015 (United Nations, 2016:1). Current economic, political and social conditions worldwide burdens organisations in their efforts to be effective, to be profitable and to survive. With ever increasing populations and resources that remain rather stable increasing more innovative approaches and methods are searched to ensure that the demands of consumers are met.

The South African economy faces a period of low commodity prices, heightened financial market volatility, and diminished consumer and business confidence (National Treasury, 2016:17). South Africa is not unique in this sense and agonises under the same economic, political and social constraints. With various levels of instability, turmoil and dynamics in play, organisations that function outside the expected business for revenue realm, such as non-government, and non-profit organisations find it difficult to balance the available resources with the growing demand from consumers and clients.

Water utility companies, just like other organisations, need to align their resources to their strategic objectives and this must be an on-going process. (Jain, 2014; Page, 2015). This process can be achieved through performance management. The tasks that employees execute should lead to the further achievement of organisational goals. Organisations should be continually assessing the skills of their employees against the current and future plans of the business. Organisations need not only to recruit competent and skilled workers and develop current employees in pursuit of executing their strategic objectives, but they also need to align resources to the organisation's strategic objectives. By aligning resources, the organisation ensures that its employees are not only developed in an effective manner to execute the strategic objectives, but also that their work efforts are aligned and directed to achieve the set strategic objectives.

Performance management is a process that allows organisations to align the organisation's objectives and goals to its resources (Jain, 2014). Armstrong (2006:1) defines performance management as "a systematic process for improving organisational performance by

developing the performance of individuals and teams". The scope of performance management includes the performance of an organisation, a department, employee, or even the processes to build a product or service. According to Fitzpatrick and Morrison (as cited by Johnson *et al.*, 2009:2), performance is "a sequence of responses aimed at modifying the environment in specified ways". Performance management ultimately is the practice of setting goals and expectations for employees, periodically monitoring and rating the performance of employees and rewarding the employees according to their performance.

Performance management systems are vital tools that will aid the organisation in achieving its strategic objectives and also provide a measurement tool for the organisation's strategic objectives. Organisations are more and more realising the importance of performance management systems and, as stated by Bento and Bento (2006:23) "Organisations are investing ever-increasing amounts of resources into Performance Management Systems, but it is still not clear what they can expect in return, or how they might influence the likelihood of positive system outcomes". It is however clear that organisations value the importance of performance management systems and that they need to identify the determinants of effective performance management in order to derive maximum benefit from these performance management systems. Failure to execute strategy, unfulfilled return on investment (ROI), escalation in accountability for results with consequences, the need for quick trade-off decision analysis, mistrust of the managerial accounting system and poor customer management are the major forces that have caused interest in performance management (Cokins, 2009:42).

Performance also needs to be appraised to affect the expected increase in performance. Performance appraisal, as a core HR practice, is usually conducted within a formal setting in order to provide a basis for decisions about employees' performance and how the individual's performance can be rewarded (e.g., pay and promotional decisions); improve employees' performance, and ultimately enhance the effectiveness of the organisation (DeNisi & Sonesh, 2010:258). Detecting performance deficiencies through reflection may prompt remedial activities (Petriglieri *et al.*, 2011:442), such as receiving new ideas through knowledge sharing or experimenting with new approaches through innovative behaviour. When performance is measured and analysed, the organisation can then determine which resources need to be developed to improve performance.

Lawler and Worley (2006) note that, for an organisation to sustain performance excellence, the organisation must respond to its changing business demands. There are many

challenges that face every business, irrespective of the size of the business. Challenges are problems and obstacles that a business must solve or overcome with the intention of being profitable or sustainable, or just to perform effectively. The water utility industry in South Africa faces many challenges and the Department of Water Affairs (2010 & 2013) and Midvaal Water (2013) list the following as challenges;

- water scarcity
- legislation
- increasing energy costs
- Blue Drop certification
- deteriorating raw water conditions
- poverty
- non-revenue water
- acid mine drainage (AMD)

Companies belonging to the water utility industry need to adapt their strategies to face these challenges. According to Bento and Bento (2006:24) "Performance Measurement Systems (PMS) enable organisations to plan, measure and control their performance, so that decisions, resources and activities can be better aligned with business strategies to achieve desired results and create shareholder value". When performance is measured and analysed, the organisation can then determine which resources need to be developed to improve performance. The results of improved individual performance will lead to the achievement of business objectives and the creation of shareholder value. Strategic goals are broken down into individual goals, thus ensuring the alignment of resources and individual efforts with the strategy.

Midvaal Water is a water utility company distributing bulk potable water in the municipalities of Klerksdorp, Orkney, Stilfontein and Hartebeesfontein in the North West Province, also referred to as the KOSH area. The company was founded in 1954 and is situated on the banks of the Vaal River in Klerksdorp. As a result of the strategic management session in 2014, the company realised that a better performance management system has to be implemented to improve employee performance.

The organisation rewards its employees with bonuses on a quarterly basis. These bonuses are not linked to the employees' performance. Previously, before 2003, the reward system was linked to both organisational performance and individual performance. However, it was

contested that the performance management system was not fair for employees. Employees complained that their performance was not appraised according to their work standards but according to their relationship with their supervisors. Management then decided that all or no employees would receive a fixed percentage bonus based on cost-saving measures across the entire organisation, thus organisational performance. The problem following the practice is that employees expect to receive bonuses irrespective of their individual performance. This has created a culture of non-performance since bonuses are paid irrespective of individual performance. The importance of individual performance and the appraisal thereof within the organisation-wide performance cannot be overstated and depend on how clear their goals are (Tatar, 2011:115). Individual performance management is important for overall organisational performance. For organisations to achieve their goals, the employees need to have a clear understanding of both organisational goals as well as individual goals aimed at achieving the former.

A reward system is an important motivator that may contribute towards the enhancement of employee productivity, if implemented properly (Jain, 2014:1). Employees who are performing prefer the reward system to be linked to individual performance, while those who are not performing would prefer the reward system to be linked to the company performance. The reward system is not linked to performance, thus not reinforcing good performance or behaviour. In order for organisations to be sustainable in the competitive markets, organisations need to perform and for organisations to perform, the employees need to perform. Therefore, to motivate employees to perform, the reward system should be linked to performance.

The organisation needs to effectively manage the performance of its employees to address the current problems of poor employee performance. According to Pulakos (2004), the possible outcomes of effective performance management are the clarification of job responsibilities and expectations, the enhancement of individual and group productivity, the development of employee capabilities, the alignment of employee behaviour to organisational strategy and the improvement of communication between employees and managers.

According to Whitley (2002:91), "Two factors influence the choice of a research topic: the researcher's interest in the topic and the feasibility of carrying out research on the topic". As an employee of Midvaal Water, the researcher has a vested interest in the performance management system and this research of the determinants of an effective performance

management will aid in the implementation of an effective and successful employee performance management system at Midvaal Water. The study is expected to add value by identifying the factors that contribute to effective performance management in organisations in the South African water utility industry.

1.2 Problem statement

Organisations within the water utility sector in South Africa are faced with many challenges like water scarcity, legislation, increasing energy costs, Blue Drop certification, deteriorating raw water conditions, poverty, nonrevenue water and acid mine drainage (AMD). These challenges impede the performance of organisations in the water utility role and compel the water utility industry to seek better ways to manage employees and their performance. Lawler and Worley (2006) state that, for an organisation to sustain performance excellence, the organisation must respond to its changing business demands. Effective performance management systems enable an organisation to plan, measure and control its performance, so that decisions, resources and activities can be better aligned with business strategies to achieve desired results.

Currently, Midvaal Water does not have an effective performance management system in place. As a result of the strategic management session in 2014, the company has realised that an effective performance management system has to be implemented to aid the company in reaching its strategic objectives. Bonuses are paid irrespective of employee performance. A reward system is a crucial motivator contributing towards the enhancement of employee productivity, if implemented properly. The current reward system is not linked to performance. This is perpetuating a culture of non-performance. Linking the reward to performance is believed to create a culture of excellent performance.

According to Bento and Bento (2006), organisations are not clear on what can be expected in return from a good performance management system. This despite, the huge investments that are made towards performance management systems are an indication that organisations are realising the importance of performance management systems. The huge investments of resources necessitate that these systems be effective.

In pursuit of excellent results and creating effective performance management systems, organisations will need to identify the factors that are necessary for effective performance management in their organisation.

1.3 Objectives

The research objectives of this study were divided into main and secondary objectives.

1.3.1 Main objective

The general objective of this research was to identify the factors that contribute to effective performance management in organisations within the water utility industry in South Africa.

1.3.2 Secondary objectives

The secondary objectives of this research were:

- To evaluate performance management practices in organisations within the South African water utility industry.
- To determine what is effective performance management.

1.4 Research design/method

A literature review on performance management and an empirical study were conducted.

1.4.1 Literature review

A comprehensive literature review was conducted by the author to obtain a better understanding of the various aspects of performance management. The literature review also provided scientific backing to the current research study.

The following sources were consulted during the literature review:

- Academic Books
- Academic journals
- Internet sources
- Business magazines
- Articles
- NWU online library

1.4.2 Empirical research

The research approach was quantitative. The research was conducted at Midvaal Water with the granted permission of senior management (Annexure C).

1.4.2.1 Structured interview and questionnaires

Data was collected via a structured questionnaire. Open-ended questions also formed part of the structured questionnaire (Annexure A). Questionnaires were hand delivered to the participants of the research study and provided an economic approach of data gathering. The responses could be easily quantified and summarised. The data was analysed to determine the factors that contributed to effective performance management. During the research, no intervention was administered.

1.4.2.2 Sampling

A population consists of all the individuals about whom the researcher wants to draw a conclusion, while a sample is the portion of a population selected for analysis (Lavine *et al.*, 2011:34). The sample was drawn from all employees of Midvaal Water. The sample size was n=68. A stratified sampling method was chosen to ensure that the samples contained the various occupational levels and that the sample was diverse with regard to age, gender, years' service and skills levels. The sample therefore included representatives from senior management, middle management, supervisors and junior level employees.

1.4.2.3 Measuring instrument(s) and scale

A structured questionnaire was used as the measuring instrument. The questionnaire was compiled taking into consideration the various factors relating to performance management. The questionnaire was divided into seven sections. Section A related to the demographical information of the respondents. Section B related to the respondents view about his or her supervisor. Section C related to performance appraisal. Section D related to the balanced scorecard. Section E related to the articulation of the vision, mission, and strategy. Section F related to employee involvement. To avoid biases of the respondents, both positive and negative questions were asked.

A 5-point Likert response scale ranging from 1 (strongly disagree) to 5 (strongly agree) as depicted in Table 1.1 was used as a scale on the measuring instrument.

Table 1.1: 5-point Likert scale

1	2	3	4	5
Strongly agree	Agree	Unsure	Disagree	Strongly disagree

(Source: Vagias, 2006)

1.4.2.4 Data analysis

The data collected was captured on a Microsoft Excel spreadsheet. An array of descriptive statistics was generated through Microsoft Excel and phStats.

1.4.2.5 Limitations of the study

The limitations of the study are those characteristics of design or methodology that impacted or influenced the interpretation of the findings from the research. The limitation of this study was that other Water Utility companies did not participate in the research as initially intended and some research participants were also not willing to take part in the survey.

1.4.2.6 Reliability

Reliability of a measuring instrument is how well the instrument consistently measures what the instrument was designed to measure and that Cronbach's alpha value is a way to indicate this reliability (Andale, 2014). The reliability of the measuring instruments was verified by Cronbach's alpha value.

1.5 The importance of the study

Organisations are driven to implement superior practices that will enhance their performance with the vision to be customer focused, to reduce cost, to achieve operational excellence and to achieve and sustain a competitive advantage (Hough *et al.*, 2011:06). The study of performance management and the determinants of effective performance management are important for organisations within the South African water utility sector in ensuring that they implement top-notch practices.

1.6 Chapter layout

This mini-dissertation is divided into 5 chapters.

Chapter 1: Nature and scope of the study

The objective of chapter 1 is to provide the reader with a general introduction to the study, highlighting the various reasons why the topic was chosen focussing on general observations, other reported research and business findings related to the specific identified situation and conditions in the industry and the specific organisation where the research was conducted, and therefore also the importance of the study. This chapter contains the introduction, problem statement, research objectives, research methodology, assumptions and limitations of the study. The purpose of this study was to evaluate the determinants of effective performance management in South African water utility companies.

Chapter 2: Literature review

Chapter 2 contains a comprehensive literature review about performance management and the performance management process. The aim of this chapter is for the reader to get a better understanding of the various aspects of performance management and the key determinants of effective performance management.

Chapter 3: Overview of the Water Sector

Chapter 3 presents an overview of the water sector in South Africa. In this chapter, the key role players in the water utility sector and the challenges faced in the water sector are discussed.

Chapter 4: Empirical study

This chapter presents the research methodology approach applied in the study. In this chapter, the data collection method used, the demographics about the sample and the sampling method are discussed. The results of the investigation are presented and discussed.

Chapter 5: Conclusions and recommendations

Conclusions and recommendations are presented in this chapter, based on the literature review and findings from the empirical study. These findings include aspects of performance management that the employees do not understand well and need to be trained in, or that should be communicated better to the employees. Recommendations for these issues are documented in this chapter.

1.7 Chapter summary

The purpose of this study was to evaluate the determinants of effective performance management in South African utility companies. Effective performance management are vital practices that will aid the organisation in achieving its strategic objectives.

Organisations within the water utility sector in South Africa are faced with many challenges like water scarcity, legislation, increasing energy costs, Blue Drop certification, deteriorating raw water conditions, poverty, non-revenue water and acid mine drainage (AMD). To ensure sustainability, these organisations need to perform effectively, mitigating against the above-mentioned challenges.

Midvaal Water has embarked on a process of developing a performance management system and this study will aid the organisation in their process. The study was undertaken to understand what the determinants of an effective performance management system are.

The research was conducted at Midvaal Water with the granted permission of management (Annexure C). A quantitative research approach was followed. A structured questionnaire was used to collect data from 68 employees at Midvaal Water. Research ethics were adhered to during the study, such as assuring the respondents of their anonymity and ensuring that the data was kept confidential. A 5-point Likert response scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used as the measuring scale on the questionnaires. The reliability of the measuring instrument was verified by Cronbach's alpha (Annexure D). The study is however limited in that other Water Utility companies were not included in the research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Organisations are constantly under threat to perform amidst an array of challenging external and internal factors. These challenges include social, political and economic factors that need to be negotiated to stay relevant as a business. Lawler and Worley (2006) state that, for an organisation to sustain performance excellence, the organisation must respond to the constantly changing business demands. Organisations within the water utility sector in South Africa are furthermore faced with many challenges such as water scarcity, legislation, increasing energy costs, Blue Drop certification, deteriorating raw water conditions, poverty, non-revenue water and the threat of acid mine drainage. These challenges compel an organisation to seek better ways to manage the business and that include finding ways to ensure that every employee performs at his/her best to realise the company's vision and to stay relevant. An organisation makes use of effective performance management systems to plan, measure and control the employees' performance, so that decisions, resources and activities can be better aligned with business strategies to achieve desired results.

Organisations are driven to implement superior practices that will enhance performance with the vision to be customer-focused, to reduce cost, to achieve operational excellence and to achieve and sustain a competitive advantage (Hough *et al.*, 2011:06). Some of these practices include:

- Customer relationship management: customer relationship management is oriented towards increasing customer satisfaction and retention. Adding value to the customer is a key ingredient for customer satisfaction and sales.
- Inventory management and lean systems: lean systems are operational practices geared towards reducing cost, thus improving financial performance.
- Internal business processes: improving internal business processes improves operational performance.
- Asset management: practices in asset management improve operational and financial performance.

The above-mentioned practices enable the organisation to achieve and sustain a competitive advantage in the market place. According to Bento and Bento (2006), huge amounts of

resources are being invested in performance management systems and this is an indication of the importance of performance management.

2.2 Definitions and terminology

- **Determinant:** as per the Business Dictionary (2016), a determinant is a factor or an element that limits or defines a decision or condition. Regarding performance management, a determinant is a factor that hinders or influences performance management at an organisation.
- **Performance:** performance is about doing work and attaining results (Mbhanyele, 2015; Robbins & Coulter, 2003; Van der Waladt, 2004). Producing results is what counts at the end of the day for any organisation. Employees need to produce agreed results for the employer for which they will get paid and rewarded. Kay and Bantfield (2008) define performance as a relationship between an individual's capabilities and what he or she actually achieves. For an employee to perform, the task must not only be completed but the employee must complete the task within a certain time-frame, the standard of the work must comply with a pre-set standard and the cost of conducting the task must be within the pre-set standard.
- **Performance Appraisal:** Performance appraisal can be defined as the formal assessment and rating of individuals by their supervisors at a performance review meeting (Armstrong, 2006:9).
- **Performance assessment:** Johnson *et al.* (2009:2) define performance assessment as a system comprising of the purpose of the assessment, the tasks that elicit the performance and the systematic way of rating the performance.
- **Performance management:** according to Phillips and Gully (2014:10), performance management involves aligning employee goals to organisational goals, the assessment of employee performance and practices to improve performance.

2.3 The evolution of performance management

Performance management has evolved during many phases. The first phase dates back to the early 1960s with the practice of performance appraisals and service records containing substantial information about employee performance (MSG, 2014). Controlling the

behaviour of employees was the main purpose of these employee service records. Performance appraisal occurred on an annual basis and the system was low in transparency. Poor appraisals meant low opportunity for career advancements (MSG, 2014). The system was assessing employee performance but not developing employee capabilities. The performance of an employee was evaluated according to job knowledge, sincerity, dynamism, punctuality, leadership and loyalty. There was no feedback to the employee about his or her appraisal.

The period of the second phase was from the late 1960s to the early 1970s. The no feedback drawback of phase one was rectified in this phase. Another milestone of this phase was that of informing the appraisee, who was the employee, of his or her areas of improvement when performance levels dropped below 33% (MSG, 2014). The focus changed to that of informing the appraisee of his or her sub-performance and also taking corrective action to improve these deficiencies.

The third phase saw the involvement of employees in the appraisal process. Employees were permitted to describe their accomplishments in their performance report. However, the system still maintained a controlled oriented approach (MSG, 2014).

The fourth phase started in the mid-1970s. According to MSG (2014), this phase was development orientated, target based and employees were more involved in the process. The process was open and not as confidential as the previous phases. The performance management system followed a methodical approach, focusing on performance planning, the assessment and development of an employee (MSG, 2014).

The fifth phase focused on how to handle people issues, developing employee capabilities and improving employee performance by giving importance to culture building, team appraisals and quality circles (MSG, 2014). Performance management had thus evolved from a confidential, controlled orientated process to an open, participative, employee development process.

2.4 Performance management

Performance management is a process that aligns the organisation's objectives and goals to its resources (Jain, 2014). The strategic goals of the organisation must be well-defined and articulated across the entire organisation.

Employee performance management is a "continuous process of identifying, measuring and developing the performance of individuals and teams and aligning employee performance with the strategic goals of the organisation" (Aguinis & Pierce, 2008:139). Performance management through the identification of key performance areas and indicators aligned with organisational strategic objectives will ensure that all individual and team efforts are directed to achieve the organisational goals. It is vital to identify the components that will be measured. The tasks that employees execute should lead to outcomes that further the achievement of organisational goals.

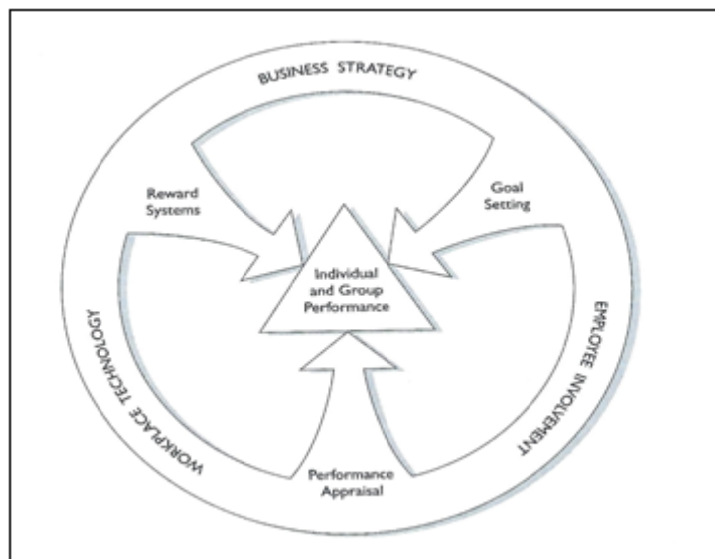
An employee performance management approach involves aligning human resources management (HRM) practices in such a way that they maximise current as well as future employee performance, which in turn is expected to affect organisational employee performance (Decramer *et al.*, 2013:353; Den Hartog, 2004:558). Human resource management practices include performance management processes, talent development, employee involvement practices, employee recruitment and diversity management. The performance management process should be orientated towards the development of employee talent and fostering employee involvement. The recruitment process must be aligned to the performance management process. Employee competencies that are being measured for performance management should be the same as those used in the recruitment process. Selection criteria should be based on employee skills, knowledge and capabilities that facilitate the executing of strategic goals.

