

UNIVERSITY OF KWAZULU-NATAL

**Perceptions on factors leading to compliance
on an Operations Improvement System at
Sasol Wax Durban**

By

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DECLARATION

I, Nontobeko V. Myeni, declare that:

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ABSTRACT

The business landscape constantly faces economic, political and environmental challenges, however a business' operational system plays an integral part in optimising business functionality and leveraging. Sasol Wax Durban implemented an operational improvement framework in order to standardise and streamline their operation in line with other divisions, after over a year of implementation, the framework was not yet fully functioning. The purpose of this exploratory study was to investigate the perception of factors leading to compliance with the system. The theories accessed were behavioural, system design and system management. The study adopted a qualitative research approach and purposive sampling technique. Twelve of Sasol Wax's Production, Planning and Maintenance Supervisors participated through semi-structured, in-depth interviews, which were audio recorded. The data collected was analysed using thematic analysis. The key findings were that the employees' lack of compliance was contributed by system's design and system's management challenges. The finding relating to the system design was a lack of ease of use, while the finding relating to system management was lack of training, communication and leadership. The findings further expand on the issue of training, in that it must be rolled out formally to employees below supervisory level and preferably everyone on site. The study concludes by offering recommendations, i.e. all supervisors must be retrained together with employees below supervisory level, also the framework must be revamped to accommodate the uniqueness of the satellite operation while simplifying it, and leadership must show more visibility in support and enforcing 100% compliance to the framework.

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CHAPTER 1: INTRODUCTION TO THE RESEARCH

1.1 Introduction

The business environment has been facing uncertainty, volatility, complexity and ambiguity in recent times. Due to this uncertainty, companies tend to shy away from long-term planning in favour of shorter-term goals (Conner, 2013). Volatility is brought about by a decrease in commodity prices, unstable currencies, political uncertainty and the speed of technological advancement. The uncertainty requires a certain level of people and business systems agility. An agile business operational tool is vital for business management to meet these challenges, which is why one was introduced at Sasol Wax's manufacturing plant (Sasol Wax is a part of Sasol Group and is a satellite operation plant situated in Durban).

Business process management achieves value creation through different mechanisms, efficiency gains, compliance enforcement, networking with business partners, or integration and agility. An operational system is credited with improving profits, reducing operational costs, growth and efficiency, productivity and quality of work life (Bolboli & Reiche, 2013). Furthermore, the operational system enables the optimal handling of safety and environment procedures. These attributes are best seen when a system is used effectively.

This research assignment sought to identify the factors leading to compliance with the system introduced at Sasol Wax, by acquiring the perspectives from first line managers. This research study's primary goal is to explore, investigate, gain insight and develop possible solutions to the problem stated above. The study's secondary goal is to inform managers of essential groundwork that is required before taking up any operational improvement projects. This chapter provides the background to the topic, explains the motivation for the study, defines the research questions, and introduces the study's limitations. The chapter will end with an outline of all the chapters of this report dissertation.

1.2 Motivation for the study

The motivation for this study came from the researcher's own experience observing the unsuccessful functioning of business operational improvement systems. The researcher has had personal exposure in both a chemical company situated in

Richards Bay and a beverage firm in Durban. Both firms' fundamental aim was to introduce a system that would bring about operational excellence, however the operational excellence envisioned did not reach the desired heights or investment returns. A similar trend was observed at Sasol Wax's site, thus this presented itself as a business problem deserving of investigation.

1.2.1 Background

The Sasol Wax site in Wentworth, Durban, was suitable as the object of this study, as the operating framework was introduced over a year ago and the site was easily accessible to the researcher. The Sasol system, which is referred to as the framework, is a business operational management system. It was introduced on site during a tough global market conditions due to a need to reduce operational costs and improve performance. Blasini and Leist (2013) stated that companies constantly look to increase the efficiency and effectiveness of their business, yet the functioning of their operational systems is reliant on system excellence and the operations workforce. The operational system at Sasol Wax was designed to streamline plant activities, processes, tasks and reporting. Individuals are the cornerstone to ensuring system activities are completed precisely and correctly, as defined by the operational system.

Bandara, Gable, and Rosemann (2005) conducted a study to identify issues regarding a lack of governance and buy-in by employees in business process management initiatives. Eikebrokk, Iden, Olsen, and Opdahl (2011) developed on Bandara et al. (2005) work in order to determine which forces influence business process initiatives, including adoption and use. According to Eikebrokk et al. (2011), individuals and socio-political play a significant role, and this study builds on their findings. This research mainly focused on individuals to get their perspective on compliance matters. More studies are thus needed on the forces that influence process management systems' activities (Eikebrokk et al., 2011). The study seeks to identify and provide a detailed, in-depth understanding of the reasons for this compliance gap. It also highlights factors of compliance which led up to this gap and offers suggestions that when addressed, may improve compliance thereby improving system success.

1.3 Focus of this study

This study focused on determining the factors that may explain individuals' compliance with their operational system. The focus was on first line managers (supervisors) as sources of information, who were represented from three disciplines within the firm, viz. production, planning and maintenance. Looking at Figure 1.1 below, one can see that 74% of information is available within this selected group of employees (Albert, 2014). The lower managers in the hierarchy are in close proximity to the utilisation of system, hence any challenges or ease experienced by first line managers are in direct control of the people on the shop floor (Collyear, 1976). The study could not focus on shop floor workers to gain access to 100% of the information, as the system was not rolled out to this group. The iceberg of ignorance displays the relation to this study and targeted group in this company.

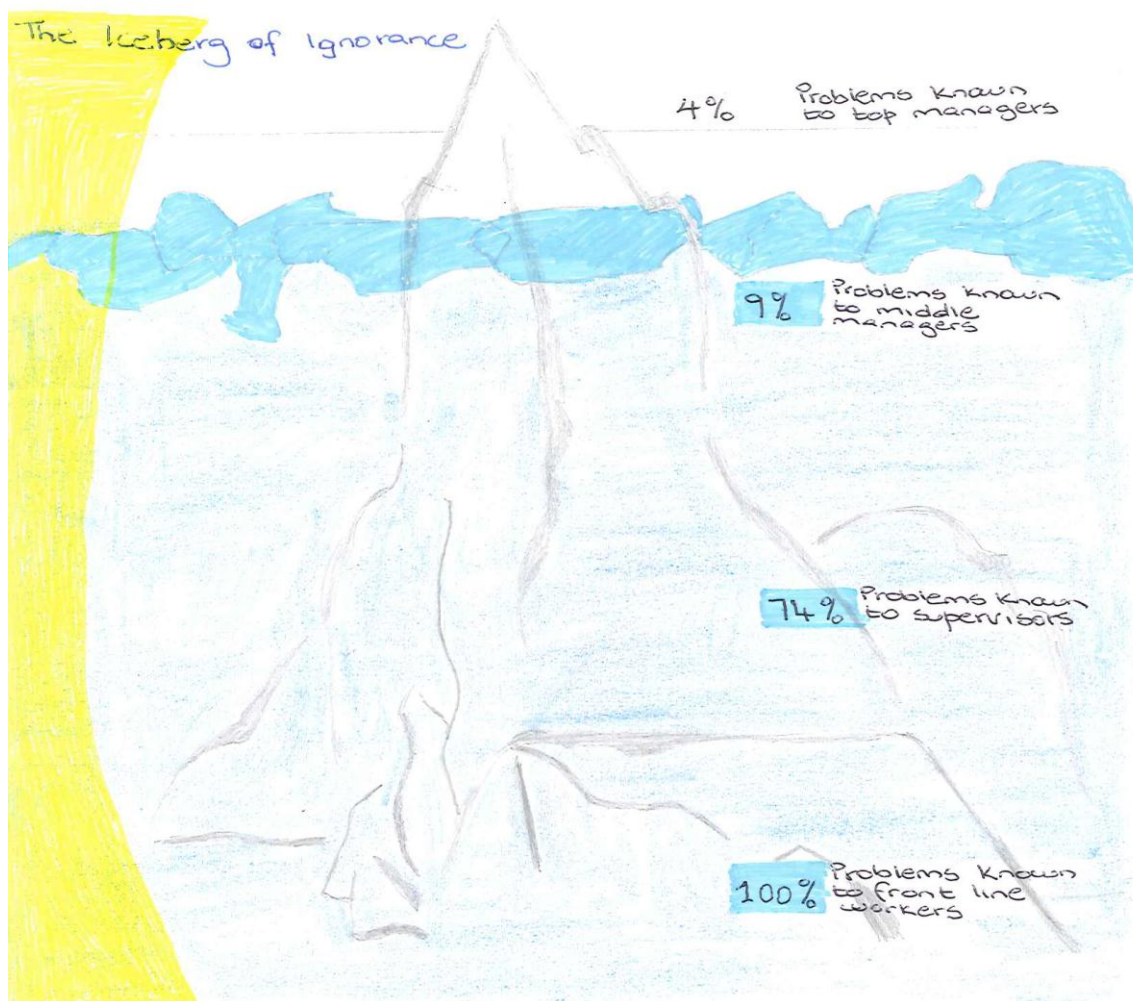


Figure 1.1 The Iceberg of Ignorance

Source: Adapted from Albert (2014: p. 1)

1.4 Problem statement

Despite the criticality of process compliance, the factors that influence it remain largely unaddressed in the organisational and information systems literature (Nicholas, Danail, & Betty, 2010). The full value of a good system is best revealed by its effective use, and how users comply to operational system guidelines becomes a differentiator in a competitive business environment.

Sasol has reported a staggering Capex loss of approximately \$11.5bn this financial year (Creamer, 2016), yet the business continues to profess that despite this loss, it will maintain its gearing target and its vision. This vision is to grow profitably and sustainably while delivering value to all stakeholders (Sasol, 2015). The company is rated in the top 10 best employers in the country (Harrison, 2014).

Given this background, it is of great importance that the investment into a framework shows value. The introduction of the framework projected that savings would be found mostly in operations and procurement, through standardising the group in a uniform system, good asset management and best utilisation of human capital. The system was founded on continuous improvement principles of Plan, Do, Correct and Act (PDCA) (Liker & Franz, 2011). Activities are to be executed as defined by the system on each step of PDCA cyclic management, and each activity step has an effect on the next and thereby the overall effect. This principle of cyclical actions ensures business and individual growth continuity, yet observation by the researcher highlighted compliance gaps in some areas of the framework.

This study aimed to identify and define the factors that cause this gap, in order to inform business management of the source of the problems in their operational systems and to offer solutions where possible. The main stakeholders in this regard are investors, as company growth increases their value. Other stakeholders are employees, as a company grows with its people. Operational systems streamline every area of business including safety measures, a subject of top priority at Sasol. The final stakeholders are members of the community of Wentworth Durban, where Sasol Wax is neighbouring.

1.5 Aim and research questions

The aim of the study was to investigate the perceptions around the factors that lead to compliance with operations improvement systems. This research was underpinned by the following questions:

- What are the factors that contribute to compliance of the Operations Improvement System in Sasol Wax Durban?
- What are the benefits that employees derive from compliance of the Operations Improvement System in Sasol Wax Durban?
- How can compliance levels of the Operations Improvement System in Sasol Wax Durban be improved?

1.6 Study objectives

The research sought to achieve the following objectives:

- To identify the factors that contributes to compliance of the Operations Improvement System in Sasol Wax Durban.
- To ascertain the benefits that employees derive from compliance of the Operations Improvement System in Sasol Wax Durban.
- To determine how compliance levels of the Operations Improvement System in Sasol Wax Durban can be improved.

1.7 Research methodology

A qualitative research approach was used for this study. This is applied research as its primary objective was to address a practical problem (Rose, Spinks, & Canhoto, 2015). The study was focused on generating theories based on participant perspectives and to learn supervisors' views on the subject at hand. Qualitative studies use interviews, focus groups and observations as research strategies (Sekaran & Bougie, 2013). Data were collected from 12 Sasol supervisors through face-to-face semi-structured interviews, and thematic analysis was done on the data collected. The classification of this research purpose is exploratory.

1.8 Limitations of the study

The operational framework under study is used by all other Sasol divisions, yet this research was only limited to the Durban wax satellite operation. This limited the study from getting wider and more diverse views. In addition, the framework was not formally rolled out to employees below supervisor level, therefore the segment of employees with deeper insight was not included in the sampling frame. The study aimed at getting information from three disciplines - Production, Planning and Maintenance. Other disciplines within Sasol Wax were not included.

1.9 Structure of the dissertation

Chapter 2: Literature review

The chapter presents a critical review of the literature that relates to this research topic, in that the work of previous scholars will be evaluated and interrogated. The section will identify the theories relevant to this topic, and the perspective of this research within the body of existing literature will be described.

Chapter 3: Research methodology

The research methodology section will describe the research design for this project. It will provide and justify the research methods and techniques chosen in conducting data collection and analysis, and finally it will evaluate the credibility of this research and address ethical issues.

Chapter 4: Presentation of results

The section will present the thematically analysed results from the data collected, which will be supported by applicable extracts from the raw data.

Chapter 5: Discussion

This section presents a discussion of the analysed data to arrive at findings. Data will be compared and contrasted with the researcher's view point and existing literature.

Chapter 6: Conclusion and recommendations

This is the last chapter of the report, where conclusions are drawn and recommendations are presented.

