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EXTERNAL CHANGE MANAGEMENT: THE REVISED POLICY OF REGISTERED CONSTRUCTION HEALTH AND SAFETY AGENTS IN SOUTH AFRICA



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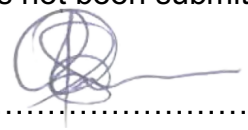
October 2020

DECLARATION

I, Sepelong Rebecca Khoza, declare that this research report is my own work. It is submitted in partial fulfilment of the degree of Masters in Construction Project Management (MSc) in the field of Built Environment, School of Construction Economics and Management at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other university.



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(*Signature of Candidate*)

October 2020

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To God Almighty; thank you for giving me the opportunity and resources to further my studies.

Dr Yomi Babatunde, my sincerest gratitude for your continued support and encouragement; being your student was worthwhile. I am genuinely appreciative that you did not tire of me during the time when I was at my lowest and managed to lift me up to do my best when I did not believe in myself.

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To my parents, Mr Karabelo and Mrs Ntaoleng Tlhapi, you have always been a pillar of my strength. I thank God that you have instilled the power of education in me. To my brother Motebang, thank you for being an all-round nice person and my sister Golaotseona, thank you for helping me to understand the gist of my research and for reading it and explaining it to me in a way no one else could.

To my daughter, the late Nsuku Khoza, you left us while I was still busy with my studies, and for some time I could not see the point of continuing because of the pain. This is for you. To your sister and brothers, Boipelo, Simekahle and Sukoluhle, thank you for allowing me time away from you to focus on my research. You are my life.

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ABSTRACT

Purpose: South Africa's construction industry continuously strives to improve its health and safety (H&S). Consequently, South Africa revised its Construction Regulations in 2014 to include the requirement for the application for construction permit to include a competent construction health and safety (CHS) agent. This research investigates how change management processes enable construction companies to effectively comply with the revised H&S policy requirement.

Design/methodology/approach: Using a cross-sectional survey design, an online structured questionnaire was sent to SACPCMP-registered construction professionals and construction professionals of a state-owned enterprise in South Africa using purposive sampling. 170 construction professionals responded (85% response rate). Likert scale/ ordinal data were collected on the factors affecting the registration for the CHS agents (Objective 1), understanding of the implications of implementing the revised H&S policy (Objective 2), applicability of the different change management strategies (Objective 3), and the attitudes towards organizational changes for implementing the revised H&S policy (Objective 4).

Findings**:** There was a strong agreement that H&S is best implemented in the early phases of construction project (Objective 1). Average understanding existed that any person who is interested in being an H&S agent can become one by going for an interview only (Objective 2). Also, there was a strong agreement that project participants' need to comply with the changes as required by the law (Objective 3) and that the attitude of top management towards change is positive (Objective 4).

Research limitations/implications: The construction professionals acknowledge that the revised H&S policy needs to be adhered to, as per the law, however there are hindrances to being registered because of factors that can be sorted out by management and how they roll out the change management within the companies.

Originality/ Value: The Ingenuity of the research is based on the change management in the context of the revised H&S policy in South Africa.

Key words: Agents, Change management, Construction, Health and Safety, Policy.

LIST OF ABBREVIATIONS

Abbreviation	Description
CHSA	Construction Health and Safety Agent
CV	Coefficient of Variation
CHS	Construction Health and Safety
DoL	Department of Labour
GDP	Economic growth and gross domestic product
H&S	Health and Safety
MIS	Mean Item Score
OHS	Occupational Health and Safety
Pr CHSA	Professional Construction Health and Safety Agent
SACPCMP	South African Council for the Project and Construction Management Professions
SD	Standard Deviation
SPSS	Statistical Package for Social Science

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CHAPTER 1: INTRODUCTION

The construction site is an important place because many stakeholders and workers are involved in the construction activities (Toh, Goh & Guo, 2017). As a result, safety on the construction site is important to reduce hazards and risks of being injured or recording fatality at work (Vitharana, De Silva & De Silva, 2015). Safety is also one of the major factors affecting the image of construction organization and management (Stiehl & Forst, 2018). According to Lingard (2013), the International Labour Organization (ILO) estimated that at least 60,000 fatal accidents occur annually on construction sites around the world. This is possibly because the construction industry consists of high self-employed workers, and large number of seasonal and migrant workers, many of whom are unfamiliar with the construction processes (Vitharana, *et al*. 2015). Another reason is the lack of job-specific training and its interrelationships with other root causes of fatalities on construction sites (Eteifa & El-Adaway, 2018). Training is so important that ILO has a training manual on safety, health and welfare on construction sites as a guideline for reducing the incidence of injuries and illnesses among workers (ILO, 1999).

The construction industry is an important sector in terms of contribution to the economic growth and gross domestic product (GDP) of an economy generally (Dang & Low, 2011; Sánchez, Peláez & Alís 2017) and in a developing country like South Africa (van Heerden, Musonda & Okoro 2018). Despite its important socio-economic role, there is high frequency of accidents in construction, which makes it an unsafe, highly dangerous and complex industry (ILO, 1999). Accident rates are unacceptably high in the construction industry (Lingard, 2013), and poor health and safety has consequences for workers, organisations, society and countries (Sánchez, Peláez & Alís 2017; van Heerden, Musonda & Okoro 2018). These consequences include direct and indirect costs (Hughes and Ferrett, 2016). The direct costs are those directly related to an accident, treatment of an injury and any compensation offered to injured workers, including hospitalisation and medical costs, liability and property losses, sick leave administration, premiums for workers and temporary disability payments. The indirect costs may result from a series of accidents and are not directly related to an accident (Bayram, Ünğan & Ardıç, 2017; Bayram & Ünğan, 2018).