Cummings and Worley (2011:421) state that performance management involves goal setting, performance appraisal and reward systems that align the behaviour of employees with the strategy, employee involvement and business technology.

The performance of an individual depends on their ability and motivation. The development of an individual's capabilities is important for improving the performance of the individual. The effective use of the reward system promotes employee motivation. To be effective,

performance management should be orientated towards employee development and employee motivation.

Figure 2.1: A performance management model



(Source: Cummings & Worley, 2011:421)

In Figure 2.1, the interrelatedness of the different performance management aspects, namely goal setting, performance appraisal and reward systems are depicted. Goal setting is the step in the process where the type or level of performance that is required from an individual or a team is specified. The performance appraisal measures step represents the outcomes of individual or group performance and the reward systems part represents the reinforcement of desired behaviours and outcomes (performance). Cummings and Worley (2011) indicate that excellent levels of performance have a tendency to transpire when goal setting, performance appraisal and reward systems are aligned with the business strategy, business technology and employee involvement. The business strategy defines the goals and objectives of the organisation. Performance management translates the business strategy and goals into individual and team goals to focus and steer employee behaviour on the path of achieving business goals and objectives. Proper goal setting, the fair appraisal of performance and effective use of the reward system are likely to ensure that employees work and behave in a manner that will foster the achievement of organisational goals and objectives. Cummings and Worley (2011) also indicate that business technology dictates whether performance management practices should be focused on the individual or the group and the level of employee involvement should determine the nature of performance management practices.

When employee involvement is low, the goal setting practice of performance management should encourage employee involvement. Employees should be involved in the development of their goals. Performance management practices should be aimed at individual work performance and behaviour when the dependences on technology are low and the work is designed for individual tasks. When the dependences on technology are high and the work is designed for groups, performance management practices should be aimed at group performance and behaviours.

Pulakos (2004:1) lists the following as possible outcomes of effective performance management:

- Job responsibilities and expectations are clarified. The goal setting practice will indicate what is expected from the employees with regard to performance and expected achievements. The reward system will clarify what benefits the employee will enjoy with certain levels of performance.
- Individual and group productivity are enhanced. Goal setting clarifies the goals and levels of performance expected from an individual or group.
- Employee capabilities are developed to their fullest extent through effective feedback and coaching. A performance assessment can indicate where an employee's skills and knowledge need improvement. Offering effective feedback is a motivation for improvement.
- Employee behaviour is driven to align with the organisation's goals and strategy. Proper goal setting, the fair appraisal of performance and effective use of the reward system is likely to ensure that employees behave in a manner that will foster the achievement of organisational goals and objectives.
- Providing a basis for making human resources decisions (e.g. pay). Employees that perform excellently should be encouraged to repeat these excellent performances. The reward and recognition practice should reinforce this behaviour. Organisations can base their employees' annual remuneration increase on the level of performance achieved by their employees.
- Improved communication between employees and managers. Performance feedback requires two-way communication between the manager and the employee.

The performance of an individual depends on his or her ability and motivation. The development of an individual's capabilities is important for improving the performance of the individual. The effective use of the reward system promotes employee motivation. To be effective, performance management should be orientated towards employee development and employee motivation.

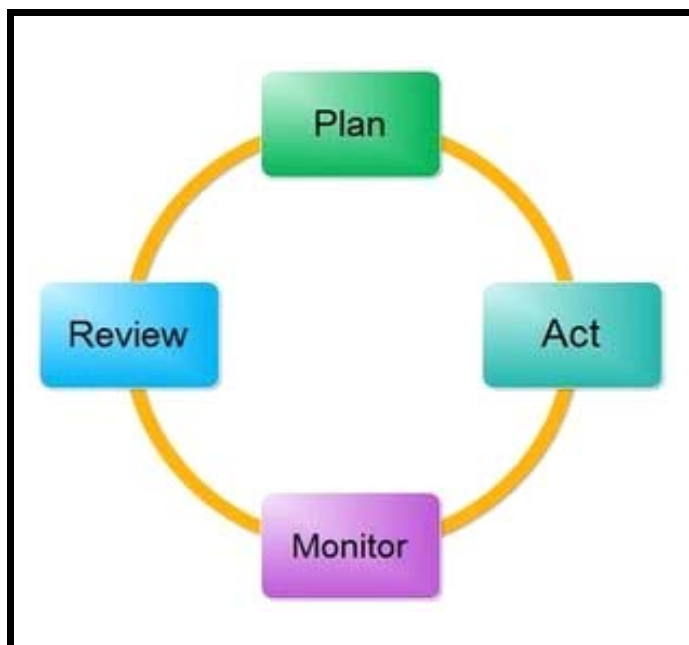
Developing, motivating and rewarding employees to perform at their optimal levels, aligning individual tasks and goals to organisational goals, clarifying employee responsibility and expectations, improving individual performance are the aims of performance management.

2.5 Performance management cycle and activities

Performance management is a process of management. It is a series of actions performed by management, ensuring that the organisation's goals are achieved.

Armstrong (2006:12) indicates that performance management should be viewed as a flexible process and not as a system. When viewed as a system, performance management is seen as a rigid bureaucratic approach.

Figure 2.2: Performance management cycle



(Source: Armstrong & Baron, 2006)

Figure 2.2 depicts the Plan-Act-Monitor-Review Model. The performance management cycles according to authors Armstrong and Baron (2006) are as follows:

- Plan: agreeing on objectives and competence requirements; identifying the culture required by the organisation; performance agreements drafted and complied; crafting personal development plans to enhance employee knowledge and skills.
- Act: performing tasks to achieve the objectives developed in the planning cycle
- Monitor: monitoring the progress in achieving the objectives and responding to the changing business demands. Performance is managed on a continuous basis rather than on an annual basis.
- Review: evaluate the effectiveness of individual actions and results (performance) against set and agreed objectives/goals in order to adjust in time where necessary.

The activities of performance management include role definition, the performance agreement, the performance improvement plan, the personal development plan, managing performance, and performance reviewing (Armstrong, 2006:18). Agreeing on results areas and skills requirements occurs during role definition. The performance agreement defines the goals and objectives needed to be achieved by the employee and how performance will be measured. A performance improvement plan is developed in the event of poor performance to point towards what employees should do to improve their performance. The personal development plan indicates what employees should do to develop their capabilities. Managing performance relates to actions to implement the performance plans (performance agreement, performance improvement plan and personal development plan), conducting performance assessments, providing feedback on performance and rewarding good performance.

2.6 Performance management practices

Performance management typically includes the practice of performance planning, performance appraisal, performance reviews, rewarding employees, performance feedback and the development of employees (Armstrong & Baron, 2005; Pulakos, 2004; Dewettincka & Dijk, 2013). Performance standards and goals are set. Performance is then measured and evaluated based on the set standards. Feedback is given to the employee to notify him or her about his or her performance. Rewarding good performance is a practice to reinforce desired performance.

2.6.1 Performance planning

The performance management process starts with performance planning. Performance planning involves the setting of goals and standards. According to Locke and Latham (2013:4), the term goal is defined as an object or aim of an action or the level of performance to be achieved. Standards are what levels or results are acceptable. Pulakos (2004), states that it is important for managers to discuss performance expectations with their employees. Phillips and Gully (2014:256) is of the opinion that the setting of goals is the foundation for employee and organisational success and that these goals should be measurable, understandable and results orientated. Employee goals are derived from organisational goals. Managers can adopt the SMART technique when setting goals. **Specific** implies that the goal must be clear and understandable. **Measurable** goals are quantifiable measurements to measure progress and to determine whether the goal has been achieved. **Achievable** implies that the goal is achievable. **Relevant** implies that the goal must be important to the strategy of the organisation. **Time bound** implies that the goal must be achieved in a certain time-period.

2.6.1.1 Management by objectives

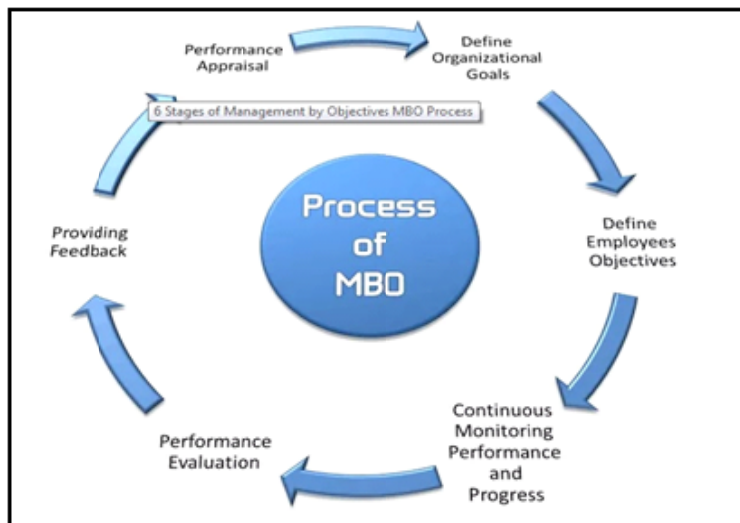
Management by objectives is one common approach used by organisations for goal setting. Thompson (1998) states that management by objectives is an approach requiring management to set specific objectives to be achieved and repeatedly asking what more can be done to increase performance.

The six steps of the management by objectives process according to EduNote (2016), as depicted in Figure 2.3, are:

- Define organisational goals: for organisations to be effective, goals need to be clearly defined and managed. Goals are set according to what the organisation can do and should do.
- Define employee objectives: objectives are set in accordance to what goals the employee can achieve.
- Continuous monitoring performance and progress: requires comparing performance with pre-established objectives, installing effective controls and designing structures with clear responsibilities and decision-making authority at the appropriate level.

- Performance evaluation: reviews conducted by the manager and employee concerned.
- Providing feedback: continuous feedback on performance and goals that allow employees to monitor and correct their own actions.
- Performance appraisal: a regular review of employee performance within organisations. This is the last stage of the management by objectives process.

Figure 2.3: Management by objectives process



(Source: EduNote, 2016)

Goal setting increases job performance (Locke & Latham, 2013). Goal setting is an effective way of steering employees in the right direction. Employees should be involved in the setting of their goals. Allowing goals to be agreed upon promotes the alignment of employee goals with organisational goals. Collaboration promotes motivation, employee involvement and improved performance. One way of setting goals is by using the management by objectives process.

2.6.2 Performance appraisal

Performance appraisal entails evaluating an employee or group performance by their higher supervisor and reporting that evaluation back to the employee or group. Cummings and

Worley (2011:428) argue that performance appraisal systems represent an important link between goal setting processes and a reward system. In performance assessments, the assessor applies his or her skills and knowledge by engaging in a process or constructing a product (Johnson *et al.*, 2009:2). Performance appraisal is commonly known as the annual performance review.

Table 2.1: Performance appraisal elements

Performance Appraisal elements		
Elements	Traditional Approaches	High involvement Approaches
purpose	Organizational legal Fragmented	Development Integrative
Appraiser	Supervisor managers	Appraisee, co workers and others
Role of appraisee	Passive recipient	Active participant
Measurement	Subjective Concerned with validity	Objective and subjective
Timing	Periodic, fixed, administratively driven	Dynamic, timely, employee or work driven

(Source: Cummings & Worley, 2011:429)

Table 2.1 illustrates the elements of a performance appraisal system and differentiates between the traditional approaches and high-involvement approaches. The traditional approach advocates that the performance appraisal occurs on a periodical basis, usually yearly, initiated by management for an organisation's legal requirement where the appraisee is usually passive. The high-involvement approach advocates that performance appraisals occur randomly, usually initiated by the employee or business driven where the appraiser and appraisee are both active participants in the process. The process is done for the development of the organisation and employees while seeking to improve performance.

Performance appraisal is important as this practice aims to correct sub-performances so that corrective actions can be taken as early as possible. Skills deficiency can be identified and fixed by skills development programs.

Wolfe (2011) lists the following steps to create effective performance appraisals:

- Clearly identify your objectives. Managers can adopt the SMART technique when defining objectives. **S**pecific implies that the objective must be clear, unambiguous and describe what is expected. **M**easurable objectives give quantifiable measurements to measure progress and determine whether the objective has been achieved. **A**ttainable implies that the objective must be achievable. **R**elevant implies that the objective must be important to the strategy of the organisation. **T**ime bound implies that the objective must state a time-frame in which the objective must be achieved.
- Employees should complete a self-assessment form. A self-assessment form provides a structured way of eliciting information from an employee relating to his or her work and performance of that work. The self-assessment form should allow for the employee to indicate his or her level of achievement for each goal and areas of improvement. The form should not be viewed as the employee rating him- or herself which will be considered as an unfair rating. Annexure B is an employee self-assessment form template.
- Redefine the purpose, duties and responsibilities of the job. As the business environment and strategy change continuously, the purpose, duties and responsibilities of the job also need to change. Managers need to update the job descriptions in consultation with employees.
- Define the priority of and set objectives for each responsibility. Employees should know which objectives are more important than others. This will aid them in deciding on how to focus on the various objectives.
- Performance standards must be established. Employees should know what levels of performance are expected of them. Performance standards must be an absolute measure of performance. Employees should be informed about any changes to the performance standards. This should not be done during the appraisal time.
- Be specific when addressing areas requiring improvement.
- When addressing examples of unacceptable conduct, be specific.
- Set ongoing goals.
- Provide the opportunity for feedback. Arrange a performance interview meeting at a specific location for discussions regarding the performance appraisal. Allow enough time for the employee to prepare for the meeting. Always give the employee the chance to speak freely as the performance appraisal process should be a two-way dialogue.

- Solicit as much feedback as possible from the employee. Managers and supervisors need to inform employees as to why feedback is needed.
- Present, discuss and agree on a “performance improvement plan”.
- Before closing the meeting, ask if there is anything else the employee wants to discuss.

Plowman (2017) lists excessive criticism, use of negative words, threatening the use of disciplinary action for poor performance, focusing on the individual’s character rather than his work performance and providing unsupported feedback as pitfalls that need to be avoided during the performance appraisal process. With regard to poor performance, it is advisable to discuss and agree on a “performance improvement plan” rather than to threaten to institute disciplinary action against the employee. Performance appraisal should be concerned and focused on the employee’s work performance and not his character. Feedback must be supported by examples as to justify the feedback. Providing feedback on the person’s character or providing unsupported feedback would create an opportunity for employees to question the fairness of the performance appraisal process.

2.6.3 *Reward system*

Organisations reward employees with the incentive of improving employee performance and creating employee satisfaction (Cummings & Worley, 2011). Creating high levels of employee satisfaction is one way of ensuring the retention of good performers. When staff turnover is low, the organisation does not have to worry about training new employees to reach performance levels of experienced staff. Hope and Player (2012:351) indicate that rewards are in place to attract, keep and motivate people. Rewarding employees for performance will motivate employees to perform. Rewarding employees for skills and knowledge will motivate employees to acquire more skills and knowledge.

Reward systems that are transparent, skill based and allow for options tend to contribute towards employee involvement (Cummings & Worley, 2011). Information pertaining to the reward system must be openly available to all employees. The reward system should reward performance and change. Rewards should be based on employee skills or the acquiring of new skills. The reward system should be applicable to all employees. Providing the option for

employees to choose between different rewards enhances employee participation. Reward systems are concerned with motivating and reinforcing desired behaviours and performance outcomes. According to Vroom's expectancy theory (as cited by Latham, 2012:48), people are motivated to behave in ways that they perceive will result in valued rewards.

Various approaches are available for organisations to reward their employees. According to Lawler and Worley (2006), organisations cannot reward stability if they want their employees to change. Basing rewards on seniority is a counter-productive practice. Organisations aiming to elicit employee loyalty generally base rewards on seniority. Lawler and Worley (2006) also argue that merit-pay systems, although popular, are not effective. They conclude that, for merit-pay systems to be effective, the performance of an individual needs to be stable for a couple of years and that this does not usually happen. These fluctuating performances can result in situations where poor performers end up with high salaries, while good performers end up with low salaries. Lawler and Worley (2006) advocate that rewards, like bonuses, stock options and person-based pay when designed properly lead to organisational effectiveness. Bonuses are monetary rewards remunerated to employees as a result of the achievement of the organisation's objectives. Bonuses are paid in recognition of the employee's role in this achievement and a motivation to repeat this performance. Stock options are rewards that also motivate employees to perform, as these employees have an invested interest in the organisation and its success.

Table 2.2: Reward system design features

Reward System Design Features	
DESIGN FEATURE	DEFINITION
Pers on/Job based vs Performance based	The extent to which rewards and incentives are based on the person in a job, the job itself, or the outcomes of the work
Market position (External Equity)	The relations hip between what an organisation pays and what other organisations pay
Internal Equity	The extent to which people doing similiar work in an organisation are rewarded the same
Hierarchy	The extent to which people in higher positions get more and varied types of rewards than people lower in the organisation
Centralisation	The extent to which reward system design features , decis ions, and administration are standardised across the organisation
Reward Mix	The extent to which different types of rewards are available and offered to people
Security	The extent to which work is guaranteed.
Seniority	The extent to which rewards are based on length of service

(Source: Cummings & Worley, 2011)

Table 2.2 depicts the elements of the reward system. A person-based pay system allows for the allocation of rewards on the basis of the employee's skills and knowledge. The counter path to this system is basing the reward on the job. In a job-based pay system, job descriptions are created and the reward is based on the assessed value of the job performance. According to Cummings and Worley (2011), the dependencies amongst work tasks are an important reward system contingency to take into consideration. When the performance of one task depends on the execution or the performance of another task, the system reward should be geared towards team-based recognition. When the performance of one task is independent of other tasks, the basis of the reward should be focused on the individual. The external equity features can contribute towards employee satisfaction and loyalty if employees believe that they are being paid similar amounts as those in their business sector.

System basing rewards according to seniority can lead junior employees, doing similar work as their senior counter parts, to view the system as being unfair. Reward systems often differentiate the level of reward based on the employee's job position. Those in higher positions, especially senior managers, get more than those in lower positions. Reward systems offering different types of rewards tend to enhance employee satisfaction. Offering job security enables an organisation to create employee satisfaction and loyalty. Performance-based systems are designed to link rewards to performance.

Cummings and Worley (2011) list the five factors for reward systems to motivate required behaviour from an employee as:

- Availability: the reward must be readily available.
- Timeliness: the reward should be awarded in a timely manner. Employee satisfaction has a tendency to decrease if organisations tend to delay the awarding of the reward.
- Performance contingency: it is important to link the reward to performance. Rewarding non-performance is likely to reinforce a culture of non-performance. Employees should not believe that they are entitled to rewards like bonuses.
- Durability: intrinsic rewards tend to last longer than extrinsic rewards. Bonuses are extrinsic rewards that can be spent within a few days of receiving the reward.
- Visibility: the awarding process should be visible to employees. Making awards visible ensures employees that rewards are available and attainable.

2.6.4 Successful implementation of the system

Having effective tools and processes does not necessarily guarantee that the performance management system will be effective. What really matters is how effectively the system is being utilised and if the end users of the system value the system. According to Pulakos (2004), the cornerstones for successful implementation of a performance management system are:

- The performance management system must be aligned with other human resources management systems. Employee competencies that are being measured for performance management should be the same as those used in the recruitment process.
- Getting organisational members on board. The organisational members must be motivated to use the system. The greater the commitment to the system, the greater the potential success of the system. Involving relevant stakeholders in the design and implementation of the system will ensure commitment to the system.
- Communication. Communication should begin at the start of the performance management process. The communication process must clearly explain the advantages or importance of the system and why the system is being implemented.
- Automation of workflow. Performance management systems require a considerable amount of paperwork and documentation. Automation can greatly facilitate the performance management workflow and substantially reduce the paperwork associated with this process.
- Pilot test. Another important factor in ensuring a successful implementation is to pilot test the new process in a couple of units prior to large-scale implementation. A pilot test is a small-scale study conducted in order to evaluate the user friendliness of the proposed system. Pilot testing will show if the system functions smoothly and efficiently.
- Training of employees. Training of employees is important for employees to be competent and motivated to use the system effectively.