1.10 Conclusion

This chapter began by sharing the current business landscape in order to provide some background to the importance of attaining business excellence through the use of operational improvement systems. The motivation for the study was shared and the problem statement describing the source of problems was defined. The research questions and objectives underpinning this study were also laid out, as were the limitations for this study. The chapter concluded by explaining what is contained within each chapter of this report. The next chapter reviews the literature on systems compliance.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Operations improvement initiatives have been in existence since the beginning of the industrial era. The improvement initiatives, methods or systems' fundamental aim is to improve performance. This chapter reviews the existing literature on the subject of compliance with operations systems. The purpose of the chapter is to reflect this research study within the wider subject context. This is done through surveying the literature and critically evaluating it by drawing similarities and differences with other authors work. This research work follows the case of Sasol Wax's new operating framework, which is a type of business operational management tool. The research questions are directly informed by this literature review (Saunders, Lewis, & Thornhill, 2009).

The review encompasses two aspects of the literature: system design effects on compliance and human behavioural effects on compliance. This chapter will further expand on compliance with the operating system and the enablement factors around it. The chapter begins by defining the compliance concept, which is followed by a description of systems designs, its application and management. The literature review forms the basis for the development of the theoretical background for this inductive research study.

2.2 What is meant by compliance

Compliance in this context is referred to as conformance to specification, i.e. the manner of doing what is expected in the way that is expected. Etienne (2011) said compliance behaviour is not only planned but is also automatic. Compliance in this regard is described as following a set of prescribed guidelines at all times by everyone. Individuals may "accept" system but still engage in activities outside of the system that are not in line with the prescribed business process (Nicholas et al., 2010).

2.3 System foundation

The basis of process re-engineering rests upon system design and system management, the two are equally important for any operational system's success (Sikdar, 2014). Nicholas et al. (2010) defined the factors contributing to overall

compliance to a system as ease of use and its usefulness. System design elements are workflow, practicality, all-encompassing (Bolboli & Reiche, 2013). System management elements are leadership, communication, training and employee empowerment, which are structural factors of success (Bolboli & Reiche, 2013). The system design and management together create the new business process (Sikdar, 2014).

2.3.1 Basis of design

Sasol's framework is a typical manufacturing business excellence system, which was created to translate the organisation's strategy to all areas of the business. The system was projected to deliver the organisation's operational objectives, sustainability, and business excellence through system standardisation. The system is rooted in the concepts of standards setting, planning, measurement, and improvement, which is similar to Deming's cycle (Liker & Franz, 2011).

- | | |
|--------|-------------------------------------------------------------------------|
| Step 1 | Plan – Planning activities for each discipline and task co-ordination |
| Step 2 | Do – Execute the planned activities as guided by the plan |
| Step 3 | Check – Hold a meeting to check progress and task completion |
| Step 4 | Act – Correct and learn if there was discrepancy, then repeat the cycle |

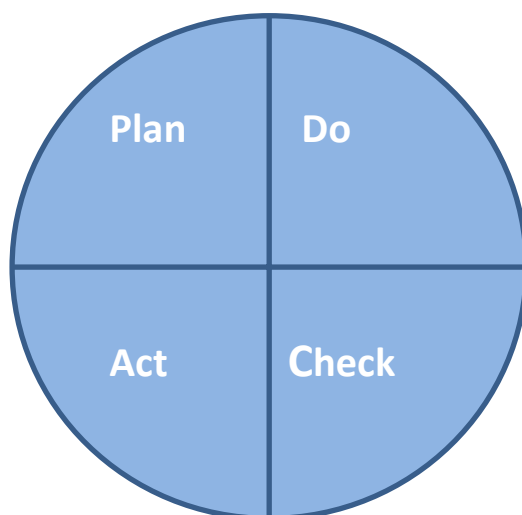


Figure 2.1 The Deming's Cycle

Source: Adapted from Liker and Franz (2011) p. 27

2.4 System design

Bolboli and Reiche (2013) described system design elements in the following manner: the first element of system design is workflow, which is defined as a sequence of arranged business activities enabled by organisational resources to process products or services into a final output. The second element is practicality. This defines the operability of the system with regards to the organisation's business model. Practicality establishes the linkage of the system's effect to the organisational strategy and vision. The third element of system design is that, it must encompass all business activities (Bolboli & Reiche, 2013).

2.4.1 Workflow - Displacement and layering

Compliance with the new business processes introduced by the system is likely to be affected if there are institutional changes affecting workflow. These changes are caused by derailing activities within the company. A study by Gozman (2014) highlighted two modes of institutional changes that create compliance gaps, namely displacement and layering. These institutional changes assume that the organisation has an existing functioning system which may be visibly defined or passive. The introduction of the new system displaces the existing system, and it is through this displacement phase that a compliance gap is created because users are still staggering into new system.

Gozman (2014) described layering as another mode of institutional change, which is the revision or amendment of the existing system. Layering can also be explained as introducing a system to run alongside the existing one, which may also bring about displacement fuelling a compliance gap. In the Sasol Wax case the effect of layering may not be present, as there are no multiple systems running concurrently. Gozman (2014)'s theory of displacement may have some bearing on this study than layering. The displacement and layering hypotheses are normally visible during the transition phase, and a lack of compliance due to these two modes of institutional changes, particularly after the transition phase, may signify a much deeper problem.

2.4.2 Workflow - Simplicity

A compliance issue may also surface if the business workflow is hindered by core challenges, such as the complexity of the system; the business operating model should not be overly engineered but be limited to only what is necessary (Brocke et al., 2014). Businesses should look for simple process systems that will achieve their organisational goals. Barber, Dewhurst, Burns, and Rogers (2003) interpreted system complexity and a natural lack of reasonableness on human beings, saying it is impossible for individuals to fully comprehend a system. The researcher found this to be a strong statement by Barber et al. (2003), however, researcher argues that an individual can fully comprehend a system regardless of its complexity.

Barber et al. (2003) further made a comparison between the reduction and holistic approaches to a system; the reduction approach implies that system adaptability can improve if it is broken down into sub-systems, while the holistic approach says that approaching a system holistically enhances quick understanding and hence application. Barber et al. (2003) highlighted these two approaches as challenge in system success. According to Brocke et al. (2014), business process initiatives should not be perceived as a modelling exercise, but rather as a holistic approach. It is evident that there is operations and business performance when implementing lean practices holistically (Nawanir, Teong, & Othman, 2013). Barber et al. (2003) seemed to apply extreme cases in dealing with both business realities and human realities. According to Eikebrokk et al. (2011), perceived ease of use will influence perceived usefulness, which will then influence attitude towards behaviour, followed by intent towards actual use.

2.4.3 Practically - Alignment to context and strategy

A process-based philosophy has been widely adopted by many industries in the hope of improving productivity (Sarshar, Haigh, & Amaratunga, 2004). The business landscape is flooded with well-designed business improvement systems that promise high returns and efficiencies for companies. These systems are created by highly reputable continuous improvement firms, and provide guidelines for implementation depending on company dynamics. The company dynamics plays a very significant role in new system implementation success and compliance. Brocke et al. (2014) defined the principle of context-awareness; context-aware means the system

encompasses the business context, scope and size in terms of type of industry, environment, types of processes, and size of business. The business initiatives must also be aligned contextually with strategy (Meers & Samson, 2003).

System designers must develop a system that encompasses the business context, to avoid any misalignments (Nicholas et al., 2010). It is important that a synergy is created across all functions. According to Sikdar (2014), a new business process creates a change in the organisational system of relationships, workflows, tasks, and structure, so there is a need to develop an understanding of how the new business process is aligned with the overall organisational system. Sikdar (2014) claimed that research by Choong (2013) emphasised the importance of business alignment but fails to define how alignment is to be operationalised.

2.4.4 Practically - Operationalising the system

The idea by Sikdar (2014) on operationalising was to introduce Higgins's 8-S model, which is a useful tool for cross functional alignment across organisational factors, structures, systems, processes, leadership styles, staff, resources, and shared values (Higgins, 2005). According to Kettinger, James, and Guha (1997), Higgins (2005) model is great, but its function is limited to organisations' strategic levels. Kettinger et al. (1997) aligned business processes with organisational strategies through methods such as process flowcharts and activity-based costing. These are typical methods that translate strategy downwards by instilling activities with systems output, feeding back into organisational strategy.

2.4.5 Reflect business activities - Misalignment

Nicholas et al. (2010) article discusses tasks misalignment, in that systems may be imposed and come rigid with no consideration of organisational activities. In cases of misalignment, the process activities are conflicting; these activities overlap each other and some end up falling between chairs and plans. The system with many processes activities, but have shortage of resources, particularly human capital, will have implementation challenges. Nicholas et al. (2010) attest that once misalignment is resolved, compliance is achieved. The operational system with task misalignment hinders progress and creates an unhappy workforce. Barber et al. (2003) saw task mismatches as the source of many system problems, and agrees with (Nicholas et

al., 2010). According to Sikdar (2014), organisations must develop an understanding of how new processes will fit into an organisational structure. Sarshar et al. (2004) agreed with Nicholas et al. (2010)'s opinion regarding misalignment being a factor contributing to non-compliance with an operational system.

2.5 System management

2.5.1 Leadership support

Leadership is an important aspect for the success of the organisation, as the leadership style determines the success of the objectives to be delivered (Maseko, 2011). The leader sets the tone for the environment. Employees learn from the structure of their workplace and react the way the environment suggests they should i.e. the environment creates a platform for change (Dasgupta, Suar, & Singh, 2013). Leaders create an inclusive environment, where everyone is involved. The introduction of new system typically means that many jobs will be affected and employees respond by being resistant (Brocke et al., 2014). Employees are important stakeholders, however, thus their involvement will ensure commitment which is critical to success (Brocke et al., 2014). According to Eikebrokk et al. (2011), management support models individual behaviour, so employees see a system as being realistic and develop positive intention and conduct towards it. Leadership behaviour that particularly focuses on supporting and developing the team is positively associated with employee engagement (Xu & Thomas, 2011).

A leader may adopt different means to encourage employees' involvement in a system to improve compliance in a workplace, for example discipline or benefits may be attached to system activities. This theory is called perceptual deterrence theory (Hedström, Karlsson, & Kolkowska, 2013). This is simply a consequence of behavior to reap either cost or reward. This theory is traced back to the work of Thomas Hobbes in the 1500s, which says that individuals conform to an object if there is a possibility of gain, while knowing that when there is non-conformance, a punishment awaits. According to Wahid and Corner (2009), rewards in the form of bonuses and incentives improve employees' performance and are not limited to monetary incentives, e.g. they can also be employee recognition.

2.5.2 Communication

The framework drives daily activities regarding the core business drivers, production, maintenance and planning, which are reliant on individuals' commitment. Good activity co-ordination and communication amongst role players is thus important. Communication is regarded as crucial in business process implementation success, as it breaks the barrier between those in charge of the change initiatives and those getting impacted by it (Sikdar, 2014). Blasini and Leist (2013) concluded that "Information quality" is the most mentioned success factor and includes promising items like "communication" and "inclusiveness".

Al-Mashari and Zairi (1999) and Wahid and Corner (2009) also regarded effective communication to be a key success major. Bandara et al. (2005) agreed with Al-Mashari and Zairi (1999) that factors such as top management support, project champions, communication and inter-departmental cooperation are critical success factors. The framework is well entrenched with exercises and tasks relating to sharing of information. Brocke et al. (2014) believed in the principle of joint understanding, i.e. that all stakeholders must share a common process language. This shared understanding will support process thinking for process improvement purposes. Managerial communication in particular drives relationships and frames the attitudes and behaviours of employees in the workplace (Dasgupta et al., 2013).

2.5.3 Implementation

The requirement profile for the success of a business excellence system is characterised by structural and implementation factors (Bolboli & Reiche, 2013). The prerequisites for implementation are sustainability, integration, ability and environmental monitoring. The process of implementation starts with an orientation workshop, which collects various opinions to be used in making decisions (Bolboli & Reiche, 2013). Al-Mashari and Zairi (1999) suggested that project leaders be used as a means of human involvement in every step of a process. This human involvement should not be limited to project leaders, but all stakeholders should be actively involved in all stages of system implementation. People apart from senior management should champion the initiatives, as success and momentum depend on their continued engagement (Al-Mashari & Zairi, 1999).

2.5.4 Training of employees

Senior management's support, training and development are critical factors for the success of business improvement programmes (Hu, Mason, Williams, & Found, 2015). It is the duty of the employer to ensure that all employees working with a system are trained (Hu et al., 2015). Hu et al. (2015) recommended that the implementation process should start with training and educating employees or managers, rather than simply implementing new systems. Stepping into new territory is nerve-racking, but being mentally ill-equipped increases anxiety. The issue of training that ensures understanding by all users cannot be over emphasised. Bolboli and Reiche (2013) highlighted that training of employees is a necessary prerequisite to achieve business excellence. The structural factors discussed by Bolboli and Reiche (2013) that are necessary for the success of a process system are participation, motivation, training of employees, and continuous improvement focus. A system that is not user-friendly combined with lack of formal training, may be confusing to new users (Reddy, 2013).