Despite the underreporting of accidents on construction sites (Lerer & Myers, 1994), documented costs of accidents on construction sites include negative impacts on productivity, cost, schedule and quality—leading to increased administration costs (Smallwood, 1999). Families and companies experience the economic and social impacts of construction site accidents in South Africa (Mthalane, Othman & Pearl, 2008). These economic and social impacts include decrease in standard of living and loss of productivity, and loss/injury of the family provider and the depression of employees and work fellows for the families and companies affected, respectively.

Occupational Health and Safety (OHS) reform processes in South Africa are based on open participatory processes because of the historically deep and justifiable distrust of unilateral decision-making (Hemanus, 1999). Congress of South African Trade Unions' (COSATU) deliberation with the South African government on the macroeconomic strategy tagged Growth, Employment and Redistribution (GEAR) focused on the priority given to job creation, reconstruction and development. The new OHS model that emerged emphasized co-operation between workers, employers and government in the elaboration and implementation of OHS measures at the national or regional level. South Africa's Construction Regulations have had an impact but nonetheless need to be amended to allow for a developmental approach to support the small and emerging contractors with limited resources and less structured OHS processes. Professional bodies in South Africa such as, notably, the Construction Industry Development Board (CIDB) and the South African Council for the Project and Construction Management Professions (SACPCMP) support the appointment and clear definition of competent construction health and safety (H&S) agents on construction sites.

Scholarly endeavors in South Africa have also focused on worker knowledge of OHS benefits (Pilusa & Mogotlane 2018), H&S implementation motivators (van Heerden, Musonda & Okoro 2018) and OHS challenges among small and medium sized enterprise contractors (Mashwama, *et al*, 2018). Since OHS affects productivity, other studies have extended to performance aspects such as the impact of high performance work practices on project performance (Iwu, Chapano, & Twum-Darko, 2018), perceptions of small business executives on determinants of performance (Hove & Banjo, 2018) and construction project management through building contracts (du Plessis & Oosthuizen, 2018). There are however few studies in South Africa on the

change management processes in construction companies to comply with existing and new H&S policies. Enforcing OHS policies improves compliance with OHS legislations/regulations and decreases accidents on construction sites (Tompa et al., 2016), ultimately improving performance and economic development. Existing safety cultures in workplaces both on- and off-site need to change to accommodate existing and emerging OHS matters for a more preventative approach (Kim, Park & Park, 2016). Safety culture influences OHS management practices in companies generally (Nordlöf et al., 2017) and change is necessary to both redress a poor safety culture (Pryor, 2016) and to create the learning environment to spread a good safety culture (Duryan et al., 2020)

Therefore, this research seeks to contribute to the literature on OHS in South Africa's construction industry through the conceptual framework of change management. More specifically, how construction companies in South Africa are managing their change processes for the revised policy by the Department of Labour (DoL) requiring the appointment of an agent who must:

a) manage the health and safety on a construction project for the client; and
b) be registered with a statutory body approved by the Chief Inspector as qualified to perform the required functions.

1.1 BACKGROUND OF THE STUDY

South Africa DoL's Construction Regulations of 2014 issued on the 7th of February 2014 encompassed a revision for registered construction H&S (CHS) agents (DoL, 2014). The revised policy required construction clients to appoint competent CHS agents, whose details should be submitted in the application for a permit to do construction work. Section 3 of Construction Regulations 2014, which deals with the Application for construction work permit, is as follows:

1) *A client who intends to have construction work carried out, must at least 30 days before that work is to be carried out apply to the provincial director in writing for a construction work permit to perform construction work if the intended construction work will—*
    a. *exceed 180 days;*
    b. *will involve more than 1800 person days of construction work; or*

c. *the works contract is of a value equal to or exceeding thirteen million rand or CIDB grading level 6.*

DoL issued another notice in March 2014 exempting all construction works where physical construction started after the 7th of February 2014 to only comply with the Construction Regulations 2014 from the 7th of August 2014 (6 months after announcing the new regulations). Construction works where physical construction that started on or before the 7th of February 2014 were to comply with the Construction Regulations 2003 until the 6th of August 2015 (18 months after the announcement).

As of July 2018, DoL's communication to clients, contractors, designers, CHS professionals/practitioners and CHS stakeholders regarding the application for construction work permit in terms of the Construction Regulations 2014 had expanded as follows (Saiosh, 2018):

> *A client who intends to have construction work carried out, must at least 30 days before that work is to be carried out apply to the provincial director in writing for a construction work permit to perform construction work if the intended construction work starts from the* 7th of August 2018 and will—
>
> a) *exceed 365 days and will involve more than 3600 person days of construction work; or*
> b) *the tender value limit is Grade 7, 8 or 9 of the CIDB grading.*

These revisions to the requirements for the CHS agents accorded with the continued effort to redress the poor H&S performance record of the construction industry in South Africa (Ledwaba & Nhlengetwa, 2016. Pilusa and Mogotlane (2018) supported that the emergence of Construction Regulations 2014 was to protect workers against OHS risks to ensure safety at work. Construction Regulations 2014 required all state-owned entities to implement by the due date of the 7th of August 2018 to avoid contravening the law of the country. Also, the changes mirrored those experienced globally since OHS regulations around the world over were being subjected to major revisions during the three decades preceding 2020 (Singh, 2017).