The successful implementation of the performance management system is very crucial for the effectiveness of the system. Systems are created for users and it is important that users are trained to use the system. Employees should be informed about the objectives of the

system and relevant stakeholders must be involved in the planning, designing and implementation of the system.

2.7 Employee involvement and performance management

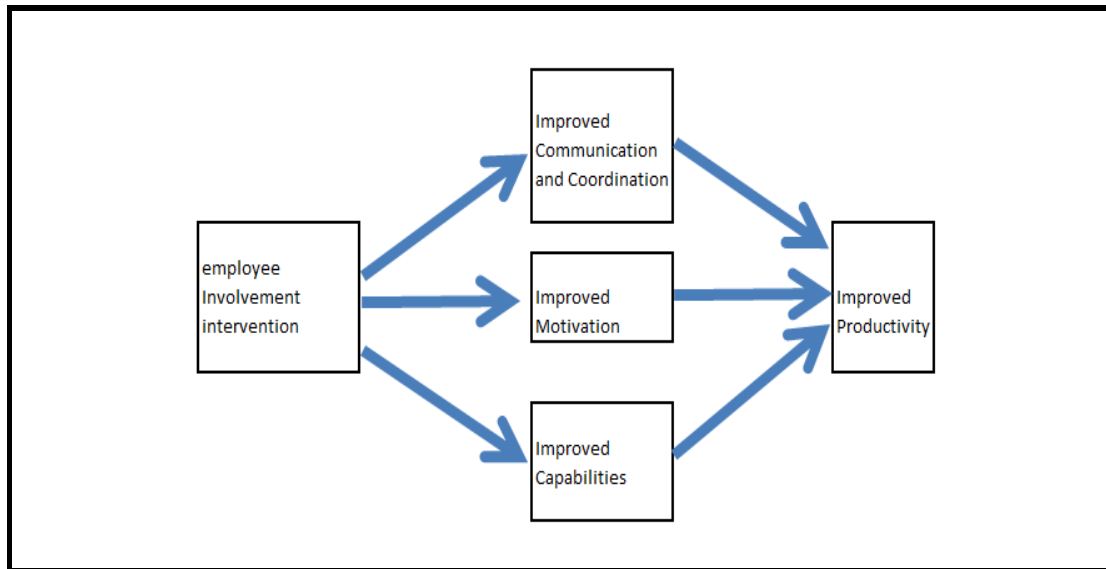
Employee involvement is a key factor in performance management and organisational success. According to Cummings and Worley (2011:350), "Faced with competitive demand for lower costs, higher performance, and greater flexibility, organisations are increasingly turning to employee involvement (EI) to enhance the participation, commitment, and productivity of their members". Employee involvement is the participation of workers by contributing their ideas and recommendations to aid the organisation to achieve its mission and objectives. Employee involvement can be defined as increasing employee contribution in respect to organisations' performance and employee well-being (Cummings & Worley, 2011:350). Employees should be active participants in the entire process of performance management.

The four key elements of employee involvement, according to Cummings and Worley (2011), consist of:

- **Power:** providing employees with the authority to formulate job-related decisions regarding working methods, performance outcomes and customer service. During the performance planning stage, the setting of goals should be a collaborative effort between employee and manager.
- **Information:** Timely access to relevant information is vital to the decision-making process. Relevant and essential information should flow freely to employees with decision-making authority.
- **Knowledge and skills:** Employees need to have the knowledge and skills to make good decisions. Training and development programs to improve knowledge and skills must be available for employees. Performance management should focus on developing employee capabilities to improve performance.
- **Rewards:** Rewards can have a powerful effect on getting employees involved in the organisation. Rewards can be in the form of certificates of achievement, promotions and financial payments. The practice of rewarding is aimed at reinforcing desired or repeated behaviour.

According to Cummings and Worley (2011:358), “studies signify there is a consistent positive relationship between employee involvement practices and productivity and indicate that there is a consistent relationship between employee involvement practices and measures such as financial performance, customer satisfaction, labour hours and waste rates”.

Figure 2.4: How employee involvement affects productivity



(Source: Cummings & Worley, 2011:353)

Figure 2.4 depicts the impact of employee involvement on productivity. Participating in work related decisions results in improved communication and coordination amongst employees and departments. This, in turn, results in improved productivity. Employee involvement can result in employee motivation if the employee's needs are satisfied. Employee motivation results in improved productivity provided the employee has the skills and capabilities to execute the job. Improved productivity results in better organisational performance and employee satisfaction.

Employee involvement improves performance and is thus an important effective performance management determinant. Improving the capabilities of employees also improves the productivity of employees (Cummings & Worley, 2011:352).

Figure 2.5: Secondary effects on productivity



(Source: Cummings & Worley, 2011:353)

The secondary effects of employee involvement as per Figure 2.5 are:

- Increased employee well-being and satisfaction. This translates into better attraction and retention of employees. Staff turnover is low. By retaining employees, time is not wasted in recruiting and training new employees. Attracting skilled employees and retaining good employees improve productivity.
- Improved productivity can also increase employee satisfaction.

It is evident from the discussed literature that employee involvement results in improved communication and coordination amongst employees and departments, improved motivation, improved capabilities of employees, employee well-being, employee satisfaction and improved productivity.

2.8 Why the interest in performance management

According to Cokins (2009:42), the major forces that have caused interest in performance management are:

- Failure to execute strategy: the reason for this failure is that most managers and employees cannot explain the strategy.
- Unfulfilled return on investment (ROI): few organisations believe that they have actually realised their expected return on investment promised by their systems vendors.

- The escalation in accountability for results with consequences: the trends are for managers to communicate the strategy to their employees.
- The need for a quick trade-off decision analysis: organisations need to make quick decisions in response to the changing business and employees need to understand the strategy of the organisation.
- Mistrust of the managerial accounting system: managers and employees are aware of certain accounting practices like “cost allocation” using non-casual factors like labour hours to allocate expenses are flawed and misleading.
- Poor customer management: organisations and employees realise that, to grow the organisation, they need to satisfy the customers.

Having a good strategy is important, however executing the strategy is more important. Organisations turn to performance management with the aim of ensuring the strategy is executed. Articulation of the strategy across the entire organisation is very important in ensuring that employees understand the strategy. Performance management includes sales and marketing analysis of the different market segments to better understand the sales and marketing areas to focus on for maximum financial benefit.

2.9 Principles of performance management

The authors Armstrong and Baron (2006) indicate the principles of performance management as follows:

- It translates organisational goals into individual, team and departmental goals.
- It aids in clarify organisational goals.
- It is a non-stop process resulting in improved performance over time.
- It relies on commitment and collaboration rather than control or coercion.
- It creates a collective understanding of what is required to improve performance and how to achieve improved performance.
- It promotes the self-management of individual performance.
- It requires a management style that is open and honest and facilitates two-way communication between supervisors and subordinates.
- It requires continuous feedback.

- It measures and compares all performance against agreed goals.
- It should apply to all employees.
- It is not primarily concerned with linking performance to financial reward.

It is important that the goals of individuals support strategic goals and that the strategic goals are well-articulated across the entire organisation. The performance management process should be a continuous process irrespective of performance levels. The process should not be stopped on the achievement of desired performance. Employees should be motivated to use the process, they should not be forced. The planning of employee objectives should be a collaborative effort of both employee and manager. Both appraiser and appraisee should have a clear understanding of the areas of improvement and how this improvement should transpire. Employees should be participative in the process and manage their own performance. The performance management process should be transparent. Feedback is essential, especially for performance improvement and employee development. Communicating performance discrepancies is the first step in improving these discrepancies. Employees know their areas of improvement. They should be evaluated or assessed on agreed goals. Evaluation should not be based on criteria's, or modified goals unknown to the appraisee. The scope of the process should include all employees. The process should be focused on improving performance and developing employee capabilities in search of organisational effectiveness. Following these principles promotes employee perception of fairness of the performance management system, increases employee involvement in the process, promotes employee development and improves individual, team and organisational performance.

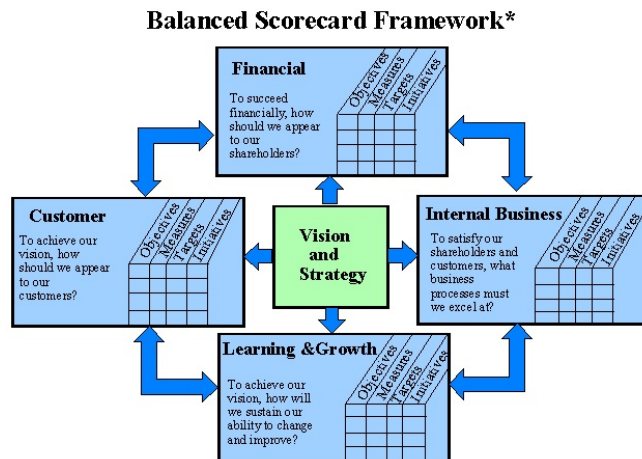
2.10 Performance management models

There are different types of performance management models, such as the balanced scorecard, EFQM excellence model, SERVQUAL model and total quality management model. For the purpose of this study, attention will only be paid to the balanced scorecard. According to Armstrong (2006:6), performance management is concerned with satisfying the needs of stakeholders. The perspectives of the balanced scorecard include all the stakeholders (customers, shareholders and employees) of the organisation.

2.10.1 *Balanced scorecard*

The balanced scorecard was developed in 1990 by Robert Kaplan and David Norton. It is a scorecard that has a balance between financial and non-financial performance.

Figure 2.6: Balanced scorecard framework



(Source: Kaplan & Norton, 1996)

Figure 2.6 is Kaplan's and Norton's balanced scorecard framework illustrating the four different perspectives.

The four perspectives of the balanced scorecard are:

- Customer perspective: These measurements are related to customer satisfaction. For a company to achieve its vision, how should it be viewed by its customers?
- Financial perspective: These measurements are related to financial performance like business sustainability and profitability. For a company to succeed financially, how should it appear to its shareholders?
- Internal business perspective: These measurements take into consideration operational performance measurements. For a company to satisfy its shareholders and customers, what internal business processes must they excel at?
- Learning and development: These measurements are related to employees and the development of employees. For a company to achieve its vision, how does it change and develop?

According to Kaplan and Norton (1996), the balanced scorecard is a set of financial and operational measures that gives management a holistic view of the business performance relating to the customer's satisfaction, internal business process and their development activities.

Bowen (2011) lists the following as advantages of the balanced scorecard:

- By looking at four aspects of a company's performance, a balanced view of company performance is obtained.
- Allows for stakeholders to determine the health of short-, medium-, and long-term objectives at a glance.
- A company can be sure that its strategic actions implemented match the desired outcomes. The balanced scorecard serves to communicate the strategy to the employee.

The balanced scorecard translates an organisation's strategy into a set of measurements providing the framework for those measurements (Trang, 2015).

Bowen (2011) also states the following as disadvantages of the balanced scorecard:

- The balanced scorecard takes forethought; it is a lengthy process identifying all the objectives.
- The four areas do not paint the whole picture. The financial information is limited.
- Many companies use metrics that are not applicable to their own situation.

2.11 Chapter summary

Individual performance management is the practice of setting goals and expectations for employees, periodically monitoring and rating the performance of employees and rewarding the employees according to their performance. The employee performance management practices should be aligned to the business strategy. Performance management should be viewed as a flexible and dynamic process and not merely as a system.

The performance of an individual depends on their ability and motivation. The development of an individual's capabilities is important for improving the performance of the individual. The effective use of the reward system promotes employee motivation. To be effective, performance management should be orientated towards employee development and employee motivation.

The benefits of effective performance management are that job responsibilities and expectations are clarified, individual and group productivity are enhanced, employee capabilities are developed to their fullest extent through effective feedback and coaching and employee behaviour is driven to be aligned with the organisation's strategy. Effective performance management also provides a basis for making business decisions and improving the communication between employees and managers.

Failure to execute strategy, unfulfilled return on investment (ROI), escalation in accountability for results with consequences, the need for a quick trade-off decision analysis, mistrust of the managerial accounting system and poor customer management are the driving forces for the interest in performance management. Performance management practices should aspire to translate organisational goals into individual, team and departmental goals, clarify organisational goals, be a non-stop process resulting in improved performance over time, concentrate on commitment and collaboration rather than control or coercion, create a collective understanding of what is required to improve performance and how to achieve improved performance, promote the self-management of individual performance and promote continuous feedback. The practice should also measure and compare all performances against agreed goals and apply them to all employees.

Employee involvement, proper design of the reward system, performance appraisal and the successful implementation of the system are some key factors for effective performance management. To enhance the participation, commitment and productivity of their members, organisations are increasingly turning to employee involvement (EI). The driving force behind this is that these organisations are faced with the competitive demand for lower costs, higher performance and greater flexibility. Employee involvement is the participation of employees by contributing their ideas and recommendations to aid the organisation to achieve its mission and objectives. Performance appraisal is a performance management practice whereby managers evaluate an employee or group performance and report back that evaluation to the employee or group. Conducting a pilot study, aligning the performance management system to other business systems, getting organisational members on board,

facilitating proper communication, automating the workflow and training the employees to use the system are key ingredients for the successful implementation of the performance management system. Ensuring that rewards are available, durable, visible and linked to performance, are factors that ensure that the employees behave in a required manner expected from the organisation.

Although there are various performance management models applicable in organisations, the balanced scorecard was chosen as the performance management model for this study. The balanced scorecard is effective in translating the organisation's strategy into a set of measurements, taking into consideration the customer, the internal business process, the financial perspective and the learning and development perspective.

CHAPTER 3: OVERVIEW OF THE WATER SECTOR IN SOUTH AFRICA

According to Midvaal Water (2013), South Africa is classified as a semi-arid, water-stressed country with a below-average global rainfall of a mere 450mm of which more than 40% precipitate on only 13% of the land. Combined with limited river systems and rapid population and urbanisation growth, water utility companies were established to manage water supply and water-related services to all the communities in South Africa.

3.1 Water institutions

Water institutions consist mainly of water boards and water services authority (WSA).

3.1.1 Water Boards

A Water Board is classified as a Government-owned entity that operates and maintains the water resources infrastructure in South Africa. Section 34(1) of the Water Services Act, 1997 (Act No. Act 108 of 1997) states that a Water Board must be setup as a financially independent institution. There are nine Water Boards in South Africa that supply water throughout the nine provinces. According to the Water Services Act, 1997 (Act No. Act 108 of 1997), the primary activity of a water board is to provide water services to other water services institutions within its service area.

The nine Water Boards are:

- Amatola Water: A water services utility operating in the Eastern Cape. Amatola Water operates eleven water purification plants and seven bulk distribution networks in its designated area of supply. Water abstraction, water purification and bulk water supply are services contracted to the municipalities (Amatola Water, 2016).
- Bloem Water: Established as a Water Board in 1991 to provide water services to the Southern and central areas of the Free State (Bloem Water, 2016).
- Lepelle Northern Water: Established in terms of section 29 of the Water Services Act, (Act 108 of 1997). Lepelle Northern Water currently operates 20 water treatment schemes and 5 waste water works spread across the province of Limpopo (Lepelle Northern Water, 2013).

- Magalies Water: Established in 1969 in terms of section 29 of the Water Services Act, (Act 108 of 1997) supplying water in the Rustenburg and Thabazimbi areas of the North West province (Magalies Water, 2015).
- Mhlathuze Water: Situated in KwaZulu- Natal, Mhlathuze Water's area of supply covers some 37 000km². Mhlathuze Water operates an inter-basin transfer scheme, a major water treatment plant and an offshore wastewater disposal pipeline (Mhlathuze Water, 2016).
- Overberg Water: Established in terms of the Water Services Act (Act 108 of 1997), with the primary objective of supplying water services to water service institutions and farms in the Overberg region in the Western Cape.
- Rand Water: Officially established in 1903 the Rand Water's distribution network includes over 3 056 kilometres of large diameter pipeline and 58 reservoirs. Its customers include metropolitan municipalities, local municipalities, mines and industries (Rand Water, 2010).
- Sedibeng Water: Established in 1979. Initially, it serviced the Free State Goldfields and parts of the former Western Transvaal. The organisation currently services an operational area spanning across three provinces: the Free State, North West and Northern Cape (Sedibeng Water, 2014).
- Umgeni Water: Established in 1974 to provide water services - water supply and sanitation services to other water services institutions in its service area. The area of supply covers 21 155 square kilometres (Umgeni Water, 2012).

Midvaal Water is not recognised as a Water Board but as a non-profit private company mandated to deliver the same water services as other water utility companies. Midvaal Water is subjected to the same accountability, responsibility and legislation as other Water Boards.

From the above, it is clear that all the water utility companies share the same delivery mandate, namely to supply water and water-related services to all the people in their designated areas of responsibility.

3.1.2 Water Services Authority (WSA)

Water Services Authority is municipalities that have been accorded the responsibility to ensure access to water services and acts as a water service provider. Only 152 out of the 278 municipalities are classified as a Water Services Authority.

3.2 Challenges in the industry

The water utility industry in South Africa faces many challenges. Some of these challenges are:

- Water scarcity
- Legislation
- Increasing energy costs
- Blue Drop certification
- Deteriorating raw water conditions
- Poverty
- Non-revenue water
- Acid mine drainage (AMD)

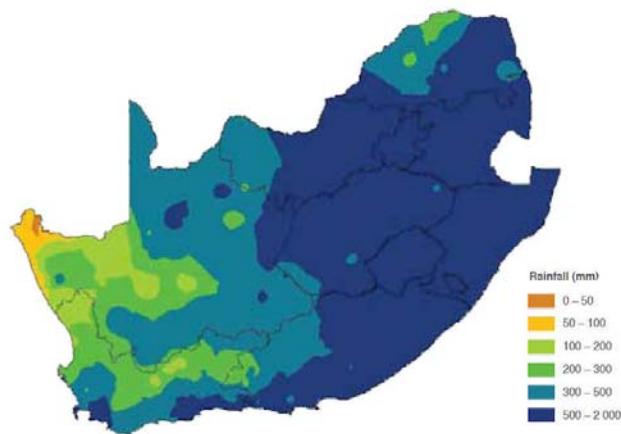
3.2.1 *Water scarcity*

Water scarcity is the limited supply of raw freshwater that all the water utilities are facing. This is a huge challenge as the demand for potable water is ever increasing as a result of economic growth and the Government's drive to ensure that all South Africans have equal access to drinking water. The Department of Water Affairs (2010:3) further states that South Africa is a semi-arid, water stressed country, with an average rainfall of only about 450mm, which is well below the world average of about 860mm per year.

Water availability across the country is faced with three major challenges:

- Relatively low stream flow in rivers most of the time, which limits the proportion of stream flow that can be relied upon for use (Midvaal Water, 2013).
- Uneven spatial distribution and seasonality of rainfall as a result of 43% of the rain falls on 13% of the land
- Location of major urban and industrial developments remote from the country's larger watercourses, which necessitates large-scale transfers of water across catchments (Midvaal Water, 2013).

Figure 3.1: Rainfall map of South Africa

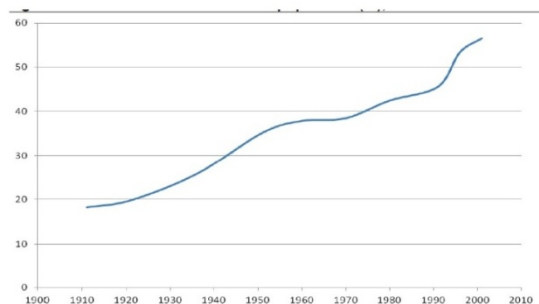


(Source: Global Security, 2012)

According to Midvaal Water (2013), by the year 2025, approximately 3.5 billion people or 50% of the world's population will face water scarcity. The Department of Water Affairs, states that the demand for water will have outstripped the supply in the whole of South Africa by 2025. Urbanisation and population growth are major contributing factors that place extraordinary stress on the water supply systems in South Africa as water stressed country.