2.5.5 Employee development - Involvement

The changes in an organisation's working methodology can seem threatening and may thus trigger employee resistance. Each individual receives the idea of a change differently. The principle of involvement emphasises that all stakeholders affected by a system be involved as early as possible Brocke et al. (2014), as this raises the chances of success of the programme. Employee involvement and participation bring about an element of empowerment (Hu et al., 2015). However the employee involvement must be active and transparent (Brocke et al., 2014). Employees must be aware that their inputs are taken serious and considered during system crafting and implementation. This raises employees' level of ownership, commitment and systems understanding. Stakeholder involvement can be a lengthy process but the involvement effort diminishes the level of resistance (Brocke et al., 2014). Employee involvement and top management commitment are of similar importance, and together are regarded as the top two critical success factors (Wahid & Corner, 2009). An organisation's greatest asset is said to be its people.

Brocke et al. (2014) took the issue of involvement in employee up-skilling through the principle of enablement. The principle of enablement means developing

individual and organisations system capabilities (Brocke et al., 2014). Investing in a tool is as important as investing in capabilities, i.e. organisations must pay attention to the development of individuals and improve organisation's capabilities (Hu et al., 2015). Organisational capabilities are important, as business operating systems are not an ad hoc solution but a lasting blueprint for a business with a strong focus on long term growth.

The business operating model introduces a new process language amongst employees (Brocke et al., 2014). Brocke et al. (2014) commented that a business operating system is a mechanism to allow and sustain common language amongst all stakeholders. This is the principle of joint-understanding which enables employees to sharpen the mind-set to be geared up for process thinking (Brocke et al., 2014). A common language amongst employees promotes good communication and knowledge transfer, and encourages involvement. The business process mind-set allows participants to engage in conversation and share knowledge in ways that will bring forth process improvement ideas, hence value is created (Brocke et al., 2014). There are many ways in which one can encourage human involvement; incentives, recognition and/or performance appraisals are forms of drawing people into initiatives. Teams and individual empowerment are important elements as they establish a sense of responsibility, accountability and self-management (Al-Mashari & Zairi, 1999).

2.5.6 Employee development - Institutionalisation

Organisational habits and circumstances can stimulate silo mentality, which prevents horizontal process thinking and conduct (Brocke et al., 2014). This scenario is reinforced by organisations structural arrangement. Institutionalisation advocates entrenching business processes within the organisational working structure, and defines the extent of individuals' roles and responsibilities in support of the system. Furthermore, the individuals' duties are entrenched within systems' daily activities. Institutionalisation further suggests that the responsibilities and duties that are linked to a system be integrated into individual key performance indicators (Brocke et al., 2014). This will ensure that activities are horizontally linked to all stakeholders to discourage silo behaviour.

2.6 Human behaviour

2.6.1 Compliance theories - Behavioural view

Recent studies have confirmed that human behaviour is an element that has an impact on the continued use of a system (Eikebrokk et al., 2011). According to Eikebrokk et al. (2011) study on factors that influence compliance with a system, there are two factors - technology acceptance and user behaviour. Behavioural issues play a significant role in system adherence, as do the reasons stemming from process perspectives (Eikebrokk et al., 2011). Nicholas et al. (2010) attested that compliance is indeed a behavioural act. It is on this point of view that this study gravitates to the issue of compliance by exploring theories surrounding human behaviour.

This study sought to understand what can be done to fully comply with a system in a manufacturing firm. Sommestad, Hallberg, Lundholm, and Bengtsson (2014) tried to shed some light on the burning question of what makes an individual comply. Sommestad et al. (2014) says the predecessor of actual behaviour is intention, while intention has a predecessor called attitude; these three variables define compliance. Both compliance and non-compliance can be described by these variables in the same sequential manner.

Hedström et al. (2013) disputed theoretical behavioural sequence by Sommestad et al. (2014), and highlighted the relevance of deterrence theory in human behavioural situations. Deterrence theory states that non-compliance is intentional, based on a user's judgement of sanctions if they do not comply (Hedström et al., 2013). How much of the behaviour is intentionally defiant? How much is circumstantial like work pressures, particularly when good intention was present? Does an individual's pure miscalculation play a role even though their attitude was good? Could it be that a lack of enforcement makes people complacent? These are some of the questions that are not fully tackled by Hedström et al. (2013), which need to be answered in future studies.

Non-compliance tends to increase if the probability of authorities checking the process is low, thus the importance of external factors such as inspection and enforcement cannot be ignored (Asselt, Osinga, & Bremmers, 2016). The view by

Asselt et al. (2016) somewhat agrees with the theory of deterrence, as they argued that internal factors such as acceptance have a significant role to play in compliance behaviour. The factors mentioned by Asselt et al. (2016) as influencing compliance behaviour are:

Voluntarily compliance dimension

- Knowledge of guidelines – being familiar and clear about everything.
- Cost/benefit consideration – the advantages and disadvantages of compliance expressed in time, money and effort, as perceived by the participants.
- Natural acceptance – the extent to which guidelines are accepted by participants.
- General adherence – the extent to which participants generally respect authority.
- Unofficial control – the risk as perceived by participants of negative or positive sanctions coming from their peers.

Enforcement compliance dimension

- Being reported – the risk of the probability of a third party noticing and reporting bad behaviour to a superior.
- Inspection risk – the risk of the probability of an inspection being conducted by superiors and detecting a violation.
- Exposure risk – the risk of detection should an inspection be conducted.
- Spot checks – the risk as perceived by participants of detection should an inspection be done in that individual/group work area.
- Punishment – the risk of punishment imposed should a violation be detected on inspection.
- Extent of punishment – the level of punishment which can be imposed should a violation be detected on inspection.

Asselt et al. (2016) stated that other people have an impact on individuals' compliance behaviour, particularly if they are within the same social network. This is similar to the institutional theory defined by (Braunscheidel, Hamister, Suresh, &

Star, 2011). The slight difference is that this is in the context of individuals more than divisions or organisations.

2.6.2 A game framing approach

This theory is rooted in the conviction that compliance is simplified by following a goal enclosed method (Etienne, 2011). This is described as an approach that pulls influences from a variety of motivational sources towards an individual decision, and an individual is subjected to these motivations simultaneously. Etienne (2011) expressed criticism of compliance theories, claiming that they are built on mutually incompatible assumptions and present two problems: first that compliance theories are internally inconsistent while simultaneously account for pursuit of motivations as emotional, and material; second, the compliance theories have struggled to explain the interactions of different emotions and their contribution to compliance and non-compliance (Etienne, 2011).

The goal framing theory by Lindenberg and Steg (2014) states that there are goals which are secondary and then there are primary goals, which can become focal points which produce an undeliberate response on secondary goals. The work in essence is in agreement with Etienne (2011), yet Lindenberg and Steg (2014) and Etienne (2011) failed to offer a broader view of compliance enabling behaviour. The researcher believe that in some instances, goals are arranged in order of priority and get altered as the environment changes and different motivations arise, i.e. it is not as systematic and rigid as the authors make it out to be. Nicholas et al. (2010) has this view in response to goals; attitude drives behaviour thereby achieves compliance. The researchers view on Lindenberg and Steg (2014) and Etienne (2011) theory is that it rests heavily on individuals' internal influence as the driver to compliance behaviour, i.e. they failed to acknowledge the environment as a significant influence on compliance behaviour.

The fundamental assumption for goal framing theory is that the task executor is pursuing multiple goals at the same time (Etienne, 2011). In the line of production there are various deliverables that an individual is responsible for. A production supervisor for instance, must simultaneously meet a production target, maintain a high plant up-time, provide supervision to the shop-floor, and eliminate waste. All

these are multiple goals that are equally important, not forgetting issues such as meeting customer expectations and ensuring quality and safety. In a situation where there is more than one important task to complete, the goal framing theory is insufficient. The researchers view point is that although goal framing theory claims to simplify goal-oriented behaviour leading to compliance, its flaw is that it makes an individual's thinking and surroundings rigid, which is uncommon in real life situations.

2.6.3 From intention to action: The Theory of Planned Behaviour (TPB)

Ajzen's (1980's) work on the Theory of Planned Behaviour (TPB) has given birth to a number of theories on compliance, and has been developed and re-written over the years by different scholars. The theory of planned behaviour by Ajzen (1991b) states that there are implicit or explicit formulated steps that are composed prior to a single activity being recognised. Eikebrokk et al. (2011) agrees with this view. In a production environment, a goal could be to conduct inspections. Some steps are performed consciously, while some come naturally to an individual. A production supervisor may have to conduct inspections. Scheduling and inviting participants are explicit prior steps in this case, which are part of planning to ultimately achieve the set goal. All the sequential steps are driven by the intention, which is primarily what the theory of planned behaviour is about.

Ajzen (1991b) concluded this theory by highlighting that behaviour will change as actions change, which are controlled by intentions, i.e. intentions are altered by conditions. This statement is accepted by the researcher, as in production environment there are many dynamics that may come into play and alter a plan even though intentions are good. Some people follow up and complete a task when heavy pressure is exerted or incentives are placed.

Ajzen (2011) applied the theory of planned behaviour to individual productivity. He attested that to get desired engagement and performance, the employee behaviour is more defined by TPB than other heavily studied notations. He claimed that compliance to a job task rests on nothing but the attitude towards that assignment. To highlight the correlations between Sommestad et al. (2014) and Ajzen, Czasch, and Flood (2009), the former begins with attitude followed by intention, while the latter begins with intention which is followed by intention.

2.6.4 Theory of reasoned action

This theory by Ajzen (1991b) is a development from the Theory of Planned Behaviour, which is rooted in the assumption that human beings are sensible beings, and before taking an action an individual implicitly or explicitly considers the available information. This thought processing occurs for simple daily activities all the way to more serious and bigger decisions, and individuals act in accordance with their intentions. The intention can either be to perform or not to perform. The theory of reasoned behaviour is underpinned by two determinants - personal factors and social influence (Ajzen (1991a). The new theory, however argued that attitude has less of an effect on performance than beliefs (Ajzen, 2011). Belief is considered to be a prevailing determinant of person's attitude towards an object (Ajzen, 2011). This theory is of the view that compliance to system which is regarded as an object can be observed if attitude is right when there is a presence of right belief to system.

2.6.5 Institutional theory

Business tools like TQM and Six Sigma have used institutional theory to help explain their adoption and use (Braunscheidel et al., 2011). The institutional theory is defined as the kind of pressures exerted onto an organisation by another, on which they depend. It could also be pressure exerted because of an expectation within the organisational network. In the case of Sasol, some divisions are inter-dependent on each other, thus the likelihood is that this type of pressure is very high. There is also an element of expectation to conform to organisation-wide norms. This theory has some significance in this study, as the framework was brought to Durban when other Sasol divisions were already active on system. Sasol is geographically represented in almost all provinces within the borders of South Africa, be as main plants or satellite operations. Sasol has a big drive of oneness and uniformity, therefore institutional pressure does influence compliance with organisational behaviour (Raaijmakers, Vermeulen, Meeus, & Zietsma, 2015).

2.7 Conclusion

The greatest benefit of successfully implementing a manufacturing excellence framework is the empowerment that comes with it; senior managers are able to inspire their employees while focusing mainly on their core duties of planning ahead rather than trouble-shooting (Gilgeous & Gilgeous, 2001). Based on the literature reviewed, the significant theories are: system structure, management and individual behaviour. Firstly, system structure refers to the system design and the structural support it provides that enables job enhancement; the systemised processes increase work performance. Secondly, the management considers the organisation's code, i.e. the character of the organisation to communicate, empower and teach. An excellent system must be introduced perfectly and fit precisely within an organisation's character. Lastly, an individual's behaviour plays a significant role in compliance or non-compliance. The next chapter defines the research methodology for this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter critically evaluated the existing literature on the topic. This chapter gives the detailed steps taken in delivering this research project, and explains the methods and techniques used in collecting the data to answer the research questions. Du Plooy-Cilliers, Davis, and Bezuidenhout (2014) defined research as a process of enquiry through which information is collected. The kind and manner of information collected hangs on the researcher's view of the world; this is known as a philosophical view (Saunders et al., 2009). The research philosophy contains critical assumptions underpinning the research strategies and research methods which are part of this research study plan (Saunders et al., 2009).

This was a qualitative research study, which attempted to provide an in-depth understanding of a phenomenon (Du Plooy-Cilliers et al., 2014). This chapter will define the study research philosophy, research approaches, research strategies, data collection technique and data analysis approach, review the research's credibility, and end by addressing ethical factors.

3.2 Study setting

This is an exploratory study aimed at generating in-depth knowledge and understanding of an individual's perception of compliance with an operational system. The study participants are managers in the first line of the hierarchy level, and are sometimes referred to as supervisors. The study was conducted within the organisation. Twelve Sasol Wax first line managers were interviewed, and all the participants were company employees occupying a supervisory role. The researcher's intervention with the study setting was minimal. The study setting was on natural environment and researchers interference with flow of work processes was minimal (Sekaran & Bougie, 2013).

3.3 Research design

A research study is a series of well thought out and carefully executed activities (Sekaran & Bougie, 2013). The research design's guiding pillars are research questions with a constant reflection on the research philosophy (Saunders et al., 2009). The research philosophy, together with research approach, provides supporting principles to the research process. According to Sekaran and Bougie (2013), a research's design is a plan for the measurement, collection and analysis of data based on the research questions of the study. This study follows an inductive define research approach. The information collected from the field study became researcher's subject theory (Rose et al., 2015).