However, there was inattention to change management processes that construction organizations need to go through to implement the new requirement. The safety culture/climate depends on the maturity levels of companies (Kim et al., 2019;

Goncalves Filho and Waterson, 2018), which determine the resilience of construction companies and workers (Chen, McCabe & Hyatt, 2017); for example, to new and emerging OHS policies. Safety change management is premised on integrated management of organizational and technical changes (Gerbec, 2017). The registration for CHS agents with the SACPCMP was only required when practicing H&S in the construction industry, as prescribed by the Project and Construction Management Professions (PCMP) Act, 2000 (Act No. 48 of 2000) and the Construction Regulations 2014. There is a limited number of registered H&S agents according to the SACPCMP and those that applied for registration and got interviewed were rejected or requested to come back for re-assessment after a couple of years. The reasons for the unsuccessful interviews were attributed to non-awareness of the OHS requirements across SACPCMP's six stages for managing projects as presented in Table 1.1

Table 1.1 Six (6) Project Management Stages

Stage number	Stages:
1	Definition.
2	Initiation
3	Planning.
4	Execution
5	Monitoring & Control.
6	Closure

1.2 PROBLEM STATEMENT

Proper implementation of OHS legislation enhances safe work processes and working environments. The challenge with the implementation of revised OHS legislation is that workers' and managers' knowledge of such legislation is limited, thus impairing adherence (Pilusa & Mogotlane 2018).This is particularly dismal for construction organizations without the necessary change management culture in place for organizational and individual resilience. Consequently, the absence of safety change management system affects understanding new H&S requirements and the implementation/registration thereof. Suffice to say that the right attitudes toward organizational change is a necessary precondition to understand the policy change and registration factors for the necessary implementation strategies.

1.3 THE AIM OF THE STUDY

The aim of this study was to investigate how change management processes enable construction companies to effectively comply with the revised H&S policy requirement.

1.4 RESEARCH OBJECTIVES

To achieve this aim, the four objectives of the study were to:

Objective 1: investigate the factors affecting the registration or appointment of the CHS agents as required by the new H&S policy;
Objective 2: assess project participants' understanding of the implications of implementing the new H&S policy;
Objective 3: explore the applicability of the different change management strategies for implementing the new H&S policy; and
Objective 4: establish the prevailing attitudes towards organizational changes for implementing the new H&S policy.

1.5 RESEARCH QUESTIONS

Research Question 1: What are the factors affecting the registration or appointment of the CHS agents as required by the new H&S policy?
Research Question 2: What are project participants' understanding of the implications of implementing the new H&S policy?
Research Question 3: What are the different change management strategies for implementing the new H&S policy? And
Research Question 4: What are the general attitudes of the project participants towards organizational changes for implementing the new H&S policy?

1.6 LIMITATIONS OF THE STUDY AND RESEARCH ETHICS

The research was limited to a large state-owned enterprise in South Africa, the H&S legislative arm of the SACPCMP, and CIDB registered contractors. It is acknowledged that a latter confirmatory study using multiple case studies will offer more insightful results. The study is a descriptive, albeit quantitative, study which focused on describing the prevalence of the different aspects of change management in the context of implementing the new/revised H&S policy without establishing any cause.

This approach sufficed for the scope of this present study but nonetheless posed limitations in the extent that the results can be generalised. Perhaps future studies may focus on confirmatory or qualitative study to have a deeper understanding of the different aspects of the phenomenon of change management as applicable to implementing H&S policy.

1.7 RESEARCH STRUCTURE

Chapter one **–** This chapter outlines the introduction, background of the study, problem statement, aim of the study, research objectives, research questions and limitations and assumptions of the study.

Chapter two **–** This chapter aims to review literature related to the four objectives of this study to provide the necessary insights and knowledge for the primary information/data to seek during the fieldwork.

Chapter three **–** This section covers research methodology, which explains and justifies the systematic/scientific process followed in this study to collect and analyse the different data related to the objectives.

Chapter four **–** This chapter presents the profile of the respondents including the response rates. It discusses the data analyses and findings/results for the different objectives in depth.

Chapter five **–** This last chapter discusses the theoretical and practical implications of this study, conclusions based on the results, and recommendations for a future research study.

1.8 CHAPTER SUMMARY

This chapter has introduced OHS in the construction industry including the direct and indirect costs of accidents on construction sites globally and in South Africa. This discussion culminated in the background of the revised H&S policy in South Africa from Construction Regulations 2003 to Construction Regulations 2014. With the effective date of the revision, the problem statement related to safety change management culture was presented. The aim of the study, research objectives, research questions and limitation and assumptions of the study have also been discussed. The implementation of the revised H&S policy through the conceptual lens of change management is what this research sought to interrogate.

CHAPTER 2 – LITERATURE REVIEW

2.1 OVERVIEW

This chapter covers the literature review on the construction industry, the revised H&S legislation in South Africa, occupational legislation and related H&S benefits and the underlying constructs under investigation. In doing so, this study utilised a wide range of materials, including, government publications, textbooks, internet searches, and journal articles sourced through electronic databases, to establish the necessary background for the study.