Figure 3.2: Urban population trends of South Africa, 1911–2001

Year	Number of urban areas (with over 5000 people)	Total urban population (thousand)	National population (thousand)	Share of urban population (%)
1911	25	1,085	5,973	18.2
1921	36	1,369	6,927	19.8
1936	53	2,476	9,588	25.8
1951	89	4,463	12,671	35.2
1960	120	6,066	15,994	37.9
1970	161	8,986	23,311	38.5
1980	183	12,419	29,208	42.5
1991	244	17,327	38,012	45.6
1996	280	21,674	40,580	53.4
2001	307	25,355	44,819	56.6



(Source: Marcuzzo, 2005)

Figure 3.2 depicts the growing urban share over time and indicates that urbanisation accelerated during the first half of the 20th century and then slowed down until the 1990s. General population growth, combined with industrialisation and urbanisation trends in South Africa while water sources are available, i.e. rivers, rainfall, underground water, etc., remains the same and is expected to place further pressure on the country's sources of water supply. According to Midvaal Water (2013), the main factors that influence future water requirements are:

- Climate change (high temperatures, increased evaporation)
- Nature of economy (irrigated agriculture, industrialisation)
- Standards of living
- Population growth
- Economic growth

The management of water resources prior to 1998 was mainly demand-driven, with emphasis on the development of new water resources (Midvaal Water, 2013). The policy regarding water management changed post-1998. The National Water Act (Act 36 of 1998) is concerned with the efficient and sustainable use of water.

Providing water and water services are however just not enough and the quality of the water and water services delivered is also very important. For that reason, a water quality certification programme was implemented by the Department of Water Affairs and Forestry.

3.2.2 *Deteriorating raw water conditions*

Mining Review Africa (2011) states that "Improperly treated sewage, pesticides and fertilisers entering the water systems through agricultural practices and hazardous chemicals being released into the water systems by mining operations all contribute to the pollution of the country's freshwater systems". The quality of the raw water in South African rivers and dams is deteriorating. Oelofse and Strydom (2010) indicate that industrialisation and urbanisation, as a result of economic growth, will result in further deterioration of water resources. The costs of treating poor quality water are on the increase. This poses a great challenge to water utilities to produce water according to legislation and at optimal cost. Midvaal Water constructed a Dissolved Air Flotation plant at a cost of 25 million rand in 1997 to change its

treatment process to accommodate the deteriorating raw water quality in the Vaal River system.

It is clear from the above that water supply and demand will only become a greater challenge in future. While new technologies, new water sources, or alternative water sources will have to be found and optimised, managing the existing available water and water facilities will be crucial. Successful water management will, therefore, depend to a large extent on water utility companies to perform at their best, aligned to and in support of their mandates and for that to be successful, the performance of every employee of a water utility company needs to be managed and optimised.

3.2.3 Acid mine drainage

Acid mine drainage arises when the mineral pyrite iron disulphide reacts with oxygenated water, producing sulphuric acid, ferrous sulphate and ferric hydroxide and this process is accelerated during mining activities (McCarthy, 2011). Naturally, the acid is neutralised by the calcium and dolomite, but mining activities hinder this neutralising process and huge amounts of acid water are released into the environment, contaminating the groundwater, streams and rivers. Sangita *et al.* (2010) have concluded that acid mine drainage caused by mining activities is currently a harsh environmental pollution dilemma.

Mining activities increase the expose of mineral pyrite to oxygenated water, thus resulting in acid production (McCarthy, 2011). Rocks are removed from underground, crushed for the extraction of gold and the remaining rocks are then dumped at locations called trailing dams. These rocks containing mineral pyrite are exposed to the elements. When rain water falls onto these dams, oxidation occurs when oxygenated water comes into contact with the mineral pyrite at these trailing dams producing sulphuric acid. The sulphuric acid then dissolves the other heavy metals found at these trailing dams resulting in acid water. The mining sector neutralises this acid water before discharging the water into the environment. However, after the closure of mines, this neutralising process does not take place and the acid water eventually ends up polluting the ground and surface water resources.

It is clear that acid mine drainage contributes to the deteriorating raw water conditions in South Africa, resulting in higher treatment costs for water utilities.

3.2.4 Non-revenue water

The Water Research Commission (2012) defines non-revenue water as the quantity of water that is not billed as a result of unbilled consumption and pipe leakages. Unbilled consumption occurs when customers consume water but do not pay for this water consumption. Faulty meters and meter tampering contribute to this problem. Ageing infrastructure contributes towards pipe leakages. The Water Research Commission (2012) has concluded that the level of non-revenue water for the entire country is 36.8% of which 25.4% is a result of pipe leakages.

Water Services Authorities suffer huge revenue losses due to non-revenue water. It is clear that non-revenue water impacts the financial performances of water utilities. Non-revenue water also impacts the municipality's ability to pay their service providers. Performance management systems should focus on non-revenue performance indicators and developing employees in pursuit of decreasing water losses. The Water Research Commission (2012) lists non-revenue water percentage, litres/capital/day and infrastructure leakage index as possible performance indications for the issue of non-revenue water. Litres/capita/day is an indication of the volume of water used per capital in a day. Infrastructure leakage index is used for assessing physical leakages. Percentage non-revenue water is calculated as follows:

$$\text{Non-revenue water \%} = (\text{input volume} - \text{billed volume}) / \text{input volume} * 100 \%$$

Non-revenue water implies lost revenue for Water utilities. Costs were incurred purifying the water yet no revenue was earned by the organisation. Pipe leakages can be minimised by skilled competent employees. Effective performance management of maintenance personnel will help in reducing the volumes of non-revenue water by developing the capabilities of employees to prevent, detect and repair pipe leakages.

3.2.5 Blue Drop certification

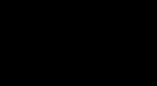
The Department of Water Affairs and Forestry initiated the Blue Drop Certification Programme on 11 September 2008 with the following objectives:

- introducing incentive-based regulation of the drinking water quality management function;

- introducing key requirements for effective and efficient management of drinking water quality by water services institutions;
- initiating transparency on the actual drinking water quality management performance of water services institutions;
- providing information to the public on DWQ performance per water supply system (to prevent generalisation); and
- facilitating closer working relationships between Water Services Authorities and Water Services Providers.

It is a legislative requirement that institutions in the water sector have suitable monitoring programmes in place and this would include compliance monitoring (Department of Water Affairs, 2009). Operational performance is the key to water utilities achieving Blue Drop status.

Figure 3.3: Blue Drop colour codes

5 Key Performance Areas assessed for Blue Drop Certification 2011		
Colour codes		Appropriate action by municipality
	90 - 100%	Excellent situation, need to maintain via continued improvement
	75 - =90%	Good status, improve on gaps identified to shift to "Excellent"
	50 - =75%	Average performance, ample room for improvement
	33 - =50%	Very poor performance, needs attention
	0 - =33%	Critical state, need urgent attention

(Source: Department of Water Affairs, 2012)

Figure 3.3 indicates the actions required by water utilities based on their Blue Drop score. The Municipal Blue Drop Score is a performance indicator of the overall municipal drinking water quality management taking into consideration the quality of the water and the administration of their resources. Maintaining an excellent status is one of the key strategic objectives of Midvaal Water (Midvaal Water, 2013). Failure to maintain this status tarnishes

the organisation's brand and public image and is seen as the failure in operational performance.

3.2.6 Legislation

In adherence to the South African Constitution, stipulating the right of everyone to have sufficient water, various legislations were set up to establish water utility companies to provide in this basic right (Midvaal Water, 2013).

3.2.6.1 Constitutional mandate

Section 27(1)(b) of the Constitution (1996) of the Republic of South Africa stipulates that "everyone has the right to have sufficient water". Water utility companies cannot stop the supply of water to municipalities despite the fact that many municipalities default on payments.

3.2.6.2 National Water Act (Act 36 of 1998)

The aim of the National Water Act (Act 36 of 1998) is to ensure that South Africa's water resources are protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all persons. The Department of Water and Environmental Affairs (DWEA) has the legislative mandate and power to regulate the use, flow and control of all water in the Republic of South Africa (Midvaal Water, 2013).

3.2.6.3 Water Services Act (Act 108 of 1997)

The objective of the Water Services Act (Act 108 of 1997) is to provide for the right of access to basic water supply and basic sanitation by setting national standards and norms.

3.2.6.4 *Employment Equity Act (Act 55 of 1998)*

The objective of the Employment Equity Act (Act No 55 of 1998) is to achieve equity in an organisation by promoting equal opportunity and fair treatment in the workplace by eliminating unfair discrimination and implementing affirmative action measures. Affirmative action measures are implemented to ensure equitable representation of gender and race in the organisation. The EE Act (Act 55 of 1998) has an influence on the recruitment process of an organisation and thus influences the Broad-Based Black Economic Empowerment status of an organisation.

3.2.6.5 *Broad-Based Black Economic Empowerment Act (Act 53 of 2003)*

According to South Africa (2003), the objectives of the Broad-Based Black Economic Empowerment Act is to facilitate broad-based black economic empowerment by:

- promoting economic transformation in order to enable meaningful participation of black people in the economy;
- achieving a substantial change in the racial composition of ownership and management structures of existing and new enterprises.

Table 3.1: BBBEE scorecard elements for large entities

	Element	Weighting
1	Ownership	25 points
2	Management control	27 points
3	Skills development	20 + 10 bonus points
4	Enterprise and supplier development	42 + 4 bonus points
5	Socio-economic development initiatives	5 points
6	Responsible Social Marketing and Communications	5 points
Total weighting points		124 + 14 bonus points

(Source: South Africa, 2016)

Table 3.1 depicts the allocation of points for the various BBBEE elements. The Skills development element accounts for almost 16% of the total points. Effective performance

management entails the development of employees and thus this practice can result in organisations scoring higher on their BBBEE scorecard.

With the revision of the new scoring system, Midvaal Water status has automatically dropped from a level four contributor to a level six contributor. This will influence the organisation's ability to procure tenders in its quest to expand its scientific services.

3.2.6.6 Labour Relations Act (Act 66 of 1995)

The Labour Relations Act (Act 66 of 1995), aims to promote economic development, social justice, labour peace and democracy in the workplace. The act applies to all employers, employees and trade unions. The act provides guidelines in cases of dismissal for poor work performance. According to the Labour Relations Act, any person determining whether a dismissal for poor work performance is unfair should consider the following:

- whether or not the employee failed to meet a performance standard; and
- if the employee did not meet a required performance standard whether or not:
 - the employee was aware, or could reasonably be expected to have been aware, of the required performance standard;
 - the employee was given a fair opportunity to meet the required performance standard; and
 - the dismissal was an appropriate sanction for not meeting the required performance standard.

Disciplinary action should be the last resort when dealing with poor performance. Effective performance management requires the development of employee skills and competencies to improve individual performance. In the event of poor performance, a performance improvement plan should be developed to point towards what employees should do to improve their performance. The performance management activity of constructing an employee development plan should also be carried out.

3.3 Chapter summary

A Water Board is classified as a Government-owned entity that operates and maintains the water resources infrastructure in South Africa. Amatola Water, Bloem Water, Lepelle Northern Water, Magalies Water, Mhlathuze Water, Overberg Water, Rand Water, Sedibeng Water and Umgeni Water are the nine water boards in South Africa that supply water throughout the nine provinces. Midvaal Water is not recognised as a Water Board but as a non-profit private company subjected to the same accountability, responsibility and legislation as other Water Boards.

Water scarcity, legislation, increasing energy costs, Blue Drop certification, deteriorating raw water conditions, poverty, non-revenue water and acid mine drainage (AMD) are some of the many challenges faced by the water utility industry in South Africa. The increasing cost of energy and deteriorating raw water conditions increase the cost of purifying raw water. Acid mine drainage contributes to the deteriorating raw water conditions. Non-revenue water results in lost revenue for water utilities.

CHAPTER 4: EMPIRICAL STUDY

4.1 Introduction

In Chapter 2 and Chapter 3, a comprehensive literature review was conducted by the researcher to get a better understanding of the various aspects of performance management and an overview of the water sector of South Africa. The literature review provided a scientific backing to the current research study. Academic books, academic journals, internet sources, business magazines, articles, North West University online library and online dictionaries were consulted during the literature review.

This chapter deals with the empirical study conducted at Midvaal Water, the approach that was followed and the results of the findings. The measuring instruments used for data collection and the study population are also discussed.

4.2 Research methodology

There are two main approaches to research, namely a qualitative approach or a quantitative approach. A quantitative research approach was followed in this study. This type of approach underlines the natural scientific method in human behavioural research and limits the research to what we can observe and measure objectively (Welman *et al.*, 2005).

4.3 Data collection

A questionnaire was compiled and used for data collection. Questionnaires were used in this study because of the following:

- Questionnaires are cheap and quick to distribute.
- Responses can be quantified and summarised.
- It is relatively inexpensive.

Questionnaires were hand delivered to participants and the nature of the research was explained.

4.4 Data analysis

The data from the questionnaires was captured on an Excel spreadsheet by the researcher. A descriptive statistical analysis was performed on the data set. PhStats software and Microsoft Excel were used to analyse the data.

4.5 Measuring instrument

The questionnaire was compiled taking into consideration the various factors that could have an influence on performance management. To avoid biases of the respondents, both positive and negative questions were asked. The questionnaire was divided into 7 sections.

4.5.1 Section A: Demographics

The first sections of the questionnaire dealt with the demographics of the respondent with elements of gender, age group, race, employment level, years of service and highest qualifications. These demographical elements assisted the researcher in gaining insights into the views and experiences of different employee groups at Midvaal Water.

4.5.2 Section B: Perceptions about supervisor

Section B of the questionnaire related to the respondent's views about his/her supervisor. This section comprised of 15 questions.

4.5.3 Section C: Performance appraisal methods

Section C of the questionnaire related to the respondent's perception about the performance appraisal methods at Midvaal Water. This section of the questionnaire comprised of 23 questions.

4.5.4 Section D: *Balanced scorecard*

Section D of the questionnaire related to the respondents' understanding and their perceptions of the balanced scorecard. This section of the questionnaire comprised of 8 questions.

4.5.5 Section E: *Vision, mission, strategy and policies*

Section E of the questionnaire related to strategy components of the vision statement, mission statement and company policy. Emphasis was placed on the documentation and articulation of these components within Midvaal Water. This section of the questionnaire comprised of 8 questions.

4.5.6 Section F: *Employee involvement*

Section F of the questionnaire related to employee involvement at Midvaal Water. This section of the questionnaire comprised of 4 questions.

4.5.7 Section G: *Challenges*

The questionnaire made provision for respondents to answer two open-ended questions related to the challenges of performance management systems and what factors they perceived as key determinants of effective performance management.

4.6 Scale

A five point Likert scale was used to allow the respondents to express how much they agreed or disagreed with a particular issue. The main advantage of 5-point Likert scale is that it is easy to interpret the data gathered because of the numbering assigned to each option.

Table 1.2: 5-point Likert scale

1	2	3	4	5
<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly agree</i>

4.7 Sampling

A population consists of all the items or individuals about which the researcher wants to draw a conclusion, while a sample is the portion of a population selected for analysis (Lavine *et al.*, 2011). The target population for the study consisted of all 132 employees of Midvaal Water. A sample size of 90 respondents was targeted because the sample size was small enough to execute within the limited time-frame and cost. Only 68 respondents participated in the survey. The sample included senior management, middle management, supervisors and junior level employees.

4.8 Limitations of the study

The limitations of the study are those characteristics of design or methodology that impacted or influenced the interpretation of the findings from the research. The limitation of this study is that of other Water Utilities not being included in the research and of research participants not willing to take part in the survey. The researcher made efforts to include Rand Water and Amatola Water in the study. Unfortunately, both these utilities did not take up the invitation to be part of the study.

4.9 Reliability

According to Andale (2014), the reliability of a measuring instrument is how well the instrument consistently measures what it was designed to measure and that cronbach's alpha is a way to indicate this reliability.

Table 4.1: Cronbach's alpha value interpretation

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

(Source: Andale, 2014)

Table 4.1 indicates how the Cronbach's alpha values should be interpreted and indicates that generally for values greater than 0.7, an instrument is considered reliable.

Table 4.2: Questionnaire's Cronbach's alpha value

Measuring instrument	Cronbach's alpha values	Internal consistency interpretation
Section B {Q1,Q2,Q3,Q4,Q5}	? ≥ 0.9	excellent
Section B {Q6,Q7,Q8,Q9,Q10,Q11,Q12,Q13,Q14,Q15}	? > 0.93	excellent
Section C {Q18,Q19,Q20,Q21,Q22,Q23}	? > 0.75	acceptable
Section C {Q1,Q2,Q3,Q4,Q5,Q6,Q12}	? > 0.88	good
Section D {Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8}	? > 0.89	good
Section E {Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8}	? > 0.91	excellent
Section F {Q1,Q2,Q3,Q4}	? > 0.81	good

Table 4.2 lists the Cronbach's values for the study questionnaire. The reliability is acceptable as all of the Cronbach's values are above 0.75.

4.10 Ethical consideration

To ensure that the research was conducted in an ethical manner, the researcher;

- requested consent from Midvaal Water to conduct the research;
- ensured that the data was kept in confidential;
- assured the respondents of their anonymity; and
- that during the research, no intervention was administered.

4.11 Research findings

The findings of the study are discussed in this section.

4.11.1 Demographics

The demographics of the sample is depicted in Table 4.3.

Table 4.3: Demographics of the sample

		Total	%
Gender of respondents	Male	45	67%
	Female	22	33%
Age of respondents	? 20 years	0	0%
	20 - 39 years	36	53%
	40 - 49 years	16	24%
	50 - 59 years	14	21%
	60+	2	3%
Race	White	19	28%
	Black	44	66%
	Coloured	2	3%
	Indian	2	3%
Qualifications	Below matric	13	20%
	Matric	21	32%
	Diploma/Degree	27	41%
	Post Grad	5	8%
Employment level	Junior	31	50%
	Middle	27	44%
	Senior	4	6%
	Top	0	0%
Work experience	0 -2 years	7	11%
	3-5 years	9	14%
	6-10 years	29	45%
	>10 years	20	31%

As per Table 4.3, 67% of the respondents were males and 33% were females. This is a fair representation of the actual target population (employee representation) at Midvaal Water. The majority (53%) of the respondents were in the age group 20 years to 39 years.

The second largest age group was the group ranging from 40 years to 49 years with a 23% representation. The sample comprised mainly of a young workforce. This age group is an ideal age group for Midvaal Water to invest in skills development.

Blacks accounted for almost 66% of the sample's race representation, followed by Whites who represented 28% of the sample, which is an approximate representation of the target population in the geographical area of Midvaal Water. Even though the sample was not that diverse with regard to ethnicity, it is a true representation of the work force of Midvaal Water.

More than 62% of the sample population were graduates or post-graduates. Only 20% of the respondents' were not matriculated. A fairly large portion of the sample was graduates (41%). This is a good sign for the organisation as the future leaders and performers are already employed by the organisation. The organisation does not need to focus on recruiting skilled and knowledgeable workers but rather focuses on retaining, developing and motivating the current workforce. If performance is not attainable with this knowledgeable workforce, then the company should focus on employee involvement.

4.11.2 Employee involvement

The literature review indicated that employee involvement influences employee performance. This study sought to find out the levels of employee involvement at the organisation.

The following questions were analysed:

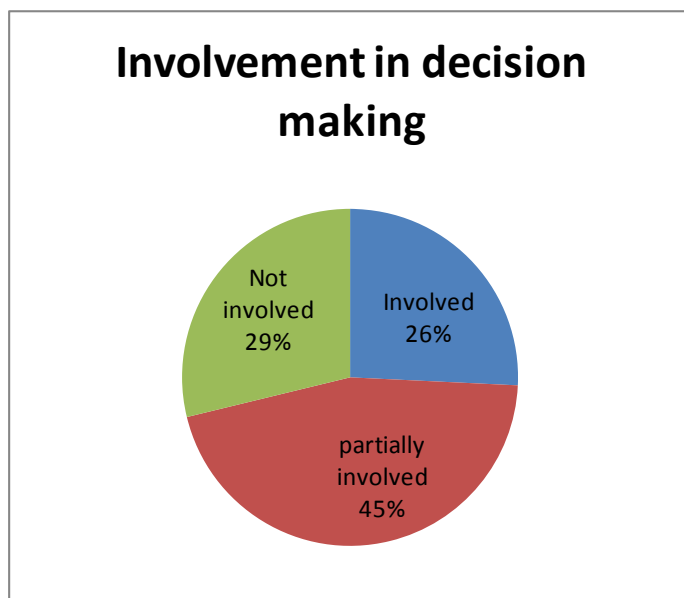
- F1: I am involved in some decision making regarding my work.
- F2: Do you have the appropriate amount of information to make correct decisions about your work.

Table 4.4: grouping of Question 1 data

Respondents response	Grouping
Strongly disagree	Not involved
Disagree	Not involved
Neutral	Partially involved
agree	Involved
Strongly agree	Involved

The data for Question1 (Section F) was also grouped as per Table 4.4 and a neutral response from the respondent was interpreted as an indication of the respondent being partially involved in the decisions regarding his or her work.