In the research process, serious cognisance was given to the selection of a research method, as they reflect research philosophy while the methods are situated within a research paradigm. A paradigm is a lens through which a researcher thinks and views the world around him. The study applied interpretivism as the research paradigm, which advocates that people are fundamentally different from objects and cannot be studied in the same way (Du Plooy-Cilliers et al., 2014). It is with this in mind that this paradigm was fit for the purpose of trying to understand the situation through the eyes of the participants, i.e. the supervisors. The researcher's perspective is that the world of interest to this study is made up of unique individuals, hence there is no objective reality or truth (Saunders et al., 2009). This philosophy underpins the research strategy and methods employed by this research (Henning, Van Rensburg, & Smit, 2004). Against the background of this philosophy, the ontology that the study holds is subjectivism (Saunders et al., 2009). This influenced the framing of the research process and defined the researcher's position and thinking about social conditions. Reliability is a measure indicating the level of error free of results gathered, in a form of stability and consistency. Participants had to ideally be calm and not be pressurised by high work levels. Interviews were conducted in an isolated private space with each participant for purposes of internal consistency.

3.4 Research methods

3.4.1 Quantitative studies

Quantitative research is predominately aligned with data collection and data analysis that generates and uses numerical data (Saunders et al., 2009). It is frequently used to define relationships or correlations of variables in a study. Surveys are predominately data collection techniques used in quantitative research studies, while the research instrument normally used is a questionnaire (Sekaran & Bougie, 2013). Statistical methods are used to analyse and interpret the collected data, and study sample sizes are usually large and selected randomly (Henning et al., 2004). The quantitative method was not appropriate for this study as quantitative research methods are generally used in a deductive approach, which is related to positivism (Rose et al., 2015).

3.4.2 Qualitative studies

Qualitative research deals with the essential qualities of subjective experiences and the meanings in relation to phenomena (Du Plooy-Cilliers et al., 2014). It is predominately aligned with data collection and data analysis, which generates and uses non-numerical data (Saunders et al., 2009). Qualitative questions are asked in a particular way and refer to qualitative contents and the data collection method involves words, statements and images (Crescentini & Mainardi, 2009). These are ultimately used to generate theories based on participants' insights (Sekaran & Bougie, 2013). The qualitative research follows a scientific method, where the theory is generated by the researcher from the data collected.

For the purpose of this study, qualitative research was used to evaluate the perceptions of factors leading to compliance with operational systems at Sasol Wax. This is because the form of data collection techniques aligned with qualitative research, interviews, open-ended questions, focus group, observation are able to reflect deeper knowledge and understanding of social reality. Qualitative study affords a methodology that is of interest to researcher in order to understand individual experiences through the participants' eyes (Du Plooy-Cilliers et al., 2014). Below is a comparison of the advantages and disadvantages of qualitative and quantitation research methods.

Table 3.1: Advantages and disadvantages of qualitative and quantitative methods

Qualitative	Quantitative
Advantages	
<ul style="list-style-type: none"> • Study focus – examines the breadth and depth of the problem. This is particularly crucial as the facts the research is seeking may be widespread. 	<ul style="list-style-type: none"> • Data are collected from a representative sample. The responses are closely related to the responses of the entire population.
<ul style="list-style-type: none"> • It provides a focus on naturally settings, and reflects a strong view on what 'real life' is like (Guercini, 2014). 	<ul style="list-style-type: none"> • Data collection can be less expensive.
<ul style="list-style-type: none"> • Sample frame – it uses a relatively smaller sample size. This was suitable for this research as the number of first line managers within the organisation is small. 	<ul style="list-style-type: none"> • Sample frame - list of interested people or objects in that population, e.g. customers, This data collection technique can be less intimidating (Du Plooy-Cilliers et al., 2014).
<ul style="list-style-type: none"> • Results – findings are less generalised. It was important for this research that findings are particular, as the phenomenon in this study is related to a specified distinctive case. 	<ul style="list-style-type: none"> • Data collection techniques like surveys can be filled in anonymously, which encourages responses.
Qualitative	Quantitative
Disadvantages	
<ul style="list-style-type: none"> • The data analysis is systematic and vigorous and it can be complex (Du Plooy-Cilliers et al., 2014). 	<ul style="list-style-type: none"> • It normally requires the collection of a large amount of data.
<ul style="list-style-type: none"> • The qualitative data analysis is a demanding process (Saunders et al., 2009). It is tedious as it involves transcribing and coding. 	<ul style="list-style-type: none"> • The design of questionnaires can be complex and time consuming (Bright, 2011).

3.5 Research strategies

The research strategy's main objective is to craft and channel activities towards answering research questions, thereby achieving the project's goals. The choice of a research strategy is guided by the research questions, objectives, time available and other resources, with the research philosophy as the foundation (Saunders et al., 2009).

3.5.1 Experiments

An experiment is a common form of research strategy used in the field of science, but it is not limited to science faculty. The field of experiment is usually a laboratory setting, but can also be in a social setting. In an experiment one tests a variable's effect in reference to changes on another variable, as well as the level of magnitude of change (Sekaran & Bougie, 2013). There is some level of interference by the researcher with the experiment strategy. This strategy was not suitable for the purpose of this study as this study's defined level of researcher interference was minimal. Furthermore, this project's study setting was a field study, not a field experiment. It was impractical to subject the company and people to an experimental set-up to gain insight into a business situation.

3.5.2 Survey research

This strategy is widely used in business research to collect information through administered questionnaires to respondents. The data collected may be in the form of knowledge, attitudes or perceptions towards an object. Structured observations, structured and semi-structured interviews fall into this strategy (Sekaran & Bougie, 2013). This study sought to understand the supervisors' perceptions of system compliance. In qualitative research the data are collected through interviews, open-ended questions and observations. The respondents are free to express accurate information easily and freely through the use of the chosen instrument (Henning et al., 2004). This approach uncovers the underlying effect of a situation, which is why this research strategy was the best fit for this study.

3.5.3 Grounded theory

Grounded theory is the building up of information into a theory from the ground through data collected. Although its definition is aligned with the inductive approach, its description is not limited to the approach. Grounded theory begins with data collection, without the formation of an initial theoretical framework. Data are generated from a series of observations and thus the theory is developed (Saunders et al., 2009). The grounded theory approach is normally used when there is a limited amount of theory on the topic or a theory needs more development (Du Plooy-Cilliers et al., 2014). The researcher draws from the developed theory rather than through a literature review, however this study had sufficient literature to draw against, which is why this strategy was precluded.

3.5.4 Case study

A case study refers to a particular process of investigating a case or conducting a study. The researcher gains access to targeted people or a group, resources and information (Qu & Dumay, 2011). The information the researcher gathers are the data needed for analysis, which is the complete opposite of experimental strategy (Saunders et al., 2009). In the case study the settings are less controlled and the case study the researcher examines is a problem in real life. Data may be collected through multiple methods. A case study was somewhat suitable for this exploratory study, but was not the best fit as guided by research questions, as the researcher had limited control over actual behaviour and degree of focus on present versus historical events (Henning et al., 2004).

3.6 Sampling design

3.6.1 Target population

It may not always be financially and practically possible to collect data from the entire population, therefore a sample is imperative. Population refers to an entire group of people or events that are of interest that researcher wishes to investigate (Sekaran & Bougie, 2013). The targeted population for this study were all first line managers in production, planning and maintenance. The sample element was made up of each first line manager at Sasol Wax Durban within these disciplines.

3.6.2 Sampling

Sampling is a technique of sub-dividing the group into a manageable size, where data will only be collected and analysed from the selected group (Saunders et al., 2009). A sample is assumed to be a good representation of the population (Du Plooy-Cilliers et al., 2014). The sample frame for this study was all first line managers in production, maintenance and planning. Sampling can be done either by probability sampling or nonprobability sampling (Aggarwal, 2011).

3.6.3 Non-probability sampling technique

Non-probability sampling is referred to as a method of selecting a sample according to either expertise or recommendations not randomly selecting participants from a list. A sample selected in this manner still meets population parameters (Du Plooy-Cilliers et al., 2014). The most common non-probability sampling designs are convenience sampling and purposive sampling.

3.6.4 Purposive sampling

Purposive sampling occurs when a specific group is targeted because of the knowledge or experience that group possesses, which is useful for the study (Sekaran & Bougie, 2013). This type of non-probability sampling (purposive) can be applied in the form of judgmental or quota sampling (Aggarwal, 2011). For this study non-probability sampling was used, more specifically purposive sampling.

Judgemental sampling is when a researcher selects elements based on the view that the information sought is available within those individuals or groups. This sampling design is used when a certain number of people have information that is limited (Sekaran & Bougie, 2013). As the first line managers are exposed to the nature and application of this operating system, they had the experience and know-how necessary for answering the research questions (Aggarwal, 2011). For this reason, purposive judgemental sampling was used to arrive at a sampling frame, which included 12 first line managers from the production, planning and maintenance disciplines.

3.7 Unit of analysis

The study examined the employees' level of compliance or non-compliance as it hopes to raise the level of responsiveness to the system, therefore the unit of analysis were individuals. Data were gathered from each defined group of employees and each line manager's response represented a data source.

3.8 Time horizon

The study was cross-sectional and a single data collection was done from which to draw a conclusion. The snapshot view was sufficient to answer the research questions.

3.9 Data collection methods

3.9.1 Interviews

Research transforms an interviewee's opinions and emotions into a productive source of knowledge (Qu & Dumay, 2011). Interviews are regarded as data collection primary sources and can be held one-on-one or in groups. Interviews can also occur over the telephone or any electronic media. An interview can be structured, semi-structured or unstructured for the first two, the researcher has pre-formulated questions (Sekaran & Bougie, 2013). For this study, face-to-face, one-on-one semi-structured interviews were used to collect data.

Getting the targeted population to participate and consent to an interview did not prove to be a problem, as all the potential participants were willing to take part. In preparation for the interviews, the researcher read books and watched online videos on how to conduct an interview effectively. All the interviews were conducted in the respondents' own offices and were captured on audio. The respondents answered three structured questions and 12 open-ended questions (Appendix 2). Open-ended questions allow participants to give responses without being influenced by the researcher's predetermined cues (Du Plooy-Cilliers et al., 2014). The first three questions were general demographic questions while the 12 open-ended were subject specific. The questions were clear and simple so the respondents knew what was expected of them (Du Plooy-Cilliers et al., 2014). The questions' sequence moved from a broad to a narrow focus. There were no double-barrelled questions, i.e. each question addressed one aspect at a time (Du Plooy-Cilliers et al., 2014).

Notes were taken during the interviews; in particular voice tone and non-verbal communications were recorded. The interviews were standardised and open-ended, with the same set of interview questions being used for all 12 respondents (Du Plooy-Cilliers et al., 2014). Important themes, patterns and relationships were recognised and highlighted as data was collected.

All the interviews were conducted within business premises. Each interview lasted approximately 30 to 45 minutes. All the interviews were conducted in English over a period from 6th April until 4th May 2016. All the respondents were assured a high level of confidentiality and sensitivity (Henning et al., 2004). Each respondent completed and sign an informed consent letter (see Appendix 1) acknowledging the recording of their interview and their free will in participating in the interview. Permission to conduct the study was given by an Area Manager.

3.9.2 Advantages of interviews

- Data collection is done in a pleasant environment.
- In-depth interviews provide comprehensive data, which improves the quality of the research.
- The direction of the interview is guided by the interviewer, by giving verbal and non-verbal prompts.
- The open-ended questions allow the respondents to express opinions openly, therefore substantial information is gathered.

3.9.3 Disadvantages of interviews

- There is a chance that answers are biased because of the presence of the researcher.
- The fact that the conversation is being recorded subconsciously makes the respondents hold back some views.
- Some respondents are not perfectly articulate.
- Transcribing after each interview is time consuming.

3.10 Qualitative data analysis

3.10.1 Data preparation

This section defines how the qualitative data collected were analysed, interpreted and presented. The analysis process is a systematic and rigorous approach designed to capture deep meaning from the information presented by the interviewees (Saunders et al., 2009). It is important that an analysis is done properly so that meanings from the data are understood. Qualitative data analysis is aimed at making valid inferences from an overwhelming amount of data (Sekaran & Bougie, 2013).

The first step in data analysis was data preparation. The data was transcribed verbatim (Henning et al., 2004). This was done after every interview to ensure that the themes emerging were completely saturated. The next step was the reduction process of segmenting, coding and categorising data (Sekaran & Bougie, 2013).

3.10.2 Data reduction

The following were the steps taken in an open coding process:

- The researcher read through the text to get an overall impression of the content (Henning et al., 2004).
- The text transcripts were read line by line, and when a meaningful segment of text was identified, a label was given to it. These labels are called codes (Du Plooy-Cilliers et al., 2014).
- This process went on until all the data was segmented.
- The codes were named according to terminology used by the respondents, which is called vivo codes (Rose et al., 2015).