2.2 SOUTH AFRICA CONSTRUCTION INDUSTRY

Previous research has indicated that the construction industry has a big role towards achieving sustainable development (Venter, 2013). The South African construction industry is a major player in job creation due to its multiplier effects with some other major sectors of the economy. The industry makes use of a wide range of inputs that are from other industries producing goods and services, thus resulting in the construction industry directly and indirectly contributing to job creation in other sectors (Fonseca, Lima & Duarte, 2014). Some of the sectors that benefit from the construction industry include manufacturing, mining, and transportation. Despite the major role that the construction industry plays, it has been slow in adapting sustainable OHS practices due to non-functioning change management strategies.

Change refers to an alteration or modification of a pre-existing conditions, assumption or requirements (Teizer, *et al*. 2015), which also applies to OHS practices. Site accidents, occupational diseases and injuries do not only affect the person injured but also impact the economic and social conditions of the construction firms and families (Irumba, 2014). Moreover, the high risk of incidents increase the cost of construction, damage to the environment, non-conformance to quality standards and project delays. H&S is the responsibility of all the construction stakeholders. H&S agents are responsible for the safety of everyone in the building process (Iwu, Chapano, & Twum-Darko, 2018) while the construction company is responsible for managing the issues related to H&S on the construction site. H&S also has an impact on the bidding of a contract and it is because of this importance that the construction industry in South Africa seeks to continuously improve its H&S performance.

2.2.1 HEALTH AND SAFETY POLICY BENEFITS

H&S is relevant to all types of industry and is particularly important for the construction industry. When discussing H&S benefits, some fundamental OHS definitions and the lawful system for H&S are required because it is important to understand clearly the nature and working conditions involved in the construction industry. Health is the protection of the bodies and minds of people from illness resulting from the materials, processes or procedures used in the workplace (Alhajeri, 2011). Safety is the protection of people from physical injury. The borderline between health and safety is ill-defined and the two words are normally used together to indicate concern for the physical and mental well-being of the individual at the workplace (Alhajeri, 2011)

The purpose of H&S Act in the construction regulations is to eliminate potential hazards during the design and construction phases and the risk involved. H&S policy is important to both the managerial and employee in the construction industry. H&S policy is a valuable tool in this regard, in fact the importance of work related policies and procedures cannot be over emphasised (Raheem & Hinze, 2014). Proper application of the H&S policy could benefit the company as it reduces expenses, inconvenience and other costly accidents as it makes sure that the employees and people involved in the project know what is expected of them.

Workers are the greatest asset of any company. The implementation of the H&S policy will protect the workers. Following, the guidelines of the H&S policy will primarily protect both the employer and workers from injury, illness or any other related harm during construction. One of the best advantages of following H&S practices is to forestall common workplaces injuries like back pain, falling from height, asthma, injuries from slips and asbestos-related sickness (Hughes & Ferrett, 2016). H&S helps to reduce absences and in turn employers will save money on the direct costs such as salaries, medical bills and compensations in the case of death. It also benefits the company as it will be following the law of the government (Vitharana, *et al*. 2015).

2.2.2 OCCUPATIONAL HEALTH AND SAFETY LEGISLATION

South Africa's revised H&S legislation is expected to have an impact on the South African construction industry. All construction projects costing more than R13 Million, which is above CIDB level 6 have to apply to the Department of Labour (DoL) for a construction permit, according to the Institute of Safety Management (IOSM) in South

Africa. The South African Council for the Project and Construction Management Professions (SACPCMP) is the sole host of the Construction H&S professions registration and was established by Act of Parliament (Project and Construction Management Professions Act 48 of 2000). Management of OHS in construction has unique challenges. Despite such challenges, firms that demonstrate commitment to well-structured and well-funded safety programmes and techniques can effectively reduce incidents (Goh & Sa'adon, 2015). The occupational policy suggest that a full-time safety agent should be appointed for inspections for H&S measures to be conducted every day to ensure better construction H&S on sites.

2.2.3 APPOINTING A HEALTH AND SAFETY AGENT

The developments and challenges in the construction industry has led the South African government to promulgate legislation that requires construction companies to employ H&S agents in all their projects. It seems many construction companies have not been able to comply with this legislation, hence there has been an increase in accidents and incidents in the industry. According to Liphadzi, Aigbavboa & Thwala, (2015), it has been estimated that 20% of safety agents are employed in construction firms while 80% are self-employed. This creates problems for the construction companies who employ the agents who are not registered with any construction organisation. With so many changes, it is difficult to monitor an individual's work history. It is more difficult to find the right agents for the work given the time schedule of projects. Unlike in other industrial settings, where tasks are usually repetitive and controlled by the location of machinery, the construction site permits, and requires extensive movement by the employee from place to place (Jarad, 2012).

2.2.4 RELEVANT LITERATURE FOR THE STUDY OBJECTIVES

To fulfil the aim and objectives of this exploratory study, an integrative literature review is used to synthesise the existing relevant literature. The literature reviewed and discussed subsequently deals with the factors that impact the registration for a new policy, understanding of a new policy, change management strategies, and attitudes towards organizational changes.

2.2.4.1 FACTORS AFFECTING ADOPTING A NEW H&S POLICY IN A ORGANIZATION

This section addresses Objective 1 which investigates the factors affecting the registration or appointment of the CHS agents as required by the new H&S policy. The SACPCMP exists as a regulatory body for the project and construction management professions, and it is authorized to render advice to the government and other relevant stakeholders. The pieces of advice cover the necessary steps to be taken for the protection of the public interest, H&S, continuous improvement on the standards of the professions it regulates, and protection of the environment, among others.