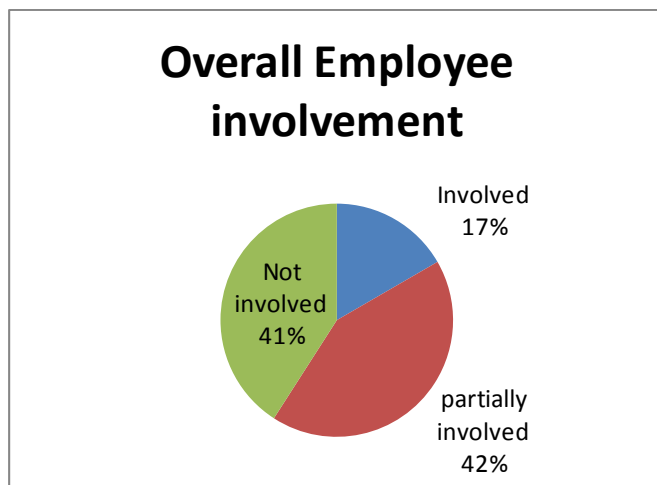
Figure 4.1: Involvement in decision-making regarding respondent's work



According to Figure 4.1, 29% of the employees believed that they were not involved in the decision-making process regarding their work, while 26% of the workers believed that they were involved in the decision-making process regarding their work. Forty-five percent of the respondents believed that they were only partially involved in the decision-making process regarding their work. Regarding individual decision-making, Midvaal Water neither excels nor fails. The organisation should strive to improve the involvement of employees in decision-making processes with regard to their jobs. The results of research studies confirm a

consistent positive relationship between employee involvement practices and productivity (Cummings & Worley, 2011:350).

Figure 4.2: Overall employee involvement



For overall employee involvement, the data for question f1 and question f2 were averaged and then also grouped the data as per Table 4.4. Figure 4.2 indicates that 41% of the employees' believed that employee involvement was low at Midvaal Water, while only 17% of the workers believed that employee involvement was high at Midvaal Water. Forty-two percent of the respondents believed that employees were partially involved at Midvaal Water. The organisation should also strive to better the perception of employee involvement at Midvaal Water.

4.11.3 Articulation of vision, mission and strategy

Performance management is about aligning resources to the organisation's goals. Hough *et al.* (2011: 5) define a strategy as "management's action plan for running the business and conducting operations". Management sets the action plan and these action plans need to be communicated to the employees. The vision of the organisation is the position the organisation would like to be in the future and the mission describes the organisation's present business and purpose (Hough *et al.*, 2011:5). Employees need to behave and act in accordance with the strategy. Having a strategy is important however it is the successful implementation of the strategy that counts. Therefore, it is important that the vision, mission and strategy are well articulated in the organisation. The analysis in this section deals with the articulation of the vision, mission and strategy of the organisation.

Section E of the questionnaire related to the employees' understanding of the organisation's strategy and their perceptions about how well the vision, mission and strategy were articulated across the entire organisation. The following questions were analysed:

- E3: The vision of the organisation is well articulated across the organisation.
- E5: The mission of the organisation is well articulated across the organisation.
- E6: The strategy of the organisation is well articulated across the organisation.
- E8: Company policies are easily accessible to all employees

The data for questions E3, E5, E6, E8 was grouped as per Table 4.5 and a neutral response from the respondents for questions E3, E5, E6 were interpreted as an indication of the articulation being reasonably articulated. A neutral response for question E8 was interpreted as an indication of the policies only being easily accessible to some employees.

Table 4.5: Data grouping for section E questions

Response	Grouping (E3,E5,E6)	Grouping (E8)
Strongly agree	well-articulated	easily accessible
Agree	well-articulated	easily accessible
Neutral	reasonably articulated	accessible to some
Disagree	poorly articulated	Not accessible
Strongly disagree	poorly articulated	Not accessible

Figure 4.3: Employee perceptions about the articulation of the vision



According to Figure 4.3, only 35% of the respondents perceived that the vision was well-articulated within the organisation, while 15% of the respondents believed that the vision was poorly articulated across the organisation.

Figure 4.4: Employee perceptions about the articulation of the strategy

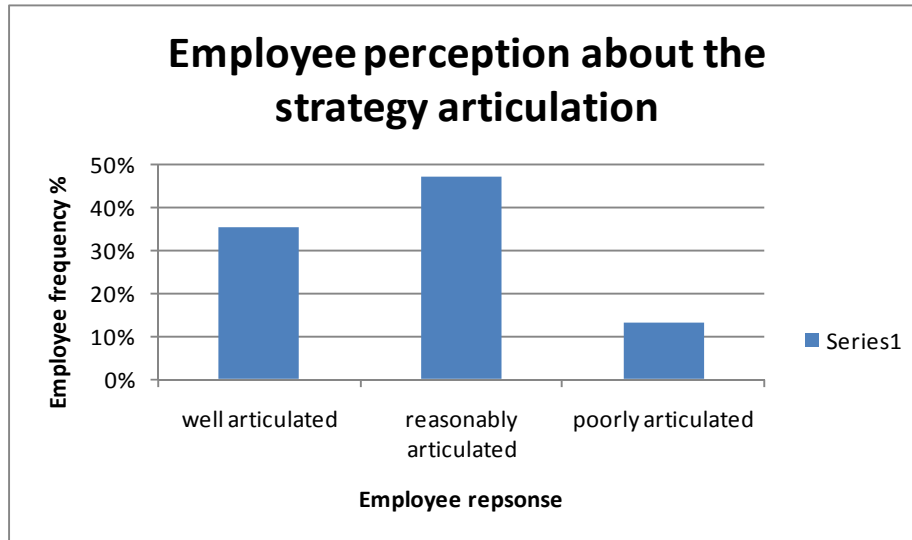


Figure 4.4 illustrates the employees' perceptions about strategy articulation at Midvaal Water. Only 35 % of the respondents believed that the strategy was well-articulated across the organisation, while 13 % perceived a poor articulation of the strategy.

Hough *et al.* (2011) express that the vision and strategy are vital components for organisational success. To improve performance, Midvaal Water should consider implementing practices that change these perceptions about vision articulation.

Figure 4.5: Graph about vision articulation and the accessibility of policies

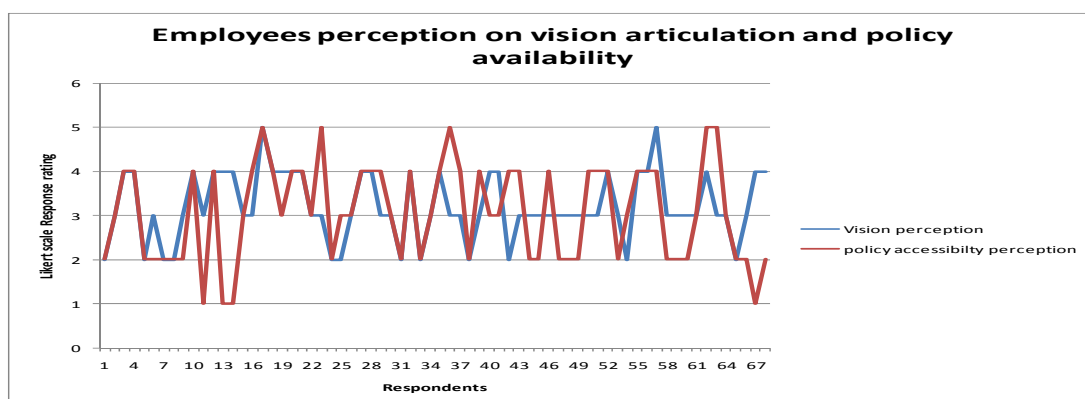


Figure 4.5 indicates that there was a correlation between how the employees felt about vision articulation and their feeling about the accessibility of policies to all employees. The majority of those who believed that the policies were not easily accessible also believed that the vision was poorly articulated.

Figure 4.6: Graph of employee perceptions about the accessibility of policies

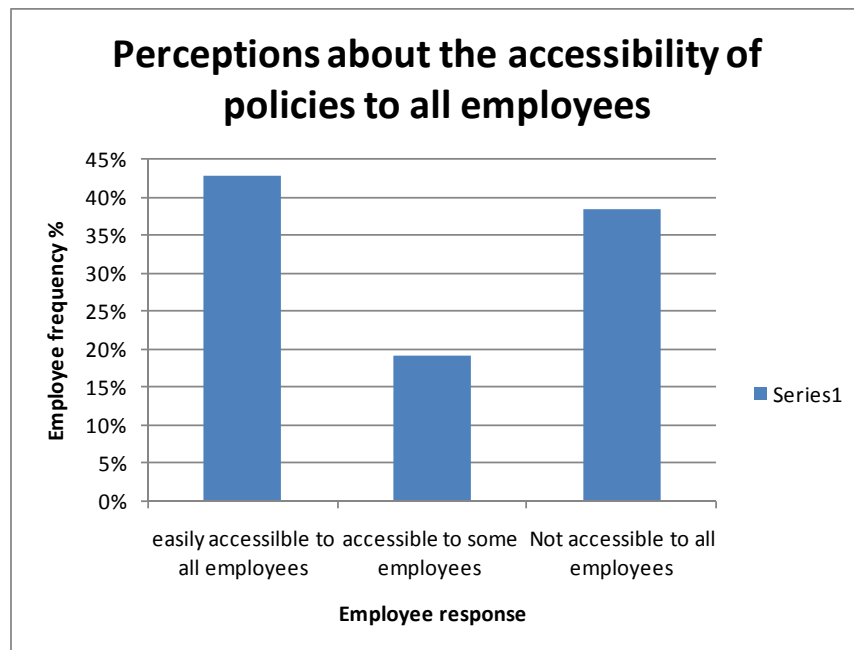


Figure 4.6 illustrates the respondents' perception about the accessibility of policies to all employees. As per Figure 4.6, 43% of the survey participants believed that the policies of the company were easily accessible to all employees of Midvaal Water, yet 38% of the survey participants believed that the policies of the company were not easily accessible to all employees.

4.11.4 Performance appraisal method

This section deals with the employee's perception regarding the performance appraisal method at Midvaal Water.

The question under consideration was "is the performance appraisal method fair". A pivot table analysis was constructed with regard to this question. The results of that analysis are presented in Table 4.6.

Table 4.6: Pivot table analysis on whether the performance appraisal method is fair

Count of Respondent		
Employment level	The Performance Appraisal method is a fair method	Total
	Agree	1
	Strongly Agree	2
Total		3
Junior	Agree	4
	Disagree	16
	Neutral	10
	Strongly Agree	1
Junior Total		31
Middle	Agree	8
	Disagree	3
	Neutral	12
	Strongly Agree	4
Middle Total		27
Senior	Agree	2
	Strongly Agree	1
	Strongly Disagree	1
Senior Total		4
Unsure	Agree	2
	Neutral	1
Unsure Total		3
{blank}	{blank}	
{blank} Total		
Grand Total		68

Table 4.6 is a pivot table analysis of the employees' perception as to whether the performance appraisal method is fair. Only 33% of the respondents agreed or strongly agreed that the appraisal method was fair. Only 16% of the junior employees, who made up 45% of the survey, agreed that the performance appraisal method was fair.

4.11.5 Balanced scorecard

This section looks at the employee's perception regarding the balanced scorecard. The question under consideration was "do you have a good understanding of the balanced scorecard". A pivot table analysis was constructed with regard to this question. The results of this analysis are presented in Table 4.7.

Table 4.7: Pivot table analysis on respondents understanding of the balanced scorecard

Count of Respondent		
Employment level	I have a good understanding of the Balanced scorecard	Total
	Agree	1
	Neutral	1
		1
Total		3
Junior	Agree	6
	Disagree	7
	Neutral	18
Junior Total		31
Middle	Agree	8
	Disagree	6
	Neutral	11
	Strongly Agree	2
Middle Total		27
Senior	Agree	2
	Neutral	1
	Strongly Agree	1
Senior Total		4
Unsure	Neutral	2
	Strongly Disagree	1
Unsure Total		3
{blank}	{blank}	
{blank} Total		
Grand Total		68

Table 4.7 is a pivot table analysis of the employees' understanding of the balanced scorecard. Only 29% of the respondents believed that they had an understanding of the balanced scorecard and only 4% strongly agreed that they had an understanding of the balanced scorecard. An interesting fact is that 65% of those who believed that they had a good understanding of the balanced scorecard comprised of Middle and Senior management. Only 37% of those in the junior level believed that they had an understanding of the balanced scorecard. This figure is very low. Employees at the junior level should be made knowledgeable about the balanced scorecard.

4.11.6 Management's concerns about employees

This section deals with the employee's perception about management.

The statement under consideration was "management is very concerned about my welfare". A pivot table analysis was constructed with regard to this question. The results of this analysis are presented in Table 4.8.

Table 4.8: Pivot table analysis on respondents perception about management's concern

Count of Respondent		
Race	Management is very concerned about my welfare.	Total
Black	Agree	7
	Disagree	13
	Neutral	17
	Strongly Agree	2
	Strongly Disagree	3
Black Total		44
Coloured	Agree	1
	Disagree	1
Coloured Total		2
Indian	Agree	1
	Neutral	1
Indian Total		2
White	Agree	3
	Disagree	2
	Neutral	5
	Strongly Agree	8
White Total		18
		1
Total		1
(blank)	(blank)	
(blank) Total		
Grand Total		83

Table 4.8 is a pivot table analysis of the employees' perceptions about management. Only 28% of the respondents believed that management was concerned about their welfare. Only 20% of the black respondents believed that management was concerned about their welfare.

4.11.7 Management's skills and ability

This section deals with the employee's perception of management's ability to perform. Performance management is a managerial process. The ability, skills and employees' confidence of managers influence the performance management process. The following questions were analysed:

- B1: Management is very capable of performing its (his /her) job.
- B2: Management is known to be successful at the things it tries to do.
- B3: Management has much knowledge about the work that needs to be done.
- B4: I feel very confident about management's skills.
- B5: Management has specialized capabilities that can increase our performance.

Figure 4.7: Employee perceptions about management's abilities

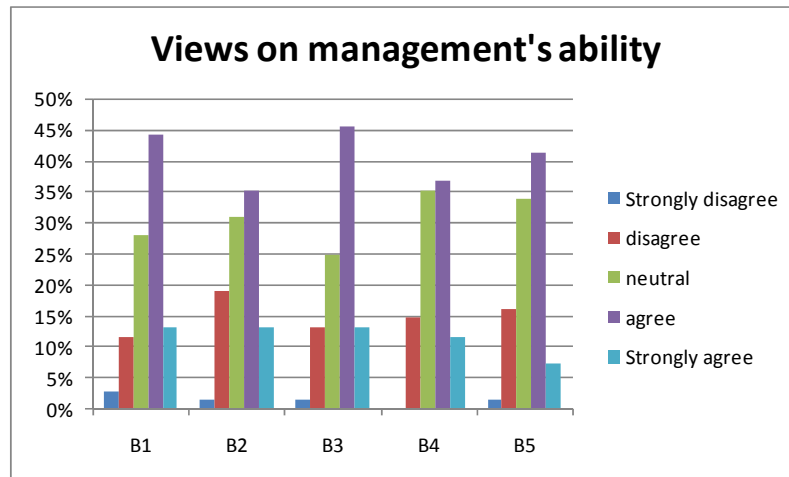


Figure 4.7 depicts the employees' view of management's ability. The majority of the respondents believed that the managers are capable, successful and knowledgeable. Only 15% of the respondents felt that management was not capable of performing their jobs while 28% of them were undecided. Only 15% of the respondents felt that management was not knowledgeable of performing their jobs while 59% felt that management is knowledgeable of performing their jobs.

4.11.8 Management's helpfulness

This section deals with the employee's perception about management's helpfulness to them. Performance management is about developing employee capabilities and coaching them. The helpfulness of managers is important for the coaching and mentoring of employees. The following questions were analysed:

- B7: My needs and desires are very important to management.
- B9: Management really looks out for what is important to me.
- B10: Management will go out of its way to help me.

Figure 4.8: Employee perception about management helpfulness

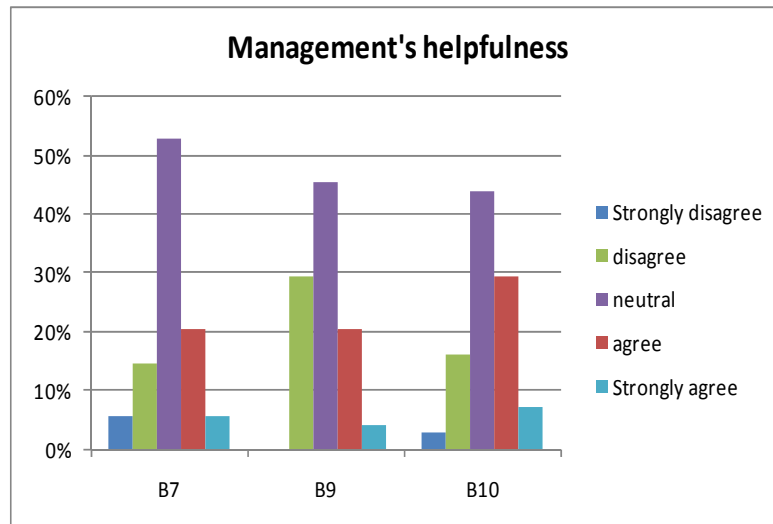


Figure 4.8 depicts the employees' view of management's helpfulness. 26% of the respondents agree or strongly agree that their needs and desires are very important to management. Only 21% of the respondents disagree or strongly disagree that their needs and desires are very important to management while the majority were undecided with regard to question B7. With regard to the question "Management really looks out for what is important to me", 21% agree, 4% strongly agree, 29% disagree while 46% are not sure. With regard to the question Management will go out of its way to help me", 29% agree, 7% strongly agree, 10% disagree, 3% strongly disagree while 43% are undecided.

4.11.5 Reward system

The literature review indicated that the rewarding and recognition of employees influences employee motivation and performance. This section looks at the employee's perception regarding rewards and recognition. The following questions were analysed:

- F3: I am rewarded for my skills and knowledge.
- F4: Employees are rewarded for their skills and knowledge.

Figure 4.9: Employee perceptions about being rewarded for skills and knowledge

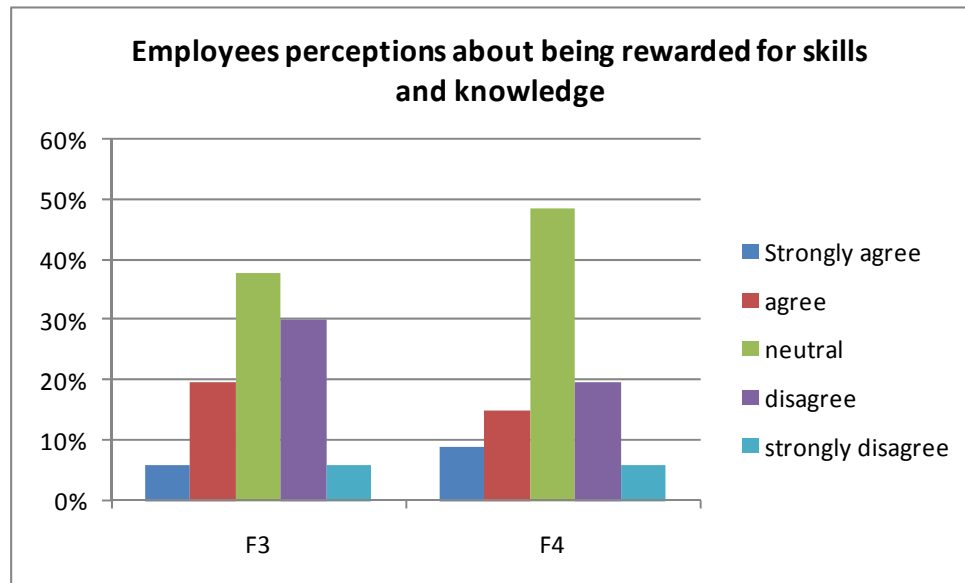


Figure 4.9 depicts the employees' perception about being rewarded for their skills and knowledge. Twenty-six percent of the sample population believed that they were rewarded for their skills and knowledge, while 36 % did not believe that they were rewarded for their skills and knowledge. Twenty-six percent of the sample population believed that employees are being rewarded for their skills and knowledge while twenty-six percent did not believe that employees are being rewarded for their skills and knowledge.