3.10.3 Data categorising

Once codes were awarded to different chunks or segments, the related codes were grouped together or categorised (Henning et al., 2004). The steps to categorising were as follows:

- Codes were scanned through to find those that shared common features.
- Codes that shared meanings or had a relationship were grouped together in one theme.
- The researcher read the text repeatedly and more categories emerged.

- The themed codes were arranged in a hierarchy tree.
- The codes were mutually exclusive, distinct and exhaustive, i.e. all the relevant data fitted into it (Du Plooy-Cilliers et al., 2014).
- Category definitions were clear and consistent.
- The last stage was analysing the patterns and relationships of categories.

3.11 Research credibility

The research methodology process has no value if the research instrument used to collect data is not valid and reliable (Crescentini & Mainardi, 2009). Qualitative researchers prefer the concept of trustworthiness to measure reliability and validity in qualitative studies (Du Plooy-Cilliers et al., 2014). This section of the study deals with evaluating the accuracy of the measurability of the results, i.e. it seeks to define how this research's findings can be trusted. Reducing the possibility of getting answers to research questions wrong means that attention has to be paid to two particular considerations on research design: reliability and validity (Saunders et al., 2009). The details below assure the goodness of data collected.

3.11.1 Validity

Validity is a test of how well an instrument that is developed measures the particular concept it is intended to measure (Sekaran & Bougie, 2013). This is how this concept was ensured in this research:

- All 12 respondents were asked the same set of questions during interview.
- For external validity final questionnaire was sent to the ethics board at the University and full approval was received (Makhomu, 2012).
- A good selection is needed to ensure accuracy, hence this group of managers was a good sample element.

3.11.2 Reliability

Reliability is a test of how consistently a measuring instrument measures the concept it is measuring (Sekaran & Bougie, 2013). Reliability refers to the extent to which one's data collection techniques or analysis procedures will yield consistent findings (Saunders et al., 2009). This is how consistency was ensured:

- To address the participants' possible biases in case of fear of superiors, anonymity was assured which was communicated with the respondents prior to the interview sessions.
- To prevent possible observer disruption, no audience was allowed during any of the interviews.
- No leading questions were posed by the researcher to the participants.

3.12 Ethical issues

Ethics in business research refers to a code of conduct or expected societal norms of behaviour while conducting a research study (Sekaran & Bougie, 2013). There are ethical considerations in all areas of research project, which the researcher took cognisance of. Ethics in this study were addressed in the following manner:

- Ethical conduct was first and foremost carried out by the researcher.
- The UKZN Research Ethics Policy requires researchers to get approval before embarking on a research project (Appendix 3).
- Permission to conduct the study at Sasol Wax Durban was given by the Area Manager Production.
- All the interview participants were requested to sign an informed consent form and all did so freely (Appendix 1).
- Information shared by the respondents during the interviews is treated with a high level of confidentiality.
- During the interviews, the views, opinions and feelings of the researcher about the topic did not influence the discussion.
- The researcher did not extrapolate, twist or reproduce data during analysis.
- Information related to the organisation will be kept confidential.
- The interviews were without deception, discomfort or any similar unpleasant and unethical conditions for both the interviewer and the interviewees.

3.13 Conclusion

This chapter began by describing the research philosophy, research approaches and research strategies employed by this study. It then defined how the sample and its size were determined. The qualitative and quantitative studies were defined. The section elaborated on qualitative data collection and analysis. The importance of research credibility was explored. The ethical issues facing the research project was reviewed. The next chapter will present the research findings.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

The previous chapter presented the research methodology used by this research study and defined the specific methods and techniques used in the collection and analysis of the data. This chapter focuses on presenting the non-numeric data from the semi-structured interviews conducted. A total of 12 interviews were conducted, audio recorded and transcribed. The transcribed raw data went through an open coding process and themes were identified.

This section will begin by presenting the profile of the respondents who participated in the interviews. Furthermore, it presents the findings in the form of themes and sub-themes. This is followed by an in-depth analysis of the data, providing direct quotes where necessary to highlight a point.

4.2 Demographics of respondents

Purposive judgmental sampling was used in selecting the following 12 participants for the interview.

Table 4.1: Respondents' profiles

Respondents	Department	Gender	Race
R1	Maintenance	Male	White
R2	Production	Male	Coloured
R3	Planning	Female	Indian
R4	Maintenance	Male	Black
R5	Production	Male	Black
R6	Production	Female	Black
R7	Maintenance	Male	White
R8	Production	Male	Indian
R9	Production	Male	Indian
R10	Maintenance	Male	White
R11	Production	Male	Indian
R12	Planning	Male	Indian

4.3 Results display and analysis

The table below gives the summary of themes and sub-themes that emerged from the in-depth analysis of the data collected.

Table 4.2: Themes and sub-themes

Theme 1	System functionality
Sub-theme 1.1	System objectives
Sub-theme 1.2	System application
Theme 2	Training requirements
Sub-theme 2.1	Current group
Sub-theme 2.2	Extended group
Sub-theme 2.3	Training programme
Theme 3	Employee engagement
Theme 4	Communication
Theme 5	Sustainability

4.3.1 Theme 1: System functionality

The framework was developed to encompass every business function. It articulates each individuals' job description, defines the work processes and task, this outline the system functionality. The coding hierarchy of the system functionality theme is made up of job scope, operational structure, integration and multi-disciplinary design view as per Figure 4.1

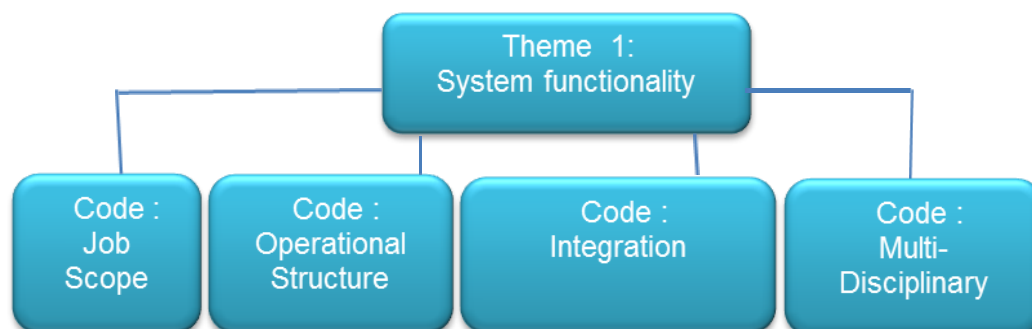


Figure 4.1: Coding Hierarchy Tree for Theme 1

Figure 4.1 illustrates the collection of statement significant in system functionality. A research finding indicated that the issuing of a job scope to each employee was well received by many respondents, who were excited to obtain detailed, written work duties. Job specification brought transparency and clarity on how each individual fits within the bigger organisational picture.

‘...your job description...So you knew where you fit in and what was required of you.’
(R3)

Another respondent expressed the joy of being given a job specification. R8 said the job scope was well detailed and became a very good support document.

‘For example, everybody has a title or position, that book tells you exactly what you need to do for your position....’ I come to work, I have a look at my book, and tells me what I need to do...’ (R8)

‘...so they simplified how everyone's level is going to be.’ (R1)

Another respondent was also pleased with her job specification, but was concerned on certain instances where individuals follow this document too rigidly.

‘An arising challenge is that people are no longer willing to step out of their scope of duties should the need to arise. Instead they only want to stick to what is written down. But it sometimes a challenge because when help is needed in a particular area, and someone has the expertise, but by virtue of the scope of their duties as per the framework, they will not offer assistance.’ (R6)

Another point that emerged regarding system's functionality was its operating structure, which brings strictness and ease of flow to process. Everything is structured in terms of work flow and processes, and each discipline's work load was made visible and clear. There was a general consensus amongst respondents on the system's operational structure.

‘...so the whole structure is simplified that is, the reporting, the task executing.’ (R1)

'Meetings were well planned, organised, brief and to the point. Whatever was stated concerning the meeting was clear and set.' (R5)

Another positive feature identified by the respondents in system functionality was the integration of all its units of operation, it brings all disciplines into one alliance for each task in every period. While this is viewed as a good system feature, it has its limitations as the task completion in one discipline relies on another to pull the same weight. Should certain individual(s) on another team slack off it affects the work flow, thus individuals' good behaviour is imperative in order to fulfil the system's original intent.

'...not all disciplines are practicing, that is what the problem is. Then it is not going to work.' (R8)

A last point raised by the respondents on system functionality was the system design approach. The company is a global firm made up of different operational plant sizes and forms. It was designed and made to function in view of all disciplines within the company. The respondents felt that framework was generic, non-specific and did not perfectly fit the size and dynamics of the satellite operation. The limited resources at satellite operation are one of the dynamics. The participants pointed out that the development of the system must be site specific.

'I think that it is designed for big plants and we are a small plant...So there are certain things that are not taken into consideration.' (R6)

The respondents mentioned that the framework, has activities that are not relevant to satellite operational site.

'... some of the things weren't applicable to our site...' (R8, R9)

Sub-theme 1.1: System objectives

There was a consensus amongst the respondents regarding an understanding of what the system was intended for. Almost everyone had a common understanding that the fundamental intent was to bring about a standardisation across all the divisions. Figure 4.2 below displays the hierarchal codes of sub-theme 1.1

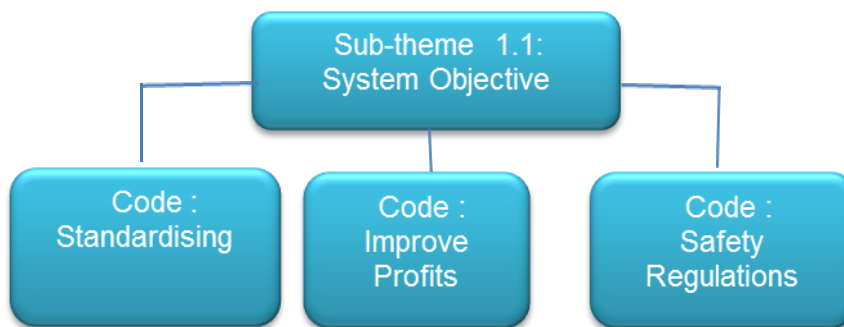


Figure 4.2: Coding Hierarchy Tree for sub-theme 1.1

Figure 4.2 illustrates the statements made by respondents which were labelled as codes, which define system objectivity. The first code that was defined was standardisation, this was highlighted by employees as being a great feature for the business.

‘...everyone gets to work in one direction, one set of rules, one set of policies...’ (R9)

This arrangement seemed to be welcomed by all. It was mentioned that organisations speaking the same language create internal coherence. The standardisation of work processes, documentation and meetings afford employees an opportunity to adapt quickly and perform immediately when visiting or being deployed to other divisions within Sasol. One respondent defined the pleasure of standardisation as:

‘...to fit easily to other company divisions if relocated...’ (R6)

Another objective highlighted by a respondent was that the system enables the company to conform to authorities' set standards, particularly on the safety side.

'...comply with safety requirements...' (R4)

'Our safety record will be improved. Production performance will definitely improve. Waste management also and waste reduction.' (R9)

The majority of the respondents mentioned improved profit margins as the main objective of the system. The implementation and compliance with, the system will realise profits for the organisation through cost savings, greater productivity, and improved efficiencies.

'...to cut costs and operate more like lean manufacturing.' (R3)

The respondent emphasised the improved profits point by highlighting the centralisation of procurement department. The findings indicated that the buying section is the area where savings will mostly be realised. The respondents had serious mixed emotions on this.

'...from a cost point of view would definitely be the way to go, buy a pump similar everywhere...' (R8)

'We are getting better like we can improve utilising economies of scale as we are streamlined...we've been spending so much...' (12)

Some respondents agreed regarding the potential cost savings, but wished procurement department be decentralised.

'Before the framework we had our own logistics and supply chain department that sat here in this office...perhaps procurement could be decentralised as well... to purchase something is taking almost double the time than it previously did.' (R1)

Sub-theme 1.2: System application

There was a general sense amongst the majority of the respondents that the framework will work best if used well by all employees. The framework is rooted in defining standards, setting of standards and conformance to standards. The set standard becomes the guide. Figure 4.3 below displays the system application and codes that emerged from this theme.

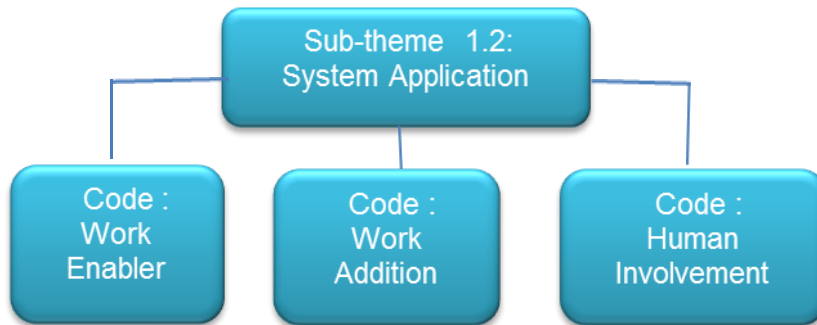


Figure 4.3: Coding Hierarchy Tree for Sub-theme 1.2

Figure 4.3 illustrates the terminology used by the respondents when defining the system application. These terms, which have common features, are codes grouped under system application. The respondents did not share a common view regarding framework as the work enabling tool. R9 view the system as a good work enabling tool.