The SACPCMP's annual report of 2018 also alludes to the fact that the Construction H&S (CHS) categories have seen an encouragingly increasing number of registrations but are still faced with frustrations resulting from an undeveloped profession. Also, the overall proficiency being hindered by an educational environment where tertiary studies at graduate level have minimal provision for CHS. The CHS Officers may be appointed in two ways:

- Client may appoint a CHS Officer directly to complement the management team. This does not imply that the client should not appoint/replace a Client appointed CHS Agent;
- Contractors may appoint a CHS Officer directly to monitor and assist on-site H&S performance and compliance in accordance with the OHS Act and Regulations.

SACPCMP acts as the overseer of the profession of CHS Officers, and as a consequence it is responsible for:

- The registration of CHS Officers,
- The prescription of the Code of Conduct,
- Monitoring the Continuing Professional Development (CPD) of each registered CHS Officer,

In terms of the Construction Regulations 2014, Reg 5(5)(7) and Reg 8(16) any "Agent" appointed to represent the client and any appointed CHS Officer must be registered.

The Department of Public Works (DPW) purports that construction companies' lack of implementing H&S practises is caused by financial constraints and lack of managerial skills. Consequently this leads to poor H&S culture. There is no equivalence of

obligation under law between employees and management, as they are accountable for providing direction to employees. DoL postulates that an organization's OHS policy is a statement of values and overall procedures that serves as a guide for action. Senior management should be committed to guaranteeing that the policy is carried out with no exceptions. The OHS policy statement must be brief and mention the below:

- Management's commitment to protect the H&S of employees.
- The objectives of the program.
- The organization's basic H&S philosophy.
- Who is accountable for OHS programs?
- The general responsibilities of all employees.
- That H&S shall not be sacrificed for expediency.
- That unacceptable performance of H&S duties will not be tolerated.

Also, the OHS policy should be:

- Stated in clear, definite, and unambiguous terms.
- Signed by the incumbent Chief Executive Officer.
- Kept up-to-date.
- Communicated to each employee.
- Adhered to in all work activities.

From an integrative review of the relevant literature (Bavafa, Mahdiyar & Marsono, 2018. Durdyev et al., 2017; Nordlöf et al. 2017; Williams, Fugar & Adinyira, 2019), Table 2.1 presents a summary of the factors affecting the registration of H&S policies among construction companies.

Table 2.1: Factors affecting the registration of H&S policies

Factors
H&S is best implemented in the early phases of construction project
The SACPCMP is the only body that is qualified to conduct the registration processes
Appointing a safety agent is done for conformance to the law
Employees know that they can only register as agents through the SACPCMP
There are enough skills to make sure that compliance is achieved during the execution of projects.
The contractors must also have a registered H&S agent when they start with construction
Employees understand the reasons why a safety agent is required on site during execution
The company encourages registration of H&S agents for compliance only
All construction projects should appoint a registered H&S agent
Company provides enough information regarding adherence to the policy change to employees
The company assists employees who want to be registered agents with resources to be able to meet the requirements for registration
The process of registration is easily understood by employees who want to be registered as H&S agents
Safety is improved when carried out by an external H&S agent
It is acceptable to have a safety person on site even if he/ she are not registered.
Projects do not struggle to appoint H&S agents during construction

2.2.4.2 REQUIREMENTS FOR UNDERSTANDING A NEW H&S POLICY

This section addresses Objective 2 which assesses project participants' understanding of the implications of implementing the new H&S policy. The OHS Act, 1993, "requires the employer to bring about and maintain, as far as reasonably practicable, a work environment that is safe and without risk to the health of the workers". It is imperative to train employees on H&S matters as this can unite employers and employees in the quest of a common goal, which is to create a safe workplace that ensures the safety and success of its employees. National Safety Council (2001) gives the reasons employees are required to understand a new H&S policy as follows:

1. **It is a legal requirement:** The OHS Act (OHSA) was instituted in 1994 in South Africa as a key part of legislation that requires employers and employees to take reasonable and practicable steps to ensure H&S in the workplace
2. **Risk is everywhere in the workplace:** It's important to elude becoming content with H&S procedures, and to evoke the sense that all workplaces are not 100% safe. Risks should be continually monitored and reduced in construction projects (Friis, 2008). The Management of H&S at Work Regulations 1999, advances that the minimum an organisation must do is:
    - Identify what could cause injury or illness in your business;
    - Decide how likely it is that someone could be harmed and how seriously; and
    - Take action to eliminate the hazard, or if this is not possible, control the risk.
3. **Efficiency:** Taking care of H&S can have a positive effect on increasing an organisation's competence and efficiency.
4. **Reduces unnecessary costs**: Organisations will be able to cut down on indirect costs to businesses when H&S is adhered to.
5. **Creates a Safe Company Culture:** The organisation can be able to build a good relationship with its employees when H&S is promoted in the workplace.

From an integrative review of the relevant literature (Choudhry, 2017; Karakhan & Gambatese, 2017; Tymvios & Gambatese, 2016; Zahoor et al., 2016), Table 2.2 presents a summary the different forms of understanding of the implications of implementing H&S policies among construction companies.