4.12 Chapter summary

This chapter outlined the research methodology, the empirical investigation, measuring instrument and data analysis used in the study. The race, age, gender, employment level, education level and "years of service" of the respondents were analysed and discussed. The results of the data analysis were discussed. The data analysis revolved around the employee involvement and the articulation of the vision and strategy of the organisation. The discussion also focused on the employees' perceptions about the accessibility of policies, the performance appraisal method, the respondents' understanding of the balanced scorecard, the respondent's perception about management's concern for them, the respondent's perceptions about employees being rewarded for their skills and knowledge, the respondent's perceptions about they being rewarded for their skills and knowledge.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this chapter is to provide conclusions and recommendations. In this chapter, the author makes conclusions based on the results of the empirical study. The researcher also prescribes recommendations that the organisation can adopt in pursuit of reintroducing an effective performance management system.

Chapter 2 provided a literature review of performance management and the processes and practices related to performance management. Chapter 3 discussed the water sector in South Africa and the challenges faced by this sector. The results of the empirical study discussed in Chapter 4 provide the basis for the conclusion and recommendations supplied in this chapter.

5.2 Conclusions

According to the literature review in Chapter 2, employee involvement is the participation of employees by contributing ideas and recommendations and is a key factor in performance management and organisation success. Giving employees the power to make decisions regarding their work is a key element of employee involvement. Less than 27 % of the employees believed that they were involved in the decision-making process regarding their work. Employee perceptions discussed in Chapter 4 indicated that employee involvement was low. Only 17 % of the respondents believed that employee involvement was high.

Only a few of the respondents (35%) believed that the vision was well-articulated within the organisation. Also, not many of the respondents (35%) believed that the strategy was well-articulated within the organisation. Policies were not easily accessible to all employees. Only 43% of the survey participants believed that the policies of the company were easily accessible.

The majority of the respondents did not believe in the fairness of the performance appraisal system. Only 33% believed that the system was fair. This issue was the cause for why management stopped the practice of linking rewards to performance. The literature study indicated that providing feedback on the person's character or providing unsupported

feedback created an opportunity for employees to question the fairness of the performance appraisal process.

Only a few of the respondents (29%) believed that they had a good understanding of the balanced scorecard. The majority of the junior level employees were not knowledgeable about the balanced scorecard. A large portion of the sample believed that management was not concerned with their welfare. Almost a quarter of the respondents believed that either they or other employees are being rewarded for their skills and knowledge. The practice of not rewarding individual performance could be a contributor to this perception.

The minority of the sample believed that they or others are rewarded for their skills and knowledge. This could be a result of employees not valuing the rewards they received or that rewards are not that visible.

The majority of the respondents believed that the managers are capable, successful and knowledgeable. However, only the minority of the respondents believed that management was concerned with the welfare of the employees.

5.3 Recommendations

The literature study in Chapter 2 indicated employee involvement as a determinant for effective performance management. The study concludes that employee involvement is not high. To improve employee involvement, the organisation should;

- increase the involvement of employees in the decision-making process regarding the employee work;
- provide employees with the appropriate amount of information to make correct decisions about their work; and
- reward employees for productivity and contribution and not just their skills and knowledge.

Hough *et al.* (2011) express that the vision and strategy are vital components for organisational success. To improve performance, the organisation should consider implementing practices that improve the articulation of the vision, mission and strategy.

The following suggestions are recommended to improve the articulation of the vision, mission and strategy:

- Send out a business letter or email to employees conveying the vision, mission and values of the organisation. An email further articulates the vision and serves as a document that workers can refer to in the future.
- A balanced scorecard should be utilised to articulate the vision and map out the strategy.
- An image of the organisation's strategic map should be printed on calendars and corporate gifts which can then be distributed to employees.
- The vision, mission and value statements should be printed on corporate stationary and business cards.
- The organisation's intranet and data storage systems should be used as centralised reference points for these documents.
- Senior management should discuss the vision and mission with employees at general meetings.

Power (2012) defines a workplace policy as a set of rules or procedure relating to how employees should behave in an organisation. For employees to behave in the desired way, they need to know the policies of the organisation. The benefits of having policies and having them easily accessible are that employees become knowledgeable about how they should behave, documented rules and guidelines are available for employees to refer to for decision-making and policies serve as a medium to communicate information. The study findings indicate that policies are not easily accessible to all employees and this need to be improved. Locating policies in a central location or on the corporate network for all employees to access will help resolve this issue. Automatic system reminders should notify employees about changes and updates to policies.

The findings indicate that only 33 % of the respondents believed that the performance appraisal method was fair. To improve the perception regarding the fairness of performance appraisal system, managers and supervisors should:

- avoid excessive criticism,
- refrain from using negative words,
- not threaten to use disciplinary action to correct poor performance,
- focus on work performance rather than the individual's character,

- provide supported feedback.

The data analysis indicated that the majority of the respondents did not have a good understanding of the balanced scorecard, especially those at junior levels. Employees in the junior level should be made knowledgeable about the balanced scorecard. To improve these figures, a workshop for junior level employees on the balanced scorecard should be conducted

Rewards should be readily available, linked to performance and skills development. The awarding of rewards should be visible to employees.

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ANNEXURES

ANNEXURE A:Structured Questionnaire

Performance Management Questionnaire

These questions factors affecting performance and performance management.
Answers are anonymous.

SECTION A: Demographical Information

Mark the applicable block with a cross (X). Complete the applicable information.

A1	Gender	Male	Female
----	--------	------	--------

A2	Age Group	1)≤ 20	2)20 - 39	3)40 - 49	4)50 - 59	5)60+
----	-----------	--------	-----------	-----------	-----------	-------

A3	Race	1)Black	2)White	3)Indian	4)Coloured	5)Other
----	------	---------	---------	----------	------------	---------

A4	Employment level	1)Junior	2) Middle	3)Senior	4)Top	5) Unsure
----	------------------	----------	-----------	----------	-------	-----------

A5	Years of Service	1)0 -2 yrs	2)3-5 yrs	4)6-10 yrs	5) >10yrs
----	------------------	------------	-----------	------------	-----------

A6	Highest qualification	1)Below matric	2)Matric	3)Diploma/Degree	5)Post Grad
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Section B: This section relates to your views about your supervisor.

Please rate the extent to which you agree or disagree with the following statements by making an "X" over the appropriate number on the 1 to 5 point scale next to the statement.				
1	2	3	4	5
<i>Strongly disagree</i>	<i>disagree</i>	<i>Neutral</i>	<i>agree</i>	<i>Strongly agree</i>

	STATEMENT	SCALE				
B1	Management is very capable of performing its (his /her) job.	1	2	3	4	5
B2	Management is known to be successful at the things it tries to do.	1	2	3	4	5
B3	Management has much knowledge about the work that needs done.	1	2	3	4	5
B4	I feel very confident about management's skills.	1	2	3	4	5
B5	Management has specialized capabilities that can increase our performance.	1	2	3	4	5
B6	Management is very concerned about my welfare.	1	2	3	4	5
B7	My needs and desires are very important to management.	1	2	3	4	5
B8	Management would not knowingly do anything to hurt me.	1	2	3	4	5
B9	Management really looks out for what is important to me.	1	2	3	4	5
B10	Management will go out of its way to help me.	1	2	3	4	5
B11	Management has a strong sense of justice.	1	2	3	4	5
B12	I never have to wonder whether management will stick to its word.	1	2	3	4	5
B13	Management tries hard to be fair in dealings with others.	1	2	3	4	5
B14	I like management's values.	1	2	3	4	5
B15	Management's behaviour is guided by sound principles.	1	2	3	4	5

Section C: Performance Appraisal at your company.

Please rate the extent to which you agree or disagree with the following statements by making an "X" over the appropriate number on the 1 to 5 point scale next to the statement.				
1	2	3	4	5
<i>Strongly disagree</i>	<i>disagree</i>	<i>Neutral</i>	<i>agree</i>	<i>Strongly agree</i>

	STATEMENT	SCALE				
C1	The Performance Appraisal method is a fair method	1	2	3	4	5
C2	The Performance Appraisal method improves my performance.	1	2	3	4	5
C3	The evaluation of my job performance is fairly accurate.	1	2	3	4	5
C4	The quantity of work done is vital to my performance review.	1	2	3	4	5
C5	The quality of work done is vital to my performance review	1	2	3	4	5
C6	How many mistakes I make in my work is important to my review.	1	2	3	4	5
C7	Whether or not my supervisor likes me is important to my review.	1	2	3	4	5
C8	Finding ways for the company to save money is important to my performance review.	1	2	3	4	5
C9	Whether or not I get a raise depends on my performance.	1	2	3	4	5
C10	Performance review is dictated by my supervisor.	1	2	3	4	5
C11	I prefer my supervisor to dictate my performance review	1	2	3	4	5

C12	The performance Appraisal method was developed for staff benefit.	1	2	3	4	5
C13	The performance Appraisal method is used to victimise me.	1	2	3	4	5
C14	The current performance appraisal method negatively influences my performance.	1	2	3	4	5
C15	The current performance appraisal method should be replaced.	1	2	3	4	5
C16	Management don't care about me when it comes to appraisal time, they run through the motions to get the job done	1	2	3	4	5
C17	This action by management negatively influences my performance.	1	2	3	4	5
C18	My manager always give positive feedback when others perform well	1	2	3	4	5
C19	My manager gives special recognition when others' work is very good	1	2	3	4	5
C20	My manager commends others when they do a better-than-average job	1	2	3	4	5
C21	My manager personally compliments others when they do outstanding work.	1	2	3	4	5
C22	My manager frequently does not acknowledge the good performance of others	1	2	3	4	5
C23	This action by management negatively influences my performance.	1	2	3	4	5

Section D: Balanced scorecard

Please rate the extent to which you agree or disagree with the following statements by making an "X" over the appropriate number on the 1 to 5 point scale next to the statement.				
1	2	3	4	5
<i>Strongly disagree</i>	<i>disagree</i>	<i>Neutral</i>	<i>agree</i>	<i>Strongly agree</i>

	STATEMENT	SCALE				
D1	I have a good understanding of the balanced scorecard	1	2	3	4	5
D2	My organisation uses the balanced scorecard	1	2	3	4	5
D3	I was involved in the development of my balanced scorecard.	1	2	3	4	5
D4	My KPI's and realistic and measurable.	1	2	3	4	5
D5	My KPI's are aligned to the company's strategic objectives	1	2	3	4	5
D6	The balanced scorecard gives a true reflection of my performance	1	2	3	4	5
D7	The balanced Scorecard enables our company to achieve its strategic goals.	1	2	3	4	5
D8	Do you agree that communication is the most important in relation to improving performance when implementing a balanced scorecard?	1	2	3	4	5

Section E: Strategy

Please rate the extent to which you agree or disagree with the following statements by making an "X" over the appropriate number on the 1 to 5 point scale next to the statement.

1	2	3	4	5
<i>Strongly disagree</i>	<i>disagree</i>	<i>Neutral</i>	<i>agree</i>	<i>Strongly agree</i>

	STATEMENT	SCALE				
E1	I have a good understanding of my organisations vision statement	1	2	3	4	5
E2	The vision is relevant to the organisations activities	1	2	3	4	5
E3	The vision of the organisation is well articulated across the organisation.	1	2	3	4	5
E4	I have a good understanding of your organisations mission statement	1	2	3	4	5
E5	The mission of the organisation is well articulated across the organisation	1	2	3	4	5
E6	The strategy of the organisation is well articulated across the organisation	1	2	3	4	5
E7	Company policies are well documented.	1	2	3	4	5
E8	Company policies are easily accessible to all employees	1	2	3	4	5

Section F: Employee involvement

Please rate the extent to which you agree or disagree with the following statements by making an "X" over the appropriate number on the 1 to 5 point scale next to the statement.				
1	2	3	4	5
<i>Strongly disagree</i>	<i>disagree</i>	<i>Neutral</i>	<i>agree</i>	<i>Strongly agree</i>

	STATEMENT	SCALE				
F1	I am involved in some decision making regarding my work	1	2	3	4	5
F2	Do you have the appropriate amount of information to make correct decisions about your work	1	2	3	4	5
F3	I am rewarded for my skills and knowledge.	1	2	3	4	5
F4	Employees are rewarded for their skills and knowledge	1	2	3	4	5

General Questions

1.) What are the challenges that you are faced with in developing a performance management system?

2.) What are the key factors for an effective PMS

ANNEXURE B:Employee Self-Appraisal Form

Employee Self-Appraisal

Name _____ Date of Review _____

Job Title _____ Department _____

Date Appointed to this Position _____ Review Period _____

Manager's Name and Title _____

Major Areas of Responsibility/Goals - These typically relate to the major activities that are performed on the job and/or the goals that have been established by your manager and discussed with you. This is also an opportunity to describe noteworthy accomplishments.

Primary Performance Expectations: Responsibilities/Goals	Notes/Comments on Achievements & Areas for Improvement

ANNEXURE C:Request permission

Mr L Pillay
House no.2
Midvaal Water
NorthWest
2550
Tel: 079 5168264
logan@midvaalwater.co.za

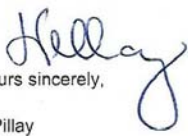
16 May 2015

Mr R U Khan
Midvaal Water

Re : Permission to conduct study at Midvaal Water

My dissertation, The determinants of effective performance management in South African utility companies, requires that I conduct a study of performance management at a water utility company. I do hereby request permission to conduct my research study at Midvaal Water.

Thank you for your cooperation.


Yours sincerely,
L Pillay
IT Administrator

ANNEXURE D:Cronbach's alpha

Cronbach's alpha	Section F				
E1	E2	E3	E4		
r1	2	2	2	2	8
r2	2	2	2	2	8
r3	4	3	3	3	13
r4	3	3	3	3	12
r5	3	3	3	3	12
r6	3	2	3	2	10
r7	3	2	2	2	9
r8	3	3	3	3	12
r9	3	3	3	3	12
r10	5	5	5	5	20
r11	1	1	2	3	/
r12	3	3	3	3	12
r13	1	5	5	5	16
r14	5	4	2	3	14
r15	2	2	3	3	10
r16	2	3	1	1	/
r17	2	3	3	3	11
r18	4	4	3	3	14
r19	3	4	4	4	15
r20	4	4	3	3	14
r21	4	3	2	2	11
r22	4	5	5	5	19
r23	4	4	4	4	16
r24	4	3	4	4	15
r25	3	3	3	3	12
r26	3	3	3	3	12
r29	3	3	3	3	12
r30	3	4	3	3	13
r31	2	2	2	2	8
r32	3	3	3	3	12
r33	3	2	2	2	9
r34	2	2	3	3	10
r35	3	4	3	3	13
r36	3	3	4	4	14
r37	3	4	4	3	14
r38	3	2	3	3	11
r39	2	2	1	1	6
r40	4	5	4	5	18
r41	2	4	2	2	10
r42	3	4	2	1	10
r43	3	3	1	2	9
r44	3	3	3	3	12
r45	3	3	3	3	12
r46	3	4	2	2	11
r47	3	3	3	3	12
r48	2	3	2	3	10
r49	3	3	3	3	12
r50	4	4	4	4	16
r51	3	4	2	2	11
r52	4	4	4	3	15
r53	1	1	1	1	4
r54	4	4	4	4	16
r55	4	3	3	3	13
r56	3	3	4	4	14
r57	4	4	4	4	16
r58	3	3	3	3	12
r59	2	2	2	3	9
r60	3	3	2	3	11
r61	2	2	2	2	8
r62	4	4	4	4	16
r63	2	2	4	5	13
r64	2	3	2	4	11
r65	3	3	2	3	11
r66	2	2	2	2	8
r67	1	5	5	5	16
r68	5	4	2	3	14
total	35	32	34	34	135
VAR	0.86157	0.886134	0.9736	0.954316	3.67562
k	4	'=COUNTA(B3:E3)'			
var sum	3.67562	'=F71'			
var	9.378558	'=VARP(F4:F69)'			
alpha	0.810777	'=(B75/(B75-1))*(1-B76/B77)'			

Cronbach's alpha	Section F For Column Deletion			
	E1	E2	E3	E4
r1	6	6	6	6
r2	6	6	6	6
r3	9	10	10	10
r4	9	9	9	9
r5	9	9	9	9
r6	7	8	7	8
r7	6	7	7	7
r8	9	9	9	9
r9	9	9	9	9
r10	15	15	15	15
r11	6	6	5	4
r12	9	9	9	9
r13	15	11	11	11
r14	9	10	12	11
r15	8	8	7	7
r16	5	4	6	6
r17	9	8	8	8
r18	10	10	11	11
r19	12	11	11	11
r20	10	10	11	11
r21	7	8	9	9
r22	15	14	14	14
r23	12	12	12	12
r24	11	12	11	11
r25	9	9	9	9
r26	9	9	9	9
r29	9	9	9	9
r30	10	9	10	10
r31	6	6	6	6
r32	9	9	9	9
r33	6	7	7	7
r34	8	8	7	7
r35	10	9	10	10
r36	11	11	10	10
r37	11	10	10	11
r38	8	9	8	8
r39	4	4	5	5
r40	14	13	14	13
r41	8	6	8	8
r42	7	6	8	9
r43	6	6	8	7
r44	9	9	9	9
r45	9	9	9	9
r46	8	7	9	9
r47	9	9	9	9
r48	8	7	8	7
r49	9	9	9	9
r50	12	12	12	12
r51	8	7	9	9
r52	11	11	11	12
r53	3	3	3	3
r54	12	12	12	12
r55	9	10	10	10
r56	11	11	10	10
r57	12	12	12	12
r58	9	9	9	9
r59	7	7	7	6
r60	8	8	9	8
r61	6	6	6	6
r62	12	12	12	12
r63	11	11	9	8
r64	9	8	9	7
r65	8	8	9	8
r66	6	6	6	6
r67	15	11	11	11
r68	9	10	12	11
k	3	3	3	3
var sum	2.81405	2.789486	2.70202	2.721304
var	6.572084	5.511708	5.076217	5.272727
alpha	0.857727	0.740847	0.701565	0.725836