‘I think that’s quite an important part particularly on planning, you need to plan. In order for you to plan you need to have rules, you need to follow things.’ (R9)

Respondent R10 regard the framework as a good work enabling tool. This point was repeated by another respondent, but looking from a synergy point of view.

‘...it helps in process streamlining. One must know what the other is doing.’ (R10)

One respondent seemed to disagree with the view that this framework is a good work enabling tool. The respondent expressed the feeling as:

'...unfortunately, I don't see it working...' (R8)

New tasks were added on with the system application, thus employees had to incorporate other processes into their duties. The respondents had a positive outlook on the additional work.

'...we got involved in planning, where we never used to...' (R1)

R11 welcomes the addition of work through being involved in new platform like planning sessions.

'...for maintenance to execute work, planning plays a big role and production scheduling, therefore everyone is working together.' (R11)

The framework application is designed so that all relevant parties are involved in every step of the process. As the framework design principle is PDCA, there is a lot of planning and reviewing by all participants. Not everyone supported the idea of being involved.

'...they are still sitting in a lot of meetings...' (R2)

4.3.2 Theme 2: Training requirement

Employees considered training to be central to the framework's function and success, as knowledge and understanding of the system will make it easier to operate and therefore comply with. Figure 4.4 below displays the sub-themes of training requirement. The current group sub-theme 2.1 referred to the supervisors needing retraining. The extended group sub-theme 2.2 are employees below supervisory level whom the framework initially was not extended to. Finally sub-theme 2.3 indicates the ideal method to deliver training to employees.

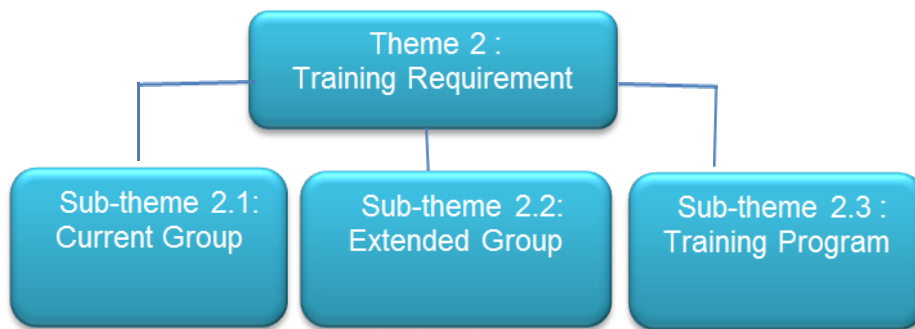


Figure 4.4: Coding Hierarchy Tree for Theme 2

The study finding identified training requirement within the previously trained group, untrained group and a need for different approach to training. This is illustrated by Figure 4.4 above. The majority of respondent addressed the need for training and its importance.

‘Training is the ultimate...transfer of knowledge I think is of utmost importance.’ (R9)

The respondent felt understanding is key to overcoming the hurdle of embarking on something new.

Sub-theme 2.1: Current group

In the implementation of the framework, from first line managers (supervisors) to senior managers were the only group the system was rolled out to and were given training. A framework handbook was given as a referral manual. The respondents expressed a strong opinion regarding more training being needed.

‘I wouldn't say that it was explained well. It was too much info thrown at once.’ (R8)

‘The reason I think that people wouldn't comply is because they don't understand the system, they don't understand the consequence of not complying...So they need to be developed and to make sure that they understand.’ (R6)

Sub-theme 2.2: Extended group

Almost all the respondents felt strongly about this group of workers who were excluded in the initial rollout of the framework. The level below Supervisory is quite big and that group did not get trained. It then became the supervisors' task to cascade information down to their teams. One of the reasons for concern is that:

'Only up to foreman got training then meant to train the bottom but, some of it gets lost as it's going further down the line.' (R9)

Another said:

'Down here, which is 90% of your people, are blind.' (R8)

Two respondents even took it a step further and mentioned that the site has business partners in the form of service providers, therefore everyone who is within the workflow must be involved.

'Train everyone including service providers...90% of guys are not trained on the system including service providers, a big concern.' (R11)

Sub-theme 2.3: Training program

The respondents identified the methods through which training should be carried out for training to be effective. They felt that the company needs to ensure that the system is understood perfectly.

'Training must come from one direction, different people conducting training on different people, a mess...' (R8)

One respondent suggested a different approach to training facilitation, one that would entrench good understanding, which was different to the workshop setup provided initially:

‘...you will get your person or individual that cannot stand up in a conference room...they need to make the groups smaller, maybe 10 or 5 people at a time, discuss, train and convince them...’ (R1)

Another respondent agreed with R1 regarding adopting a different approach to delivering knowledge for good understanding.

‘...implementing slowly, integrate it on step basis. Top level then next, like that and maybe in bits and pieces of framework to adjust...’ (R7)

Another respondent took it further by mentioning how it can be entrenched and become a continuous individual development.

‘People must be allowed to stay longer on a role. Refresher training or awareness 6 monthly...’ (R6)

All the training needs were summed up by this respondent:

‘...people will also be empowered if they receive all the necessary training.’ (R2)

4.3.3 Theme 3: Employee engagement

The consistency in ensuring employees are engaged was raised by respondents. Respondents had mixed views on what is required to keep employees engaged to ensure compliance to system. The study found that good leadership, good employee conduct, high job satisfaction and good training program will accelerate employee engagement. An engagement will signify employees belief to a system. Figure 4.5 display the codes that characterises the employee engagement.

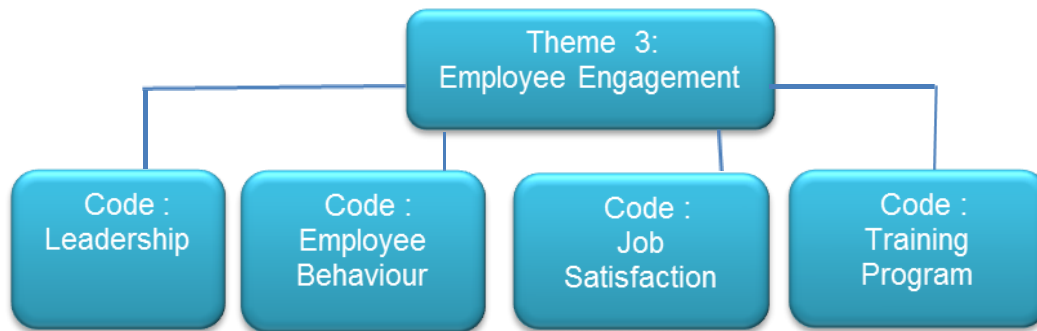


Figure 4.5: Coding Hierarchy Tree for Theme 3

Figure 4.5 illustrates this in the form of codes labelled from the respondents' statements made during the interviews. The first code on the employee engagement hierarchy was leadership. One respondent stated that compliance rests purely with a leader.

'For it to get excellent results it needs good leadership only...' (R4)

One respondent felt that people are engaged, but that the constant changes in managements break the momentum.

'...change in leadership drops the ball.' (R3, R2)

One respondent highlighted their satisfaction with the plant's senior manager:

'...current leader is great has an open door policy.' (R7)

The following respondent statement indicates the influence leadership can have on pushing the initiative forward.

'...because now we follow this bits and pieces that are comfortable for us, but not entirely embracing this framework. For example there are some template we were issued with on the framework, we only implementing it last week because we were being asked questions from high authorities.' (R12)

Another aspect that affects employee engagement that most respondents noted was challenges with people's behaviour.

'The challenge is to adapt to something new because...I could say the full understanding of it [the framework] we didn't really grasp it. Because what we took from it is only what we use every day. We didn't use it all...so we never really go through it thoroughly.' (R9)

The respondents felt in some instances that they were reverting to their old ways, which they blamed on comfortability and familiarity with the old manner of doing things.

There were a few respondents who felt that what is keeping them engaged is job satisfaction thanks to the framework. One respondent commented that being engaged and comply with system came easily because the structure and focus brings objectivity to individuals. The respondents emphasised this by saying:

'It is more balanced, but exactly what's there is what's required of me...' (R3)

'...meeting agenda given, it impressed me because everything was set.' (R2)

Another respondent gave a reason for his personal commitment to the framework by stating what it does for him.

'I like the sheer excellence approach because it gives you proper guidelines...' (R9)

The respondents suggested that the continuous training was found to be an encouraging way of keeping employees engaged.

4.3.4 Theme 4: Communication

The study found communication as a significant factor in the compliance with Sasol Wax's operations improvement system. Communication issues revealed by this study are displayed in Figure 4.6 below.

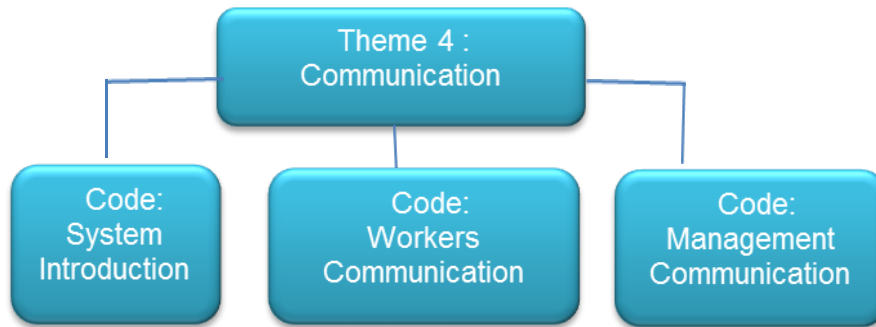


Figure 4.6: Coding Hierarchy Tree for Theme 4

The study's findings indicate that there are gaps in communication with regard to the operation of the framework. Figure 4.6 illustrates the codes related to communication as highlighted by the respondents, who were happy with the manner in which the framework was first introduced to the site. The company used many communication platforms to bring about awareness, including emails, banners and posters.

'...guys did a whole series of communications...' (R7)

The communication was followed by a briefing, where individuals were informed how each would fit into the framework.

'They explained the whole framework to us and where we fit...' (R3)

One respondent agreed that there was good communication, but felt that the content did not communicate it in a manner that could be understood by everyone.

'...work model poster must be packaged and simplified to speak the general worker language.' (R4)

The poor communication amongst employees was mentioned by respondents, which is affecting the way the system is meant to work.

'Departments don't communicate with each other. Some things need to be discussed beforehand.' (R10)

In order to utilise the system as designed, and therefore to comply, the respondents felt that there is a visible and obvious communication breakdown amongst the teams. This was attributed to a lack of understanding, however, not necessarily willingness.

'...workers and supervisors not speaking same language as others not trained.' (R11)

The respondents added that there is much needed communication session between management and employees. The respondents requested that management make time to discuss this subject with the workers in order to pave the way to resolving issues for improvement purposes.

'I think that they need to create an environment where they are open to listening to people's issues and taking it seriously...We all have to be open to criticism.' (R3)

Another respondent said:

'...the floor should be open for questions and feedback given to them timeously...' (R2)

4.3.5 Theme 5: Sustainability

The study found that changes are needed before sustainability can be achieved. These changes suggested by respondents are displayed in Figure 4.7 below.

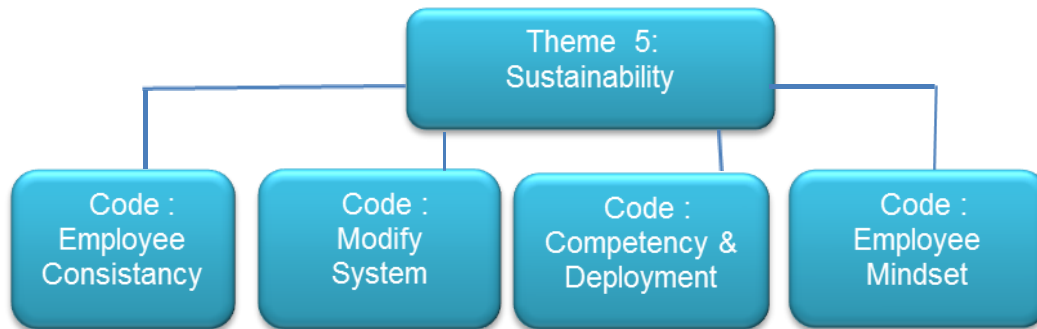


Figure 4.7: Coding Hierarchy Tree for Theme 5

The respondents highlighted the statement as seen in hierarchal code tree in figure 4.7 as significant in ensuring that the framework is entrenched within the business operations and therefore sustainable. One respondent did admit that there is a lack of consistency.

'We are not consistent in complying with the model...' (R3)

Another respondent mentioned that there is still so much to be corrected, both in the system and amongst the people, for conformance to be achieved. This must be rectified before looking at how it can be sustained into the future.

'I say that they have made it too complicated. It actually puts people off...' (R8)

Another said:

'Create a framework for dummies. Framework must talk to people in that language simple!' (R4)

The issue of individual competency was highlighted and a problem that management needs to address. Employees feel they don't occupy positions for longer period of time to gain much needed knowledge.

‘...chop changing people makes them incompetent...’ (R6)

R6 is describing rapid changes in positions and people and refer to it as “chop and changing” The respondent feels the continuity will be a challenge because people feel of out of depth most of the time due to occupying new roles rapidly. There must be enough time given to individuals in their jobs until they know what is required for that role before making a move.