Table 2.2: Understanding of the implications of H&S policies

Understanding
Any person who is interested in being a H&S agent can become one by going for an interview only
Safety agents are driven by monetary benefits
Project participants know how the H&S policy amendments will affect the projects in construction
Registered agents provides clear definition of roles during construction
Having a safety agent on site helps to reduce unnecessary costs associated with the project
There is co-ordination between stakeholders when the H&S agent is on site
Having a H&S agent on site creates a clearer focus on the project objectives
Having a registered safety agent provides management with a sense of comfort during construction
Stakeholders become more comfortable when there is a registered H&S agent on site
Having a safety agent on site improves the execution of the project
There is a defined and clear responsibility on roles on site
Having a safety agent on site will encourage safe behaviour during construction
Having a H&S agent on site helps in identifying safety hazards timeously
Project costs are reduced when safety is adhered to clear lines of communication become open when there is a dedicated H&S agent on site.

2.2.4.3 MANAGERIAL STRATEGIES ON CHANGE OF H&S POLICY

This section addresses Objective 3 which explores the applicability of the different change management strategies for implementing the new H&S policy. A successful management of change in policy is crucial in an organisation for survival and to be competitive in the business environment. H&S policy is very vital in every project and when not managed correctly, it can lead to project failures (Backman, Verbeke & Schulz, 2017). While many papers have been written on the subject of H&S occupation, little information exists on the actual implementation of the policy by the organisations (Naylor & Clotfelter, 2018) from the perspectives of change management strategies. This present study fills this gap in the subsequent detailed discussions.

Managers are vital people in an organisation to strategize and improve the working conditions and thus sway the health of employees (Dessler, 2013). They are accountable for implementing changes in the workplace and work environment. Management commitment has a positive impact on the safety management system, which encompasses policy, incentives, preventive and emergency planning, control, training and communication (Fernández-Muñiz *et al* 2007). Surienty *et al* (2010) recognized that if management is committed to H&S then the connection with occupational H&S management implementation will be achieved. When senior management is committed and involved in the organisation's H&S, the implementation of OHS Management System (OHSMS) will be successful, (Chinda and Mohamed, 2008).

There are many strategies that management can use in order to ensure that implementation of these policies does not affect the employees' performance. Management commitment is agreed as the main significant factor by many researchers in occupational literature. This is according to Sizemore (2017) who reported that commitment and support by top management would significantly drive up the performance of safety in the business. The Employer should show their commitment by understanding the safety compliance and its requirements and ensure that everyone in the organisation know about their safety and health responsibilities (Harvey & Kitson, 2015). Buurman and Babovic (2016) explain that management commitment towards H&S policy compliance and the accountability of management to safety and health at the workplace can change behaviour of their employees.

Another strategy used by other industries in the implementation of the change of policy will be organisational commitment. Organisational commitment describes construct in terms of the extent to which an employee identities with and is involved in an organisation (Curry, Wakefield, Price and Mueller, 1986). Many construction accidents found are mainly caused by indications of safety non-compliance to safety requirements. Leaders convey vision and values through interaction and communication (Skocpol, 2016) and effective communication results in ordinarily understood goals and means to attain them in the least level. Effective communication is essential to attain safety and efficiency in the workplace. This communication can be through visible behaviour. Another way of communicating the revised policy can

be through a written communication of H&S policy statements that is concerning H&S roles and responsibilities, performance standards and findings from risk assessments.

Safety training is another strategy which has been proven to be effective when management wants to change policy. Safety training is important to educate the workers of potential accidents and potential hazards involved in their jobs. Hence, training and education programs play a significant role in the enhancement of safety in construction and it is important to increase safety awareness (Watts et al., 2015). Training aimed at workers and operators would not only reduce accidents, but may also reduce costs and save lives. Management must show that they have taken active steps to implement sound OSH management system, including proper risk assessments, reporting systems, safety plans, clear delegation of responsibilities, provide adequate resources and ensure that full information is disseminated to workers and other persons exposed to risks (Chelule and Legodi, 2016). A study by McDonald (2003) recommend that all sites should have the H&S offices which demonstrate a potentially strong role of H&S office can influence both behaviour and compliance of employees with safety requirements.

From an integrative review of the relevant literature (Gerbec, 2017; Ghodrati, Yiu & Wilkinson, 2018; Kim, Park & Park, 2016; Sroufe, 2017;), Table 2.3 presents a summary the different the different change management strategies for implementing H&S policies among construction companies.

Table 2.3: Change management strategies for implementing H&S policies

Strategies
Project participants' need to comply with the changes as required by the law.
Employees were informed by management about the changes in the policy.
The policy changes were communicated to all employees on time.
Employees know about the progress of compliance with the revised H&S policy
Top management is actively involved in the policy changes in the H&S sphere
Top management pay attention to the changes that the employees might incur because of the policy changes.
Employees view the revised H&S policy as a positive process
Employees know about the process of the revised H&S registrations
There is top down approach about the revised H&S policy
The external body that manages the registration process is known to all employees
The reasons for the changes were clearly communicated to the employees.
The changes will affect the projects during construction.
There is bottom up approach about the revised H&S policy
There is training with regards to change management
Employees knew about the policy change before it was published

2.2.4.4 ATTITUDES TOWARDS ORGANIZATIONAL CHANGES

This section addresses Objective 4 which establishes the prevailing attitudes towards organizational changes for implementing the new H&S policy. White (2014) posits that if the majority of employees recognize that the organization does not improve organizational mechanisms to change, such as top management commitment, allocation of resources, rewards, training, participation in the organization and implementation, the results of change will be a stressful experience. White (2014)

recommends that stress should form part of change management agenda. Dipboye and Dipboye (2018) argued that people involved in change management need to acknowledge that increased pressure and stress put on employees as a result of continuous organizational change suffer induced pressure. Dipboye and Dipboye (2018) advises organizations to incorporate a stress management programme within the change management programme. From an integrative review of the relevant literature (Goh & Chua, 2016. Loosemore & Malouf, 2019), Table 2.4 presents a summary of the different attitudes towards implementing H&S policies among construction companies.