Cronbach's alpha	B1	Section B B2	B3	B4	B5		
r1		2	2	2	3	2	11
r2		2	2	2	2	2	10
r3		4	4	4	4	3	19
r4		3	4	4	4	4	19
r5		1	2	2	2	2	9
r6		3	3	2	2	2	12
r7		2	2	3	3	3	13
r8		4	3	3	4	4	18
r9		2	2	2	2	1	9
r10		5	5	5	5	5	25
r11		2	2	2	3	2	11
r12		4	4	4	2	4	18
r13		4	5	4	5	5	23
r14		4	3	3	2	2	14
r15		4	4	4	4	3	19
r16		4	4	5	3	2	18
r17		5	5	5	5	3	23
r18		4	4	4	4	4	20
r19		4	3	4	4	3	18
r20		4	2	3		4	13
r21		3	4	4	4	3	18
r22		5	5	5	5	5	25
r23		5	5	5	5	4	24
r24		4	4	4	4	4	20
r25		3	3	3	3	3	15
r26		4	4	4	4	3	19
r27		4	4	4	4	4	20
r28		5	5	4	4	5	23
r29		4	4	4	4	4	20
r30		3	3	4	4	4	18
r31		2	1	3	3	3	12
r32		3	3	4	3	4	17
r33		2	2	2	2	3	11
r34		4	4	4	4	3	19
r35		4	2	3	3	4	16
r36		5	5	5	5	4	24
r37		3	4	3	4	4	18
r38		1	2	1	2	2	8
r39		4	3	5	3	2	17
r40		5	4	5	4	4	22
r41		3	2	4	2	3	14
r42		3	3	3	3	3	15
r43		3	3	4	3	4	17
r44		3	3	3	3	3	15
r45		3	3	3	3	3	15
r46		4	4	4	3	4	19
r47		4	3	4	3	3	17
r48		3	3	3	3	3	15
r49		3	3	3	3	3	15
r50		4	4	4	3	4	19
r51		4	4	4	5	4	21
r52		5	4		4	4	17
r53		3	3	2	3	4	15
r54		4	4	4	3	3	18
r55		4	4	4	4	4	20
r56		4	4	4	4	4	20
r57		5	4	5	4	4	22
r58		3	3	3	3	3	15
r59		3	3	4	4	4	18
r60		4	4	4	4	4	20
r61		3	3	3	3	3	15
r62		4	5	4	4	4	21
r63		4	4	4	4	4	20
r64		4	3	4	4	3	18
r65		3	2	3	3	2	13
r66		2	2	2	2	2	10
r67		4	5	4	5	5	23
r68		4	3	3	3	3	16
total		34	35	35	36	34	174
VAK	0.925606	0.974697	0.872355	0.785921	0.791306	4.349885	
k	5						
var sum	4.349885		'=COUNTA(B3:F3)'				
var	16.58369		'=G73'				
alpha	0.922126		'=VARP(G4:G71)'				
			'=(B75/(B75-1))*(1-B76/B77)'				

cronbach's alpha	Section B For Column Deletion				
B1	B2	B3	B4	B5	
r1	9	9	9	8	9
r2	8	8	8	8	8
r3	15	15	15	15	16
r4	16	15	15	15	15
r5	8	7	7	7	7
r6	9	9	10	10	10
r7	11	11	10	10	10
r8	14	15	15	14	14
r9	7	7	7	7	8
r10	20	20	20	20	20
r11	9	9	9	8	9
r12	14	14	14	16	14
r13	19	18	19	18	18
r14	10	11	11	12	12
r15	15	15	15	15	16
r16	14	14	13	15	16
r17	18	18	18	18	20
r18	16	16	16	16	16
r19	14	15	14	14	15
r20	9	11	10	13	9
r21	15	14	14	14	15
r22	20	20	20	20	20
r23	19	19	19	19	20
r24	16	16	16	16	16
r25	12	12	12	12	12
r26	15	15	15	15	16
r27	16	16	16	16	16
r28	18	18	19	19	18
r29	16	16	16	16	16
r30	15	15	14	14	14
r31	10	11	9	9	9
r32	14	14	13	14	13
r33	9	9	9	9	8
r34	15	15	15	15	16
r35	12	14	13	13	12
r36	19	19	19	19	20
r37	15	14	15	14	14
r38	7	6	7	6	6
r39	13	14	12	14	15
r40	17	18	17	18	18
r41	11	12	10	12	11
r42	12	12	12	12	12
r43	14	14	13	14	13
r44	12	12	12	12	12
r45	12	12	12	12	12
r46	15	15	15	16	15
r47	13	14	13	14	14
r48	12	12	12	12	12
r49	12	12	12	12	12
r50	15	15	15	16	15
r51	17	17	17	16	17
r52	12	13	17	13	13
r53	12	12	13	12	11
r54	14	14	14	15	15
r55	16	16	16	16	16
r56	16	16	16	16	16
r57	17	18	17	18	18
r58	12	12	12	12	12
r59	15	15	14	14	14
r60	16	16	16	16	16
r61	12	12	12	12	12
r62	17	16	17	17	17
r63	16	16	16	16	16
r64	14	15	14	14	15
r65	10	11	10	10	11
r66	8	8	8	8	8
r67	19	18	19	18	18
r68	12	13	13	13	13
k	4	4	4	4	4
var sum	3.424279	3.375188	3.47753	3.563964	3.558579
var	10.68404	10.20415	10.94291	10.88992	11.71367
alpha	0.905994	0.892312	0.909615	0.896971	0.928271

Cronbach's alpha	Section B										
	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	
r1	2	3	2	2	2	2	2	3	4	4	26
r2	2	4	2	2	3	2	2	4	4	2	27
r3	3	3	3	4	4	4	5	4	3	3	36
r4	2	4	4	3	3	4	4	4	4	4	36
r5	1	1	1	2	1	1	2	2	2	2	15
r6	2	2	3	3	4	3	3	2	3	3	28
r7	3	3	2	2	2	3	2	2	3	2	24
r8	3	3	3	3	3	3	3	2	3	3	29
r9	1	1	3	3	3	3	2	2	1	1	20
r10	5	4	5	4	4	5	5	5	5	4	46
r11	2	3	3	3	3	1	1	3	3	2	24
r12	3	3	4	2	2	2	4	4	3	4	31
r13	4	3	3	2	2	5	1	3	4	5	32
r14	2	2	3	2	2	1	1	1	1	1	16
r15	4	3	4	4	4	3	3	3	3	3	34
r16	5	3	3	3	4	3	3	3	3		30
r17	3	3	4	3	3	4	4	4	4	4	36
r18	4	4	4	3	3	4	3	3	4	4	36
r19	2	2	2	2	2	2	3	2	2	2	21
r20	3	3	4	3	4	4	3	3	4	4	35
r21	3	3	3	3	4	4	3	3	3	3	32
r22	5	5	5	5	5	5	5	5	5	5	50
r23	5	4	5	3	5	5	5	5	5	5	47
r24	3	3	4	3	4	4	3	3	3	3	33
r25	3	3	3	3	3	3	3	3	3	3	30
r26	3	3	3	3	3	3	3	3	4	4	32
r27	4	4	4	4	4	4	4	4	4	4	40
r28	5	5	5	4	4	5	5	4	4	4	45
r29	4	4	4	4	4	4	4	4	4	4	40
r30	3	3	4	3	3	3	3	3	3	3	31
r31	2	3	3	2	2	2	3	2	3	3	25
r32	2	3	4	3	3	4	4	4	4	4	35
r33	3	2	2	2	2	3	2	3	3	2	24
r34	3	3	4	4	3	3	3	3	3	3	32
r35	3	4	4	3	3	4	3	3	4	3	34
r36	5	4	5	3	5	5	5	4	5	4	45
r37	4	3	3	4	4	4	3	3	4	4	36
r38	1	1	1	2	1	1	2	1	2	2	14
r39	4	3	3	3	4	3	3	3	3	3	32
r40	5	5	5	4	5	5	5	5	4	5	48
r41	1	1	3	2	3	3	3	3	3	3	25
r42	2	3	2	3	3	3	3	3	3	3	28
r43	3	3	3	4	4	4	2	2	3	3	31
r44	2	2	3	2	3	3	3	3	3	3	27
r45	2	2	3	2	2	3	3	3	2	3	25
r46	3	4	3	2	3	4	3	2	2	3	29
r47	1	3	3	3	3	3	3	3	2	3	27
r48	2	3	3	3	3	3	3	3	3	3	29
r49	3	3	3	3	3	3	3	3	3	3	30
r50	3	4	3	4	4	3	3	2	2	3	31
r51	3	2	3	2	3	3	3	3	3	4	29
r52		4	5	5	4	5	3	5	3	3	37
r53	3	3	3	4	3	2	2	3	3	2	28
r54	4	3	4	4	4	3	4	3	4	4	37
r55	4	3	4	3	3	4	4	4	4	4	37
r56	4	4	4	4	4	4	4	4	4	4	40
r57	4	3	5	3	4	4	4	4	4	5	40
r58	3	3	3	3	3	3	3	3	3	3	30
r59	3	3	3	3	3	3	3	2	3	3	29
r60	3	3	3	3	3	3	3	3	3	3	30
r61	3	3	3	3	3	3	3	3	3	3	30
r62	3	4	5	5	5	4	4	5	5	5	45
r63	5	5		2	4	3	2	1	4	3	29
r64	3	3	3	3	3	3	3	3	3	3	30
r65	2	2	2	2	2	2	2	2	2	2	20
r66	2	2	3	3	3	3	2	2	1	2	23
r67	4	3	3	2	2	5	1	3	4	5	32
r68	2	2	3	2	3	1	2	2	2	1	20
total	29	34	35	33	34	33	35	37	38	34	342
VAR	1.193139	0.820069	0.9	0.68	0.8	1.1	1	0.9	0.86	0.96	9.24
k	10	'=COUNTA(B3:K3)'									
var sum	9.235831	'=L73'									
var	58.94529	'=VARP(L4:L71)'									
alpha	0.937017	'=(B75/(B75-1))*(1-B76/B77)'									

Cronbach's alpha	Section B	For Column Deletion									
B6	B7	B8	B9	B10	B11	B12	B13	B14	B15		
r1	24	23	24	24	24	24	23	22	22		
r2	25	23	25	25	24	25	23	23	23		
r3	33	33	33	32	32	32	31	32	33	33	
r4	34	32	32	33	33	32	32	32	32	32	
r5	14	14	14	13	14	14	13	13	13	13	
r6	26	26	25	25	24	25	25	26	25	25	
r7	21	21	22	22	22	21	22	22	21	22	
r8	26	26	26	26	26	26	26	27	26	26	
r9	19	19	17	17	17	17	18	18	19	19	
r10	41	42	41	42	42	41	41	41	41	42	
r11	22	21	21	21	21	23	23	21	21	22	
r12	28	28	27	29	29	29	27	27	28	27	
r13	28	29	29	30	30	27	31	29	28	27	
r14	14	14	13	14	14	15	15	15	15	15	
r15	30	31	30	30	30	31	31	31	31	31	
r16	25	27	27	27	26	27	27	27	27	30	
r17	33	33	32	33	33	32	32	32	32	32	
r18	32	32	32	33	33	32	33	33	32	32	
r19	19	19	19	19	19	19	18	19	19	19	
r20	32	32	31	32	31	31	32	32	31	31	
r21	29	29	29	29	28	28	29	29	29	29	
r22	45	45	45	45	45	45	45	45	45	45	
r23	42	43	42	44	42	42	42	42	42	42	
r24	30	30	29	30	29	29	30	30	30	30	
r25	27	27	27	27	27	27	27	27	27	27	
r26	29	29	29	29	29	29	29	29	28	28	
r27	36	36	36	36	36	36	36	36	36	36	
r28	40	40	40	41	41	40	40	41	41	41	
r29	36	36	36	36	36	36	36	36	36	36	
r30	28	28	27	28	28	28	28	28	28	28	
r31	23	22	22	23	23	23	22	23	22	22	
r32	33	32	31	32	32	31	31	31	31	31	
r33	21	22	22	22	22	21	22	21	21	22	
r34	29	29	28	28	29	29	29	29	29	29	
r35	31	30	30	31	31	30	31	31	30	31	
r36	40	41	40	42	40	40	40	41	40	41	
r37	32	33	33	32	32	32	33	33	32	32	
r38	13	13	13	12	13	13	12	13	12	12	
r39	28	29	29	29	28	29	29	29	29	29	
r40	43	43	43	44	43	43	43	43	44	43	
r41	24	24	22	23	22	22	22	22	22	22	
r42	26	25	26	25	25	25	25	25	25	25	
r43	28	28	28	27	27	27	29	29	28	28	
r44	25	25	24	25	24	24	24	24	24	24	
r45	23	23	22	23	23	22	22	22	23	22	
r46	26	25	26	27	26	25	26	27	27	26	
r47	26	24	24	24	24	24	24	24	25	24	
r48	27	26	26	26	26	26	26	26	26	26	
r49	27	27	27	27	27	27	27	27	27	27	
r50	28	27	28	27	27	28	28	29	29	28	
r51	26	27	26	27	26	26	26	26	26	25	
r52	37	33	32	32	33	32	34	32	34	34	
r53	25	25	25	24	25	26	26	25	25	26	
r54	33	34	33	33	33	34	33	34	33	33	
r55	33	34	33	34	34	33	33	33	33	33	
r56	36	36	36	36	36	36	36	36	36	36	
r57	36	37	35	37	36	36	36	36	36	35	
r58	27	27	27	27	27	27	27	27	27	27	
r59	26	26	26	26	26	26	26	27	26	26	
r60	27	27	27	27	27	27	27	27	27	27	
r61	27	27	27	27	27	27	27	27	27	27	
r62	42	41	40	40	40	41	41	40	40	40	
r63	24	24	29	27	25	26	27	28	25	26	
r64	27	27	27	27	27	27	27	27	27	27	
r65	18	18	18	18	18	18	18	18	18	18	
r66	21	21	20	20	20	20	21	21	22	21	
r67	28	29	29	30	30	27	31	29	28	27	
r68	18	18	17	18	17	19	18	18	18	19	
k	9	9	9	9	9	9	9	9	9	9	
var sum	8.042692	8.415761	8.4	8.56	8.4	8.1	8.24	8.3	8.38	8.28	
var	47.77163	48.87089	47	50.9	49	46	47.7	48	48.1	47.7	
alpha	0.935598	0.931271	0.9	0.94	0.9	0.9	0.93	0.9	0.93	0.93	

Cronbach's alpha	Section C							
C18	C19	C20	C21	C22	C23			
r1	2	3	3	2	4	4		18
r2	2	2	2	2	4	4		16
r3	4	3	3	3	2	2		17
r4	4	4	4	4	3	3		22
r5	2	2	2	1	5	5		17
r6	2	3	3	2	4	4		18
r7	2	2	2	3	3	3		15
r8	2	2	2		3	2		11
r9	3	2	2	3	3	3		16
r10	5	5	5	5	1	1		22
r11	3	3	3	3	3	3		18
r12	4	3	3	3	2	2		17
r13	2	1	1	1	5	1		11
r14	3	3	4	4	2	3		19
r15	3	3	3	3	3	6		21
r16	2	2	2	2	5	4		17
r17	4	3	3	3	5	5		23
r18	4	4	4	4	4	4		24
r19	2	2	3	2	2	3		14
r20	3	3	3	3	3	3		18
r21	4	3	4	4	4	4		23
r22	4	4	3	3	4	5		23
r23	5	5	5	5	5	5		30
r24	4	3	2	2	2	2		15
r25	3	3	3	3	4	4		20
r26	3	3	3	3	3	3		18
r27	4	4	4	4	4	4		24
r28	4	4	4	4	4	4		24
r29	4	4	4	4	4	4		24
r30	3	2	2	2	2	3		14
r31	2	3	3	3	3	4		18
r32	4	4	4	3	3	3		21
r33	2	2	2	3	3	3		15
r34	3	3	3	3	3	6		21
r35	3	3	3	3	3	3		18
r36	5	5	5	5	4	4		28
r37	4	3	4	4	4	4		23
r38	2	2	2	1	5	5		17
r39	2	2	2	2	5	4		17
r40	4	4	3	3	4	5		23
r41	4	3	3	4	4	4		22
r42	3	3	3	3	2	3		17
r43	3	1	2	3	3	3		15
r44	3	3	3	3	3	3		18
r45	3	3	3	3	3	3		18
r46	4	3	2	3	3	2		17
r47	3	3	3	3	3	3		18
r48	3	3	3	3	3	3		18
r49	3	3	3	3	3	3		18
r50	3	3	4	3	2	3		18
r51	3	3	3	3	2	2		16
r52	4	5	4	4	5	5		27
r53	3	2	3	3	4	4		19
r54	4	4	3	3	3	3		20
r55	4	4	4	4	4	4		24
r56	4	4	4	4	2	2		20
r57	5	5	5	4	4	4		27
r58	3	3	3	3	3	3		18
r59	4	4	4	4	4	3		23
r60	3	3	3	3	3	3		18
r61	3	3	3	3	4	4		20
r62	5	2	2	2	5	5		21
r63	4	3	1	4	3	2		17
r64	3	3	3	3	4	4		20
r65	2	2	2	2	4	4		16
r66	3	2	2	3	3	3		16
r67	2	2	2	2	5	1		14
r68	3	3	4	4	2	3		19
total	35	34	34	31	37	36		207
VAR	0.775735	0.822664	0.822664	0.755625	0.948097	1.156358		5.281144
k	6	'=COUNTA(B3:G3)'						
var sum	5.281144	'=H73'						
var	14.11592	'=VARP(H4:H71)'						
alpha	0.751048	'=(B75/(B75-1))*(1-B76/B77)'						

Cronbach's alpha	Section C	For Column Deletion					
C18	C19	C20	C21	C22	C23		
r1	16	15	15	16	14	14	
r2	14	14	14	14	12	12	
r3	13	14	14	14	15	15	
r4	18	18	18	18	19	19	
r5	15	15	15	16	12	12	
r6	16	15	15	16	14	14	
r7	13	13	13	12	12	12	
r8	9	9	9	11	8	9	
r9	13	14	14	13	13	13	
r10	17	17	17	17	21	21	
r11	15	15	15	15	15	15	
r12	13	14	14	14	15	15	
r13	9	10	10	10	6	10	
r14	16	16	15	15	17	16	
r15	18	18	18	18	18	15	
r16	15	15	15	15	12	13	
r17	19	20	20	20	18	18	
r18	20	20	20	20	20	20	
r19	12	12	11	12	12	11	
r20	15	15	15	15	15	15	
r21	19	20	19	19	19	19	
r22	19	19	20	20	19	18	
r23	25	25	25	25	25	25	
r24	11	12	13	13	13	13	
r25	17	17	17	17	16	16	
r26	15	15	15	15	15	15	
r27	20	20	20	20	20	20	
r28	20	20	20	20	20	20	
r29	20	20	20	20	20	20	
r30	11	12	12	12	12	11	
r31	16	15	15	15	15	14	
r32	17	17	17	18	18	18	
r33	13	13	13	12	12	12	
r34	18	18	18	18	18	15	
r35	15	15	15	15	15	15	
r36	23	23	23	23	24	24	
r37	19	20	19	19	19	19	
r38	15	15	15	16	12	12	
r39	15	15	15	15	12	13	
r40	19	19	20	20	19	18	
r41	18	19	19	18	18	18	
r42	14	14	14	14	15	14	
r43	12	14	13	12	12	12	
r44	15	15	15	15	15	15	
r45	15	15	15	15	15	15	
r46	13	14	15	14	14	15	
r47	15	15	15	15	15	15	
r48	15	15	15	15	15	15	
r49	15	15	15	15	15	15	
r50	15	15	14	15	16	15	
r51	13	13	13	13	14	14	
r52	23	22	23	23	22	22	
r53	16	17	16	16	15	15	
r54	16	16	17	17	17	17	
r55	20	20	20	20	20	20	
r56	16	16	16	16	18	18	
r57	22	22	22	23	23	23	
r58	15	15	15	15	15	15	
r59	19	19	19	19	19	20	
r60	15	15	15	15	15	15	
r61	17	17	17	17	16	16	
r62	16	19	19	19	16	16	
r63	13	14	16	13	14	15	
r64	17	17	17	17	16	16	
r65	14	14	14	14	12	12	
r66	13	14	14	13	13	13	
r67	12	12	12	12	9	13	
r68	16	16	15	15	17	16	
k	5	5	5	5	5	5	
var sum	4.505409	4.45848	4.45848	4.525519	4.333047	4.124786	
var	9.921064	9.213668	9.478374	9.684256	12.70934	10.86397	
alpha	0.682343	0.645127	0.662019	0.665866	0.823832	0.775405	

Cronbach's alpha		Section C							
	C1	C2	C3	C4	C5	C6	C12		
r1	2	2	2	3	2	4	3	2	18
r2	2	2	1	2	2	2	3	2	14
r3	2	4	4	4	3	3	3	5	24
r4	4	4	4	2	4	4	3	4	25
r5	2	2	2	2	4	4	4	2	20
r6	2	3	2	2	3	3	3	1	17
r7	2	2	3	3	3	3	3	3	19
r8	4	4	4	3	2	2	3	4	22
r9	2	2	1	1	1	1	3	2	12
r10	5	5	4	5	5	5	5	5	34
r11	3	3	3	3	1	2	2	2	16
r12	4	4	3	3	3	3	3	4	24
r13	3	4	5	5	5	5	5	3	30
r14	1	1	1	3	3	3	4	2	12
r15	4	4	4	4	4	4	3	3	26
r16	4	4	5	5	3	3	5	1	25
r17	3	4	4	4	4	4	4	4	27
r18	5	4	4	4	4	4	2	3	26
r19	3	2	2	2	3	4	4	4	22
r20	4	4	4	4	4	4	4	3	27
r21	4	4	4	4	5	5	4	4	30
r22	5	4	4	4	4	5	3	4	29
r23	3	3	3	3	3	3	3	3	21
r24	3	2	3	3	4	4	4	2	22
r25	3	3	3	3	3	3	4	3	22
r26	3	3	4	3	3	4	3	3	23
r27	4	4	5	4	4	4	4	4	29
r28	5	5	4	4	4	4	5	5	32
r29	4	4	4	4	4	4	4	4	28
r30	3	3	3	3	4	4	4	3	24
r31	2	3	3	2	2	4	3	2	19
r32	3	3	2	2	4	3	3	4	22
r33	2	2	2	3	3	3	3	3	18
r34	4	4	4	4	4	3	3	3	25
r35	4	3	4	4	4	4	4	3	26
r36	3	3	3	3	3	3	3	3	21
r37	4	4	3	3	3	4	4	4	26
r38	2	2	2	2	3	3	4	2	18
r39	4	4	4	4	3	3	4	1	23
r40	5	4	4	4	3	4	3	4	27
r41	3	4	3	3	4	4	3	3	24
r42	3	3	4	4	3	3	2	3	21
r43	3	2	4	4	4	5	5	2	25
r44	2	2	3	3	3	3	3	3	19
r45	2	2	3	3	3	3	3	3	19
r46	3	3	3	3	3	3	4	2	21
r47	2	2	2	2	3	3	3	3	18
r48	2	2	2	2	3	3	3	3	18
r49	2	3	2	2	3	3	3	3	19
r50	4	4	4	4	3	4	3	3	25
r51	3	3	2	2	3	3	2	2	18
r52	5	4	4	4	4	4	4	5	30
r53	2	3	3	3	2	4	3	2	19
r54	3	3	2	2	4	4	5	3	24
r55	4	3	4	4	5	5	5	4	30
r56	4	4	4	4	4	4	3	4	27
r57	5	4	4	4	5	5	5	4	32
r58	3	3	2	3	3	3	3	3	20
r59	3	3	4	4	4	4	3	3	24
r60	3	4	4	4	4	4	4	3	26
r61	3	3	3	3	3	3	3	3	21
r62	5	5	4	4	5	5	4	4	28
r63	4	4	4	4	4	4	3	4	27
r64	3	3	3	3	3	4	3	3	22
r65	2	2	2	2	4	4	4	2	20
r66	2	2	2	2	2	1	3	2	14
r67	3	4	5	5	5	5	5	3	30
r68	2	2	2	3	3	4	4	2	15
total	34	36	32	33	36	38	36	36	245
VAR	1.027682	0.880623	0.948746	0.801038	0.784206	0.632137	0.894631	5.969062	
k	7	'=COUNTA(B3:H3)'							
var sum	5.969062	'=I73'							
var	24.30688	'=VARP(I4:I71)'							
alpha	0.880167	'=(B75/(B75-1))*(1-B76/B77)'							