The majority of the respondents raised an issue of people’s behaviour as impacting the sustainability of the system. People need to change their mind set then the rest will follow. People need to do it right before looking on how the framework can be sustained.

‘They are still doing things like they were trained 10 years ago to do it. They are still complacent...’ (R1)

‘We are still not 100% compliant. I think that in Durban we are not yet even 50% when it comes to compliance... people that are not comfortable you found them going back...’ (R2)

The respondents felt that a good system will not happen by itself; it is up to people and how they are managed and compelled to conform to system to makes it work. The responses emphasised an element of individuals’ behaviour as being significant for success and sustainability.

‘Everything is there on paper, not that it is going to be practiced, if some people won’t do it...’ (R8)

Another respondent felt the way to get compliance with this system lies within individuals:

‘People must get their mind-set around the new operating model...’ (R3)

Another view point mentioned by a respondent was to let the framework be encapsulated within an individual's Key Performance Indicator (KPI) contract.

'If individual know that doing it accurately at all times is linked to your KPI's there will be conformity, I guarantee...' (R8)

Two respondents felt strongly that non-compliance issues are the result of training gaps in that people's behaviour may be a manifestation of lack of knowledge. These respondents uphold the issue of a training gap, and felt other concerns are secondary.

'...even ourselves we don't know 100% because, as I told you, we were just splashed with it...' (R8)

'I actually liked it, but what I wasn't very very happy about was the rollout...' (R9)

One respondent who mentioned a unique perspective on the framework stated:

'I would really say training and review is the most important. Even for sustainability is the dynamic situation. Currently macro economics are affecting us, for example look at the oil price, it is low. So we have a need to change anything even for the framework to respond to that. The initial implementation was to save money, cut back on resources where there are duplication of roles. Now even we have cut back the oil prices is lower for longer, so the money saved has sunk. So its time for phase two of framework already...' (R12)

4.4 Conclusion

In this chapter, the analysis of the data collected from the interview participants was presented. The qualitative analysis was displayed in the form of themes and sub-themes. The next chapter examines the analysis and discusses the findings.

CHAPTER 5: DISCUSSION

5.1 Introduction

The previous chapter presented the results of the qualitative data analysis, while this chapter interprets and discusses the findings from the in-depth analysis. A detailed discussion focuses on five themes and five sub-themes. Similarities and differences are drawn between study findings and existing literature discussed previously. The purpose of this study was to identify the factors leading to compliance with the operational improvement system at Sasol Wax. The diagram below displays the network of relationships leading to compliance. The node's design represents its meaning, while lines show the direction of the flow of matter. The diagram consists of an oval defining the action to be taken, the triangle indicates an event, and lastly the square indicates a condition of situation.

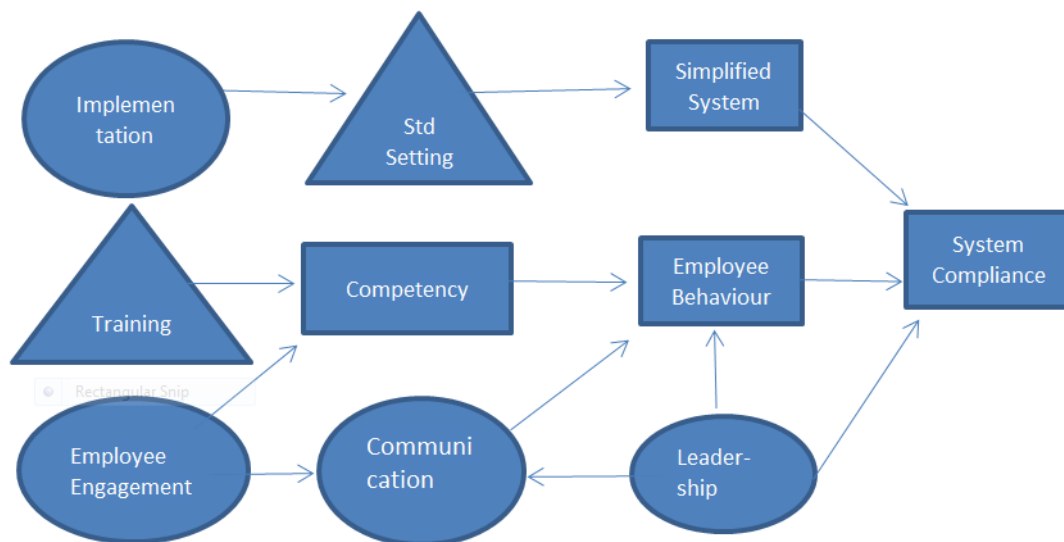


Figure 5.1: Causal factors network display

The above illustration represented in Figure 5.1 symbolises the milestones, critical activities and their connection to one another building up to complying and sustaining the operational framework.

5.2 System functionality

The first theme under review is system functionality. The essence of the system functionality theme is to assess the system's features and how those features are received by the end users, i.e. the employees. The system features that were identified by employees were job scope, operational structure, integration and multi-disciplinary design view. The announcement of job scopes for employees was received well by most participants, as there was transparency and people were able to classify where and how everyone fit in. One respondent raised a concern with regards to the issuing of job scopes, in that employees tend to adhere to their job scopes too rigidly. The employee further explained that in some instances, people are required to take up tasks outside the defined scope and no one is willing to move beyond their boundaries. This highlights the possibility that some activities are not defined by the operational system.

This finding revealed the presence of misalignment, a concept discussed previously on that system must be all-inclusive (Sarshar et al., 2004). The system must encompass the business context, operational scope, plant size, and the principle of context-awareness discussed earlier (Brocke et al., 2014). While it is noble for any employee to go the extra mile, caution must be taken for safety reasons to not walk into unfamiliar territory. Nicholas et al. (2010) commented that task misalignments are sometimes the source of system problems. The findings found correlation with the literature as both Sarshar et al. (2004) and Sikdar (2014) made reference to misalignment.

The operational structure of the system was welcomed by most respondents and includes meeting agendas, a reporting structure, weekly planning sessions and daily recaps. The principle of PDCA is entrenched in every task and applied daily, it ensures that the plant is still aligned with the overall system. Sikdar (2014) mentioned that a new business process creates a change in the organisational system of relationships, workflows, tasks, and structure, so there is a need to develop an understanding of how the new business process is aligned with the overall organisational system

Integration, i.e. synergy between departments, is one of the system's feature that was identified by the respondents as lacking. There is no collaboration, particularly on plan execution, because of a lack of co-operation between individuals. This non-compliance with the framework by the individuals may be defined by attitude and intention. This theory was defined by Sommestad et al. (2014), who stated that a predecessor of actual behaviour is intention, and that intention has a predecessor called attitude. Respondent R6 was specific in that, not all disciplines are conforming to framework's activities, therefore the framework does not have big chance of succeeding.

The framework was crafted from the multi-disciplinary view point. The location for this study was the Sasol Wax satellite operation, the standard operating framework was implemented in all Sasol divisions. The respondents felt that their uniqueness and the size of the satellite operation was not considered from the design stage. This indicates a violation of the principle of context-awareness as discussed previously, i.e. a system must ensure that it covers the business context in terms of scope, nature and size (Brocke et al., 2014). The satellite operation does not have extended human capital like other divisions, hence the site is expected to encompass all the activities defined by framework but with limited staff. A similarity is drawn between this finding and what Brocke et al. (2014) explained earlier, i.e. that the business operations models should not be overly engineered, but be limited only to what is necessary.

Two sub-themes emerged from the system functionality theme, namely objective and application. The objective sub-theme captures the system's usefulness while the application sub-theme captures the system's ease of use. Nicholas et al. (2010) also commented that factors contributing to compliance are the system's ease of use and usefulness. An understanding of the fundamental objective of the system by employees is important, as the business environment has seen the automation of processes and the installation of robots, with the intent of phasing out the human factor. Fortunately, Sasol Wax employees seemed to have a common understanding that the framework is intended to standardise operations across all divisions, improve profits, and ensure safety target are continuously met. The interpretation of

the respondents regarding the purpose of system is thus similar to the company's original intention of implementing the operations improvement system.

An assessment of the system is undertaken once it becomes operationalised, which defines the system application. The study finding correlates to Sikdar (2014) regarding the notion of operationalising the system as per Higgins's 8-S model, which came under criticism by Kettinger et al. (1997) who said that effective operationalising is done through process flowcharts and activity-based costing. The method of operationalising that emerged from this study is consistent with the method argued by Sikdar (2014), but found differences with the manner of operationalising as presented by (Kettinger et al., 1997). The respondents were largely in agreement with the operationalising approach of streamlining and aligning structures, processes, staff and resources, but two respondents wished that the procurement department be decentralised due to an increased to order lead times.

5.3 Training requirements

Bolboli and Reiche (2013) mentioned training as one of the structural factors of success, which this study finding attests to. All the participants expressed a strong opinion that system understanding is significant for compliance. The findings are consistent with the literature by Eikebrokk et al. (2011), who said that a lack of education on a system negatively influences success. This study found a gap in the quality of the training provided, as the employees indicated that during the training sessions information was provided in big chunks so it was not easy to understand. This findings highlights a correlation with study by Barber et al. (2003) that, reduction approach improves system adaptability as it is broken down into sub-systems.

The training was also conducted as workshops sessions on different occasions, which meant that different facilitators conducted the workshops. The respondents thus felt that the delivering of information to employees was not uniform. The employees' concerns correlate with Blasini and Leist (2013), who attested to the fact that "Information quality" is the most mentioned success factor and includes "communication" and "inclusiveness". The respondents' argument in this case on training quality is valid, as they are in agreement with the theory. The study interview participants identified that the training should not be a once-off event, but a

continuous intervention. The respondents added that the company's focus should be on developing employees and empowering them. A correlation was found between Al-Mashari and Zairi (1999) and study finding, that teams and individual empowerment are important elements as they establish a sense of responsibility and accountability. The study findings concurred with Hu et al. (2015) on training as a critical factor.

The study further revealed that employees below the supervisory level need to receive training, as the concern is that the group below the supervisory level is big and does not speak the same organisational language as their supervisors. The study found similarities with research by Brocke et al. (2014) regarding importance of sharing common language amongst all stakeholders. It was left to supervisors to train the rest of the employees and transfer knowledge to their teams. This is again where the issue of information quality surfaced, as discussed previously by (Blasini & Leist, 2013). One respondent added that training should even reach service providers, while some respondents were of the opinion that having a system that not everyone is accustomed to while chasing the same vision is an unnecessary team division which derails progress and kills synergy.

Another sub-theme that emerged from the study under training requirement was the manner of how the training and development of employees should be conducted. A suggestion that came from the respondents was that training sessions must be done in small groups, this creates a good platform for people to ask questions comfortably and therefore understand the content. Another respondent suggested a refresher training course every six months.

5.4 Employee engagement

In this study, two of the respondents were of the opinion that to engage employees in an initiative takes good leadership. In their view, a leader is the driver of the success of a system. Consistency was found between this finding and the view by Xu and Thomas (2011), who said that a leader's behaviour should focus on the support and development of their team, and encourage employee engagement. The finding further highlighted another point which results in employee disengagement - the frequent change in leadership. A new leader comes with different style of leadership

and focus is changed. Another respondent added that one more framework activity was recently taken on by the team because top management were enquiring on framework compliance. This signifies the influence that leaders have towards pushing the full adoption of a system if the pressure is exerted on employees to comply. This is consistent with the statement by Maseko (2011) discussed earlier that leadership style determines success of the objective to be delivered.

The significant element that resonated with most respondents in this regard was individual behaviours. Some respondents indicated that employees are engaged but tend to move back and forth between the old and new system. Another respondent attested to this, reasoning that it is easy to revert to something familiar and comfortable. This phenomena was defined earlier by Gozman (2014) as displacement, which was stated as causes of non-compliance to a system. The analysis of this study finding indicated that the effect of displacement is present in this study than layering. Displacement is an institutional change that creates a compliance gap, as users are still searching for synergy. The institutional change is assumed to be caused by the introduction of a new system that replaces an existing system. There was no correlation found on compliance enforced by applying the deterrence theory as there was no indication of rewards expectation or fear of punishment at Sasol Wax (Hedström et al., 2013). This revelation highlights inconsistencies of literature with findings on deterrence theory.

5.5 Communication

The respondents acknowledged that the initial communication around the system's introduction was done well across all accessible platforms, yet they felt that communication between departments is not happening well as defined by the framework. The importance of communication was emphasised in earlier discussion, which attest that there must be a good activity co-ordination by core drivers of framework. Correspondent between the study findings and Wahid and Corner (2009) on the criticality of communication amongst role players. The respondents suggested that management provide a platform so that issues pertaining to the system can be tabled openly. The respondents further suggested that everyone within the site be trained so that they can all speak same process language to improve communication. When employees are not aware of terminology, they lack

practice and it lead to implementation failure all because of training failure (Khuluse, 2015). The principle of joint understanding introduced by Brocke et al. (2014) was found to be consistent with the study findings, as the respondents indicated that the cause for poor communication amongst the operational staff is a lack of common process language. The study finding correlate with Blasini and Leist (2013) on the importance of information quality and inclusiveness.