Table 2.4: Attitudes towards organisational change

Attitudes
The attitude of top management towards change is positive
I have the intentional readiness for change in the organization
There is trust in leadership about a change
There is participatory management about a change
There is cohesion about a change
There is an ability of management to lead change
There is general support about a change
There is cognitive readiness for change among the employees
There is politicking about a change
There is employee involvement in the change process

2.3 CHAPTER SUMMARY

This chapter has reviewed and synthesized the literature with respect to the objectives of this study. This includes the internal and external factors that impacts the registration/appointing a H&S agent as per policy, requirements or preconditions for adopting a new H&S policy, the different change management strategies, and attitudes towards organizational changes. The literature recognised the associated issues with new policies and the strategies that management use within the construction company so as to perform change management resulting from legislation.

CHAPTER 3: RESEARCH METHODOLOGY AND DESIGN

3.1 OVERVIEW

This chapter covers the research philosophy, methods, design and the data analysis used to achieve the aim and objectives of this study. Saunders et al.'s (2016) research onion is used as a systematic way to discuss and justify the choices made under each layer. It explains the ethical choices made and how they were achieved for this study as well as the population, sampling technique its size.

3.2 RESEARCH ONION

According to Saunders et al., (2016), the onion layers give a more thorough description of the stages of a research process as it illustrates the stages involved in the development of research work. This means that the onion layer provides a more comprehensive description of the research process and its progression through which a research methodology can be used in any type of research.

When the researcher looks at the onion from the outside, each layer of the onion defines a more detailed stage of the research process (Saunders et al., 2016). Saunders et al sees research process as unwrapping of an onion layer by layer, for the inner layer to be seen the outer layer must be unwrapped first. To achieve any goal, it is vital that the correct steps be taken accordingly. When doing research, one step must be covered first before continuing with the next. The six Saunders research onion stages include:

- Research philosophy
- Research Approach
- Research strategies
- Research Choice
- Research time horizon
- Techniques and procedures

Figure 3.1 presents the six different layers of the research onion, proposed by Saunders et al. (2016) as a tool which helps to shape the research by following the layers of the research onion step by step.

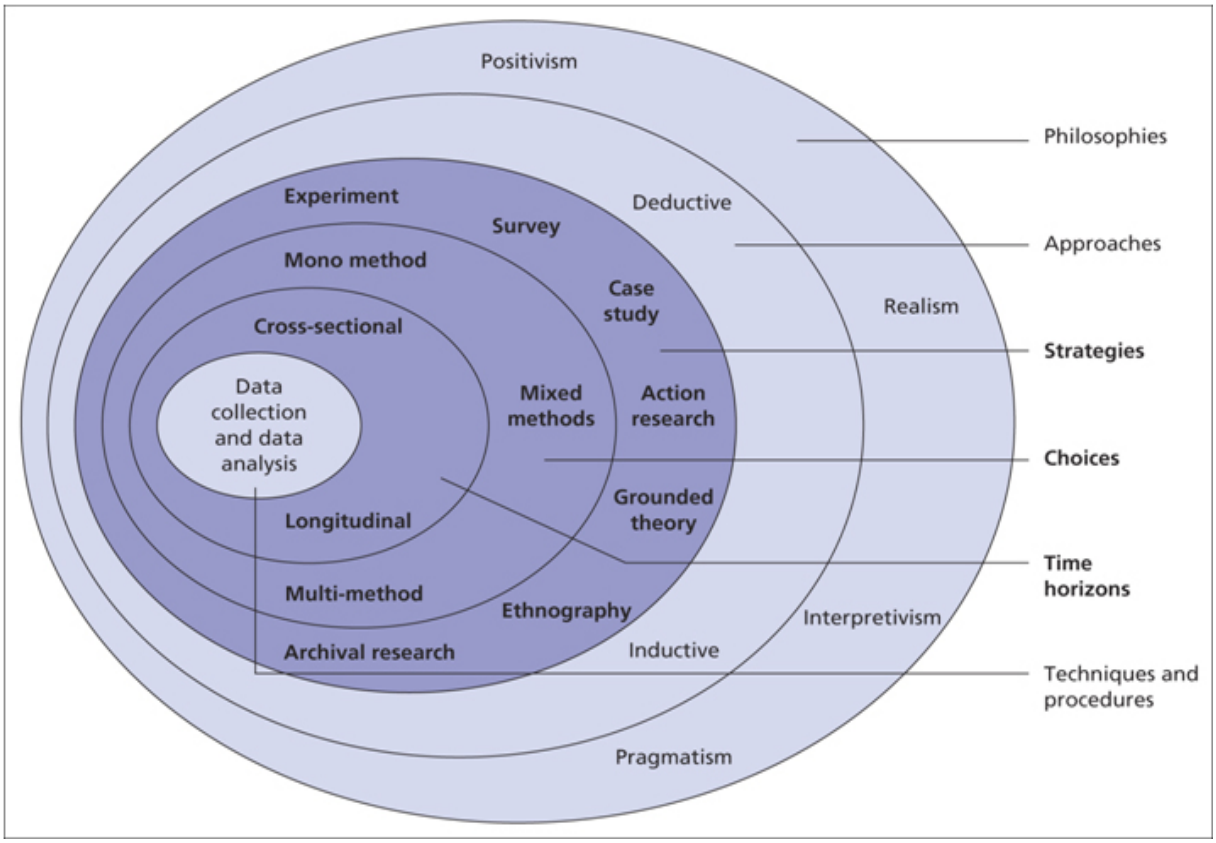

Figure 3.1: Research "onion" Source: Adapted from Saunders et al. (2016)