Cronbach's alpha	Section C	For Column Deletion					
C1	C2	C3	C4	C5	C6	C12	
r1	16	16	15	16	14	15	16
r2	12	13	12	12	12	11	12
r3	22	20	20	21	21	21	19
r4	21	21	23	21	21	22	21
r5	18	18	18	16	16	16	18
r6	15	14	15	14	14	14	16
r7	17	17	16	16	16	16	16
r8	18	18	19	20	20	19	18
r9	10	10	11	11	11	9	10
r10	29	29	30	29	29	29	29
r11	13	13	13	15	14	14	14
r12	20	20	21	21	21	21	20
r13	27	26	25	25	25	25	27
r14	11	11	11	9	12	8	10
r15	22	22	22	22	22	23	23
r16	21	21	20	22	22	20	24
r17	24	23	23	23	23	23	23
r18	21	22	22	22	22	24	23
r19	19	20	20	19	18	18	18
r20	23	23	23	23	23	23	24
r21	26	26	26	25	25	26	26
r22	24	25	25	25	24	26	25
r23	18	18	18	18	18	18	18
r24	19	20	19	18	18	18	20
r25	19	19	19	19	19	18	19
r26	20	20	19	20	19	20	20
r27	25	25	24	25	25	25	25
r28	27	27	28	28	28	27	27
r29	24	24	24	24	24	24	24
r30	21	21	21	20	20	20	21
r31	17	16	16	17	15	16	17
r32	19	19	20	18	19	19	18
r33	16	16	16	15	15	15	15
r34	21	21	21	21	22	22	22
r35	22	23	22	22	22	22	23
r36	18	18	18	18	18	18	18
r37	22	22	23	23	22	22	22
r38	16	16	16	15	15	14	16
r39	19	19	19	20	20	19	22
r40	22	23	23	24	23	24	23
r41	21	20	21	20	20	21	21
r42	18	18	17	18	18	19	18
r43	22	23	21	21	20	20	23
r44	17	17	16	16	16	16	16
r45	17	17	16	16	16	16	16
r46	18	18	18	18	18	17	19
r47	16	16	16	15	15	15	15
r48	16	16	16	15	15	15	15
r49	17	16	17	16	16	16	16
r50	21	21	21	22	21	22	22
r51	15	15	16	15	15	16	16
r52	25	26	26	26	26	26	25
r53	17	16	16	17	15	16	17
r54	21	21	22	20	20	19	21
r55	26	27	26	25	25	25	26
r56	23	23	23	23	23	24	23
r57	27	28	28	27	27	27	28
r58	17	17	18	17	17	17	17
r59	21	21	20	20	20	21	21
r60	23	22	22	22	22	22	23
r61	18	18	18	18	18	18	18
r62	23	23	24	23	23	24	28
r63	23	23	23	23	23	24	23
r64	19	19	19	19	18	19	19
r65	18	18	18	16	16	16	18
r66	12	12	12	12	13	11	12
r67	27	26	25	25	25	25	27
r68	13	13	13	12	15	11	13
k	6	6	6	6	6	6	6
var sum	4.94138	5.088439	5.020316	5.168024	5.184856	5.336925	5.074431
var	17.05428	17.61311	17.56228	18.10099	17.04217	20.95242	19.64619
alpha	0.852307	0.853319	0.856971	0.857387	0.834916	0.89434	0.890051

Cronbach's alpha	Section D									
	D1	D2	D3	D4	D5	D6	D7	D8		
r1	3	3	2	3	3	2	3	3	3	22
r2	2	2	2	3	3	3	3	3	3	21
r3	4	4	4	3	4	4	3	4	3	30
r4	4	4	4	3	3	3	3	3	3	27
r5	3	3	3	3	2	2	2	2	2	20
r6	2	1	2	2	2	2	2	2	1	14
r7	2	3	3	3	3	3	3	3	3	23
r8	2	4	4	2	3	3	3	3	3	24
r9	3	3	3	2	2	2	2	2	3	20
r10	5	5	5	5	5	5	5	5	5	40
r11	3	1	1	1	1	1	1	2	2	12
r12	3	3	3	3	3	3	4	4	4	27
r13	1	3	1	1	1	1	3	3	5	18
r14	4	2	3	4	4	4	2	2	4	25
r15	3	3	4	4	4	4	4	4	4	30
r16	4	4	4				4	4	5	25
r17	3	3	2	4	4	4	4	4	4	28
r18	5	4	3	4	4	4	4	4	4	32
r19	4	3	2	3	3	3	4	4	4	27
r20	3	4	3	3	3	3	5	4	5	30
r21	3	3	3	4	4	3	3	3	4	27
r22	5	1	1	2	2	2	2	2	2	17
r23	3	3	3	3	3	3	3	3	3	24
r24	4	2	2	2	2	3	3	3	4	22
r25	3	3	3	3	3	3	3	3	3	24
r26	3	3	3	3	3	3	3	3	4	25
r27	3	4	4	4	4	4	4	4	5	32
r28	3	4	4	4	4	4	4	4	5	32
r29	4	4	3	4	4	4	4	4	5	32
r30	4	3	4	4	4	4	4	4	5	32
r31	3	3	2	3	3	2	3	3	3	22
r32	4	4	4	3	3	3	3	3	3	27
r33	2	2	3	3	3	3	3	3	3	22
r34	3	3	4	4	4	4	4	4	4	30
r35	3	4	3	3	3	5	4	4	4	29
r36	3	3	3	3	3	3	3	3	3	24
r37	4	4	3	4	4	3	4	5	31	
r38	3	3	2	3	2	2	2	2	2	19
r39	4	4	4	3	3	4	4	4	4	30
r40	4	1	1	2	2	2	2	2	2	16
r41	4	4	4	3	3	3	3	3	5	29
r42	3	2	3	4	3	4	2	1	22	
r43	3	3	3	4	4	4	4	5	30	
r44	3	3	2	2	3	3	3	4	23	
r45	3	3	3	3	3	3	3	3	3	24
r46	2	1	1	1	1	2	1	2	11	
r47	2	3	2	3	3	3	3	3	3	22
r48	2	3	2	3	3	3	3	3	3	22
r49	3	3	2	3	3	3	3	3	4	24
r50	3	4	3	4	3	4	3	3	3	27
r51	4	4	3	4	4	3	4	5	31	
r52	3	3	3	3	3	3	3	3	3	24
r53	2	2	3	2	2	3	2	3	3	19
r54	2	1	1	3	3	3	2	2	2	17
r55	3	3	3	3	3	4	4	5	28	
r56	4	4	4	4	4	4	4	4	4	32
r57	3	4	3	4	4	4	4	5	31	
r58	3	3	2	3	3	3	3	3	3	23
r59	2	4	2	3	3	3	3	3	4	24
r60	2	3	2	3	3	3	3	3	4	23
r61	3	3	3	3	3	3	3	3	3	24
r62	3	4	2	4	4	3	1	4	25	
r63	4	4	4	3	3	4	4	5	31	
r64	3	3	3	3	3	3	3	4	25	
r65	3	3	3	3	2	2	2	2	2	20
r66	3	3	3	2	2	2	2	3	20	
r67	2	3	2	1	2	3	3	5	21	
r68	4	2	3	4	4	2	2	4	25	
total	36	36	36	33	34	34	35	36	280	
VAR	0.66263	0.820069	0.831099	0.712854	0.669637	0.69442	0.68577	1.121756	6.198234	
k	8	'=COUNTA(B3:I3)'								
var sum	6.198234	'=J73'								
var	28.25324	'=VARP(J4:J71)'								
alpha	0.892136	'=(B75/(B75-1))*(1-B76/B77)'								

Cronbach's alpha	Section D							
	D1	D2	D3	D4	D5	D6	D7	D8
r1	19	19	20	19	19	20	19	19
r2	19	19	19	18	18	18	18	18
r3	26	26	26	27	26	26	27	26
r4	23	23	23	24	24	24	24	24
r5	17	17	17	17	18	18	18	18
r6	12	13	12	12	12	12	12	13
r7	21	20	20	20	20	20	20	20
r8	22	20	20	22	21	21	21	21
r9	17	17	17	18	18	18	18	17
r10	35	35	35	35	35	35	35	35
r11	9	11	11	11	11	11	10	10
r12	24	24	24	24	24	23	23	23
r13	17	15	17	17	17	15	15	13
r14	21	23	22	21	21	23	23	21
r15	27	27	26	26	26	26	26	26
r16	21	21	21	25	25	21	21	20
r17	25	25	26	24	24	24	24	24
r18	27	28	29	28	28	28	28	28
r19	23	24	25	24	24	23	23	23
r20	27	26	27	27	27	25	26	25
r21	24	24	24	23	23	24	24	23
r22	12	16	16	15	15	15	15	15
r23	21	21	21	21	21	21	21	21
r24	18	20	20	20	20	19	19	18
r25	21	21	21	21	21	21	21	21
r26	22	22	22	22	22	22	22	21
r27	29	28	28	28	28	28	28	27
r28	29	28	28	28	28	28	28	27
r29	28	28	29	28	28	28	28	27
r30	28	29	28	28	28	28	28	27
r31	19	19	20	19	19	20	19	19
r32	23	23	23	24	24	24	24	24
r33	20	20	19	19	19	19	19	19
r34	27	27	26	26	26	26	26	26
r35	26	25	26	26	26	24	25	25
r36	21	21	21	21	21	21	21	21
r37	27	27	28	27	27	28	27	26
r38	16	16	17	16	17	17	17	17
r39	26	26	26	27	27	26	26	26
r40	12	15	15	14	14	14	14	14
r41	25	25	25	26	26	26	26	24
r42	19	20	19	18	19	18	20	21
r43	27	27	27	26	26	26	26	25
r44	20	20	21	21	20	20	20	19
r45	21	21	21	21	21	21	21	21
r46	9	10	10	10	10	9	10	9
r47	20	19	20	19	19	19	19	19
r48	20	19	20	19	19	19	19	19
r49	21	21	22	21	21	21	21	20
r50	24	23	24	23	24	23	24	24
r51	27	27	28	27	27	28	27	26
r52	21	21	21	21	21	21	21	21
r53	17	17	16	17	17	16	17	16
r54	15	16	16	14	14	14	15	15
r55	25	25	25	25	25	24	24	23
r56	28	28	28	28	28	28	28	28
r57	28	27	28	27	27	27	27	26
r58	20	20	21	20	20	20	20	20
r59	22	20	22	21	21	21	21	20
r60	21	20	21	20	20	20	20	19
r61	21	21	21	21	21	21	21	21
r62	22	21	23	21	21	22	24	21
r63	27	27	27	28	28	27	27	26
r64	22	22	22	22	22	22	22	21
r65	17	17	17	17	18	18	18	18
r66	17	17	17	18	18	18	18	17
r67	19	18	19	20	19	18	18	16
r68	21	23	22	21	21	23	23	21
k	7	7	7	7	7	7	7	7
var sum	5.535605	5.378165	5.367136	5.485381	5.528598	5.503814	5.512465	5.076478
var	24.43663	21.37781	21.73443	22.17474	21.69442	21.95415	21.65052	20.94464
alpha	0.902383	0.87316	0.878568	0.878068	0.869354	0.874188	0.86962	0.883895

Cronbach's alpha	Section E									
	E1	E2	E3	E4	E5	E6	E7	E8		
r1	2		2	2	3	2	2	2	2	17
r2	3		3	3	3	3	3	3	3	24
r3	4		4	4	4	4	4	4	4	32
r4	4		4	4	4	4	4	4	4	32
r5	2		2	2	2	2	2	2	2	16
r6	3		3	2	3	2	3	2	2	20
r7	3		3	2	2	2	2	2	2	18
r8	3		3	3	2	2	2	2	2	19
r9	2		2	2	2	3	3	3	2	19
r10	5		5	4	5	5	4	4	4	36
r11	2		2	3	3	3	3	2	1	19
r12	3		3	3	4	4	4	4	4	29
r13	5		5	2	3	3	4	5	1	28
r14	4		4	4	4	4	4	2	1	27
r15	3		3	3	3	3	3	3	3	24
r16	5		4	3	4	3	3	4	4	30
r17	5		5	5	5	5	5	5	5	40
r18	3		4	4	4	4	4	4	4	31
r19	4		4	4	4	4	4	3	3	30
r20	4		4	4	4	4	4	4	4	32
r21	3		4	4	3	4	4	4	4	30
r22	3		3	3	3	3	3	4	3	25
r23	4		4	4	3	3	3	5	5	31
r24	4		4	2	3	2	2	2	2	21
r25	4		3	3	3	3	2	3	3	24
r26	4		4	3	3	3	3	3	3	26
r27	4		4	4	4	4	4	4	4	32
r28	4		4	4	4	4	4	4	4	32
r29	5		5	3	5	3	3	5	4	33
r30	5		4	3	5	3	3	4	3	30
r31	2		2	2	3	2	2	2	2	17
r32	4		4	4	4	4	4	4	4	32
r33	3		3	2	2	3	2	2	2	19
r34	3		3	3	3	3	3	3	3	24
r35	4		4	4	4	4	4	4	4	32
r36	4		3	4	3	3	3	5	5	30
r37	4		5	3	4	3	3	5	4	31
r38	2		2	2	2	2	2	2	2	16
r39	4		4	3	4	3	3	3	4	28
r40	3		3	3	3	3	4	4	3	26
r41	4		4	4	4	4	4	3	3	30
r42	3		3	3	3	3	2	4	4	25
r43	3		3	3	3	3	3	5	4	27
r44	3		3	2	4	3	3	2	2	22
r45	3		3	2	4	3	3	2	2	22
r46	3		3	3	2	3	3	4	4	25
r47	3		3	3	3	3	3	3	2	23
r48	3		3	3	3	3	3	2	2	22
r49	3		3	3	3	3	3	2	2	22
r50	3		4	4	4	3	3	3	4	28
r51	4		4	4	2	3	3	4	4	28
r52	4		4	3	4	4	4	4	4	31
r53	2		2	2	3	3	3	3	2	20
r54	2		3	3	4	3	2	3	3	23
r55	4		4	3	3	3	4	4	4	29
r56	4		4	4	4	4	4	4	4	32
r57	5		5	5	5	5	5	5	4	39
r58	3		3	2	3	3	3	2	2	21
r59	3		3	4	3	3	3	3	2	24
r60	2		3	2	2	3	3	3	2	20
r61	3		3	3	3	3	3	3	3	24
r62	4		4	4	5	4	4	5	5	35
r63	5		5	4	3	3	3	5	5	33
r64	4		4	3	3	3	3	3	3	26
r65	2		2	2	2	2	2	2	2	16
r66	2		2	2	2	3	3	3	2	19
r67	5		5	3	3	3	4	5	1	29
r68	4		4	4	4	4	4	2	2	28
total	36	36	34	37	36	36	36	34	32	281
VAR	0.836289	0.749784	0.673659	0.723832	0.516436	0.57526	1.085424	1.202422	6.363106	
k	8	'=COUNTA(B3:I3)'								
var sum	6.363106	'=J73'								
var	32.51103	'=VARP(J4:J71)'								
alpha	0.919175	'=(B75/(B75-1))*(1-B76/B77)'								

Cronbach's alpha	Section E		For Column Deletion						
	E1	E2	E3	E4	E5	E6	E7	E8	
r1	15	15	15	14	15	15	15	15	15
r2	21	21	21	21	21	21	21	21	21
r3	28	28	28	28	28	28	28	28	28
r4	28	28	28	28	28	28	28	28	28
r5	14	14	14	14	14	14	14	14	14
r6	17	17	18	17	18	17	18	18	18
r7	15	15	16	16	16	16	16	16	16
r8	16	16	16	17	17	17	17	17	17
r9	17	17	17	17	16	16	16	16	17
r10	31	31	32	31	31	32	32	32	32
r11	17	17	16	16	16	16	17	18	18
r12	26	26	26	25	25	25	25	25	25
r13	23	23	26	25	25	24	23	27	27
r14	23	23	23	23	23	23	25	26	26
r15	21	21	21	21	21	21	21	21	21
r16	25	26	27	26	27	27	26	26	26
r17	35	35	35	35	35	35	35	35	35
r18	28	27	27	27	27	27	27	27	27
r19	26	26	26	26	26	26	27	27	27
r20	28	28	28	28	28	28	28	28	28
r21	27	26	26	27	26	26	26	26	26
r22	22	22	22	22	22	22	22	21	22
r23	27	27	27	28	28	28	26	26	26
r24	17	17	19	18	19	19	19	19	19
r25	20	21	21	21	21	22	21	21	21
r26	22	22	23	23	23	23	23	23	23
r27	28	28	28	28	28	28	28	28	28
r28	28	28	28	28	28	28	28	28	28
r29	28	28	30	28	30	30	28	29	29
r30	25	26	27	25	27	27	26	27	27
r31	15	15	15	14	15	15	15	15	15
r32	28	28	28	28	28	28	28	28	28
r33	16	16	17	17	16	17	17	17	17
r34	21	21	21	21	21	21	21	21	21
r35	28	28	28	28	28	28	28	28	28
r36	26	27	26	27	27	27	25	25	25
r37	27	26	28	27	28	28	26	27	27
r38	14	14	14	14	14	14	14	14	14
r39	24	24	25	24	25	25	25	24	24
r40	23	23	23	23	23	22	22	23	23
r41	26	26	26	26	26	26	27	27	27
r42	22	22	22	22	22	23	21	21	21
r43	24	24	24	24	24	24	22	23	23
r44	19	19	20	18	19	19	20	20	20
r45	19	19	20	18	19	19	20	20	20
r46	22	22	22	23	22	22	21	21	21
r47	20	20	20	20	20	20	20	21	21
r48	19	19	19	19	19	19	20	20	20
r49	19	19	19	19	19	19	20	20	20
r50	25	24	24	24	25	25	25	24	24
r51	24	24	24	26	25	25	24	24	24
r52	27	27	28	27	27	27	27	27	27
r53	18	18	18	17	17	17	17	18	18
r54	21	20	20	19	20	21	20	20	20
r55	25	25	26	26	26	25	25	25	25
r56	28	28	28	28	28	28	28	28	28
r57	34	34	34	34	34	34	34	35	35
r58	18	18	19	18	18	18	19	19	19
r59	21	21	20	21	21	21	21	22	22
r60	18	17	18	18	17	17	17	18	18
r61	21	21	21	21	21	21	21	21	21
r62	31	31	31	30	31	31	30	30	30
r63	28	28	29	30	30	30	28	28	28
r64	22	22	23	23	23	23	23	23	23
r65	14	14	14	14	14	14	14	14	14
r66	17	17	17	17	16	16	16	17	17
r67	24	24	26	26	26	25	24	28	28
r68	24	24	24	24	24	24	26	26	26
k	7	7	7	7	7	7	7	7	7
var sum	5.526817	5.613322	5.689446	5.639273	5.84667	5.787846	5.277682	5.160683	
var	24.78114	24.79758	25.30969	25.78633	26.27747	26.18923	24.04498	24.24286	
alpha	0.906471	0.902573	0.904408	0.911526	0.907086	0.908832	0.910593	0.918313	