5.6 Sustainability

The respondents pointed out two significant areas that require fixing - the system design and people's behaviour - after which sustainability can happen. The respondents added that the system has to be simplified. A correlation was found between this study's finding and research by Brocke et al. (2014), that the complexity of a system reduces the level of compliance. The study findings are also in correlation with Eikebrokk et al. (2011) that a system must be made simple before employees will perceive it as useful and then comply. The majority of the respondents were of the opinion that success is heavily reliant on employees' compliance with the system. On this point of employee behaviour, a correlation can be drawn between the respondents and Eikebrokk et al. (2011), that two elements bring about compliance, technology acceptance and positive user behaviour.

It was indicated that to encourage sustainability, the company must attach it to an employee development programme linked to promotion, incentives or KPI. Sustaining operational excellence include ethics management, individual and leadership development (Ferdowsian, 2016). The issue of ethical foundations was not highlighted by this study. The issue of training also reappeared during the sustainability discussion, as the respondents believed that employee's lack of compliance with the framework is in response to lack of knowledge about the system. For sustainability a system must be entrenched within the operations processes (Reddy, 2013). No strong correlation was found between the study and game framing theory and theory of planned behaviour, however there was a similarity to the theory of reasoned action and institutional theory. The theory of reasoned action emerges as employees are sensible with regards to the company framework. Furthermore, the reasoning provided seem to be stemming from social and personal factors. The institutional theory plays a significant role in this study and

was visible in the findings (Braunscheidel et al., 2011). The study findings indicated that respondents are inclined to embracing the similar system as other divisions. It was viewed as bringing the satellite operation employees into same platform as the rest of the divisions within Sasol group.

5.7 Conclusion

This chapter presented a discussion on qualitative analysis, making reference to existing literature. The five themes and five sub-themes were the basis for discussion. The similarities and differences between the findings and the existing literature was discussed and interrogated. The next chapter draws conclusion and gives recommendations.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the conclusion and recommendations of the study based on the findings obtained and discussed in the previous chapter. The purpose of the study was to determine the factors that lead to compliance with the operational improvement system at Sasol Wax Durban. The study's focus was to assess the perceptions of supervisors in the production, maintenance and planning departments. The study aimed at getting in-depth information from the participants in order to define the problem. The study also aimed to fill the existing gap in the body of knowledge where the views within this segment of employees are unknown.

The literature review focused on issues that may impact compliance, the system design, system management and individual behaviour. The study followed a qualitative research approach and purposive sampling was used to select the participants. Twelve semi-structured interviews were conducted and data thematically analysed. The section will begin by presenting key findings per research objective, followed by recommendations. Finally, this dissertation report will end by sharing some recommendations for any possible future investigations.

6.2 Key findings

The study's purpose was to determine the perceptions of the first line managers regarding the factors that lead to compliance with the operations improvement system. The study found that employee behaviour contributes to compliance issues. The non-complying behaviour is presence reflection of the system design and system management issues. The design issues were mainly system ease of use. Communication gap and training requirement contributed to system management issues. The next section will address the primary objectives for this study.

6.2.1 Objective 1

- To identify the factors that contribute to compliance with the Operations Improvement System in Sasol Wax Durban.

The first objective sought to determine what the contributing factors for compliance at Sasol Wax are. The study findings indicated that the respondents were pleased with the system's functionality. The results pointed to reporting structure, meeting agenda, planning sessions and daily recaps. The findings also showed that respondents feel a need for the framework to be modified, as the design must fit the scope and size of the satellite operation. The study also suggested that there must be a system revamp so that the modified version caters to the satellite operation's uniqueness and be made simple.

The study further indicated that fundamental tasks are required before framework implementation; a revision of the standard operating procedures and process flow diagrams will facilitate the necessary steps to set standards. The principle of this framework (PDCA) begins with a plan, therefore planning in the absence of set standards is a challenge. The findings also showed that there are areas of the system that are complicated that the floor staff may not understand well, thus the revised framework must ensure that complexity is eliminated.

The issue of training seems to be the most important factor for the system to move forward and for compliance to be achieved, as the study found that almost all the respondents attested to need for training. The findings of this research further highlighted that training should be given to all operational staff, and that the respondents feel that the training approach should change. The emphasis was on the quality of training, smaller class sizes, information being broken down, similar facilitators for everyone, and refresher training at certain practical intervals.

The research pointed out that there is inconsistency in individuals' compliance with the system. This is the area where individuals know what needs to be done and understand the method, but choose not to do things correctly. Based on these findings, some employees are not fully embracing the framework, thus the leadership has to play a visible role in modelling positive individual behaviours. The study also

revealed that some tasks within the framework are not being done and are only initiated when leadership places pressure on individuals, therefore leadership impact needs to be felt.

6.2.2 Objective 2

- To ascertain the benefits that employees derive from compliance with the Operations Improvement System in Sasol Wax Durban.

In terms of what the employees can gain if compliance is achieved, all the respondents credited the system objective. It was found that the standardisation of process, policies etc. created a common platform between satellite operations and other large plants within the group. The employees perceived this as an approach to equal treatment, opportunity and fair comparison across the group. The study findings highlighted that employees' view this standardisation as a levelling of the playing field, which will make things easier should an employee wish to move and grow within the group. The employees further revealed that in this way, they will benefit from career advancement and personal growth.

The study finding showed that there are also indirect benefits for all employees the improvement in profit margins signifies business stability and therefore job security; the optimum plant operations will ensure a high level of safety; and job satisfaction comes from an aligned structured, where everyone knows how they fit and what is expected of them.

6.2.3 Objective 3

- To determine how compliance levels of the Operations Improvement System in Sasol Wax Durban can be improved.

The findings from this study indicated that there is a gap in communication. The respondents are calling for management to engage in discussions with employees and hear their complaints. They added that if their issues were taken seriously, it could resolve many issues within the operation.

The findings further revealed a lack of communication between departments as defined by the system. The multi-disciplinary meetings are structured to discuss only what is relevant to all. There must be prior discussions amongst disciplines to ensure multi-disciplinary meetings are short, quick and straight to the point. For this reason communication barriers are to be addressed. The effect of displacement should also be stopped immediately (Gozman, 2014). The study findings revealed that individuals within the firm need to fix their mind-set, as the system's success is reliant on their responsiveness and behaviour.

6.3 Recommendations

6.3.1 Training and development

Top management support as well as training and development are critical for the success of business improvement programmes (Hu et al., 2015). Thus management must look into training all employees. This must include the re-training of the current group, training for employees below the supervisory level, and should consider training service providers. The benefits if employees are well trained are:

- Employees feel empowered (Hu et al., 2015).
- The level of resistance when employees are trained is reduced (Brocke et al., 2014).

6.3.2 Communication

The study recommends various levels of communication, the business should run briefing session to introduce the system, as was done during the initial implementation stage. This system re-introduction will address staff below the supervisory level, as well as the rest of the operational staff. The communication must be directed to call for all employees' involvement and their input into the system proposed revamp. The principle of involvement emphasises that all stakeholders affected by system must be involved as early as possible (Brocke et al., 2014).

6.3.3 System modification

The system must not be over-engineered but should rather be designed only for what is required (Brocke et al., 2014). The system must also accommodate all operational tasks to eliminate misalignment (Nicholas et al., 2010). According to Eikebrokk et al. (2011), systems must be made simple to improve the level of compliance thereto. The study findings indicated that the framework is somewhat complex, thus it is recommended that it be revamped to accommodate the size and scope of satellite operation and also shop floor staff.

6.4 Recommendation for future studies

The recommendations for future research are:

- Future studies can look into assessing perceptions of compliance with the operational system on employees' below supervisory level. The iceberg of ignorance Figure 1.1 indicated that 100% of problems are known to this group of employees.
- Conduct a quantitative research study of all first line managers, including other Sasol divisions, to get a wider comparison. It could also be a qualitative study with wider sample size.

6.5 Conclusion

The research purpose was to determine supervisors' perceptions of factors leading to compliance with the operational improvement system, while the research aim was to contribute to the body of knowledge regarding the development of theory around the topic of compliance with operational improvement systems. This initiative is viewed by stakeholders as a necessity for value creation and survival in these challenging times. The research introduced system design and behavioural theory as an angle to access the factors of compliance. The study findings indicated that compliance to operational improvement is a result of behaviour, which in turn is influenced by a number of factors. These factors were found to be system management relating to training requirement and leadership support, then system design relating to system functionality and simplicity. This was the study's primary goal to explore and gain insight into the problem. The study achieved its secondary goal of informing business management of essential work needed before introducing an improvement system these are; employee's involvement at system conceptual stage, good implementation plan and non-generic systems. Recommendations were discussed that may improve compliance to operational improvement system.

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LIST OF APPENDICES

Appendix 1: Informed consent

UNIVERSITY OF KWAZULU-NATAL GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

MBA Research Project
Researcher: Ms N Myeni (0832703777)
Supervisor: Dr Cecile Gerwel Proches (0312608318)
Research Office: Ms P Ximba (0312603587)

Dear Respondent,

I, Nontobeko Myeni am a Master in Business and Administration student, at the Graduate School of Business and Leadership, of the University of KwaZulu-Natal. I kindly invite you to participate in a research project entitled: "Perceptions of factors leading to compliance on an Operations Improvement System at Sasol Wax Durban". The study seeks to find answers to the following questions:

- What are the factors that contribute to compliance of the Operations Improvement System in Sasol Wax Durban?
- What are the benefits that employees derive from compliance of the Operations Improvement System in Sasol Wax Durban?
- How can compliance levels of the Operations Improvement System in Sasol Wax Durban be improved?

Through your participation I hope to gain understanding of the problem and contribute to the body of knowledge that may assist managers in the future when embarking on similar initiatives.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this study. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and Leadership, UKZN.

If you have any questions or concerns about participating in this study or about participating in the interviews, you may contact me or my supervisor at the numbers listed above. The interview should take about an hour to complete. I hope you will take the time to participate.

Sincerely,

Student/Researcher Signature:_____ Date_____

This page is to be retained by the participant

**UNIVERSITY OF KWAZULU-NATAL
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP**

**MBA Research Project
Researcher: Ms N Myeni (0832703777)
Supervisor: Dr Cecile Gerwel Proches (0312608318)
Research Office: Ms P Ximba (0312603587)**

CONSENT

I.....(full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

I hereby consent/do not consent to record the interview.

SIGNATURE OF PARTICIPANT

DATE

This page is to be retained by the researcher

Appendix 2: Interview questions
UNIVERSITY OF KWAZULU-NATAL
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

MBA Research Project
Researcher: Ms N Myeni (0832703777)
Supervisor: Dr Cecile Gerwel Proches (0312608318)
Research Office: Ms P Ximba (0312603587)

**Perceptions of factors leading to compliance on an Operations Improvement
System at Sasol Wax Durban**

Part A: DEMOGRAPHICS

1. What is your job role/level?

Middle management level	
Supervisory level	
Senior management level	
Executive level	

2. Which department do you work for?

Planning	
Maintenance	
Production	

3. Did you take part in the application of the new operating model?

Yes	
No	

Part B: OPEN-ENDED QUESTIONS

- How was the system first introduced? Who was involved?
- What elements of the system were you particularly impressed with and why?
- How does it fit into your daily duties? Please elaborate.
- What challenges were experienced with the system?
- What would you change/add/modify about the system?
- What was the purpose of standardising the operation? And what was your involvement?
- What returns does the company attain from your adherence to the system?
- What returns do you as an individual attain from adherence to the system?
- What personal characteristics that will empower an individual to adhere completely?
- What company conditions can stimulate an individual to adhere completely?
- What suggestions do you have to assist the company in ensuring better implementation, adoption and maintaining drive on such a framework?
- Is there anything that you would like to add?

Appendix 3: Ethical clearance letter



30 March 2016

Mrs Nontobeko Myeni 214579166
Graduate School of Business and Leadership
Westville Campus

Dear Mrs Myeni

Protocol reference number: HSS/0248/016M

Project Title: Perceptions of Factors leading to compliance on an Operation Improvement System at Sasol Wax Durban

Full Approval – Expedited Application

In response to your application received 10 March 2016, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully



Dr Shashika Singh (Chair)
Humanities & Social Sciences Research Ethics Committee

/pm

Cc Supervisor: Dr Cordia Garwele Proches
Cc Academic Leader Research: Dr M Hoque
Cc School Administrator: Ms Zarina Ballyra

Humanities & Social Sciences Research Ethics Committee

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Website: www.ukzn.ac.za



Founding Campuses: Edgewood KwaZulu Natal Medical School Pietermaritzburg Westville

Appendix 4: Language editor letter

JENNIFER LINDSEY-RENTON

PO Box 68648
Bryanston
2021
30th June 2016

To whom it may concern,

This letter is to confirm that I am a professional editor and proof reader and that I have edited Nontobeko Myeni's thesis, the title being: 'Perceptions of Factors leading to compliance on an Operations Improvement System at Sasol Wax Durban'.

For any queries, please contact me on jenniferrenton@live.co.za.

Yours sincerely,

Appendix 5: Turnitin report



Turnitin Originality Report
Dissertation by Nontobeko Myeni
From Final Chapter (Dissertation)

- Processed on 01-Jul-2016 8:17 PM CAT
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