3.2.1 RESEARCH PHILOSOPHY

The research philosophy employed in this study is positivism as can be seen from the first layer of the research onion, It talks to the method (survey) which the researcher used to collect, interpret, and to analyse the data collected. According to Saunders et al. (2016), the researcher is enabled by the philosophical approaches to decide which method to use based on the reasons derived from the research questions. **Positivism** is the term used to describe an approach to the study of society that relies specifically on scientific evidence

3.2.2 RESEARCH APPROACH

The research approach employed in this study is a deductive approach, as can be seen from the second layer of the research onion. The deductive approach is associated with quantitative research whereas an inductive approach is often linked to qualitative research" Saunders et al., (2016).

3.2.3 RESEARCH METHODOLOGICAL CHOICE

The methodological choice used in this study is quantitative, as can be seen from the third layer of the research onion. It includes data collection such as survey, case study, action research and grounded theory (Saunders et al, 2009). The study focused on quantitative research because it is statistics-based. “Survey research provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. It includes cross-sectional and longitudinal studies using questionnaires or structured interviews for data collection—with the intent of generalizing from a sample to a population” (Fowler, 2008).

3.2.4 RESEARCH STRATEGY

The research strategy used in this study is the survey strategy which is generally linked with the deductive approach, Mohammad et al., (2015) as can be seen from the fourth layer of the research onion. As a result, it is believed that cross-sectional ‘snapshot’ descriptive survey is the most suitable option for this study, as it is conducted at a specific time. Saunders et al., (2016) is prescriptive with how the research strategy should be carried out. It is a step-by-step plan of action that gives direction to the researcher’s views and efforts, by assisting the researcher to carry out the research methodically and on time. It also produces quality results and comprehensive results.

3.2.5 RESEARCH TIME HORIZON

The research time horizon used in this study is the cross sectional survey as can be seen from the fifth layer of the research onion. Bryman, (2012) defines the required time for the completion of the research work and the two types of time horizons: the cross sectional and the longitudinal. The cross sectional time horizon is the one already established, whereby the data must be collected. Levi, 2006 mentions that some of the key characteristics of a cross-sectional study include:

- The study takes place at a single point in time
- It does not involve manipulating variables
- It allows researchers to look at numerous characteristics at once (age, income, gender, etc.)
- It's often used to look at the predominant features in a given population

- It can afford information about what is happening in a current population

3.2.6 RESEARCH TECHNIQUES AND PROCEDURES

Saunders et al., (2016) hypothesizes that the final and sixth layer of the research onion looks at data collection and analysis. This layer of the onion assists the researcher with moving the research design into the practicalities of data collection and analysis. The researcher needs to decide what will work best as the data collection method and which type of analysis to employ to get the best answer for the study. Saunders et al., (2016) have summarised the collection techniques as below:

3.2.6.1 PRIMARY DATA

The data collection techniques used in this research encompasses primary and secondary data collection techniques. Primary data is raw data, or first-hand information that has not gone through any kind of statistical treatment like sorting and tabulation (Muhammad, 2015). The survey questionnaire link was circulated to construction workers within a State Owned Entity in South Africa and to SACPCMP registered members.

3.3 RESEARCH INSTRUMENT

Aina, (2004) prescribes research instruments as significant for collecting data in all types of research methods. They are mainly used by researchers to collect reliable data to be analysed. The researcher used a survey as an instrument for gathering primary research data, as it is commonly used as an instrument.

3.3.1 QUESTIONNAIRE STRUCTURE

The questionnaire was divided into five sections as discussed subsequently:

Section A: This section is intended to obtain the demographic details of all the respondents' such as the age, qualifications, number of years employed, current position held and main responsibility in the current position.

Section B, C, D and **E:** These sections consist of four sets of questions directed at the professional teams such as the Safety Officers, Safety Managers, Construction Project Managers and Contract Managers, Quantity Surveyors and Quality Managers.

These four sections with corresponding four sets of questions related to the four objectives of the study.

3.3.2 QUESTIONNAIRE DESIGN

This section offers an all-encompassing discussion on the questionnaire design. This study used a quantitative design as it is categorical in nature and attempts to quantify a problem and understand how widespread it is by looking for projectable results to a larger population. For this type of study data is collected through surveys (online, phone, paper). The researcher used a cross-sectional survey design which is often used to employ the questionnaire as a tool for data collection. This is because questionnaires have internal and external validity, are efficient and can cover geographically spread samples (Mathers, Fox & Hunn 1998). In this study, "face validity" was used to validate the developed questionnaire since the candidate and the supervisor worked together to develop the instrument.

The researcher developed the questionnaire and sent it to construction professionals within Company X, and also requested SACPCMP to administer the questionnaire to its registered professionals, so as to collect relevant data as per the four objectives of this study. The researcher used a 5-point Likert scale which allowed the participants to rate their responses from 1 (strongly disagree) to 5 (strongly agree) for Objectives 1, 3 and 4, and for Objective 2, 1 (very poor) to 5 (excellent). See **Annexure 1** for a copy of the questionnaire used in this study.

3.3.3 ADMINISTRATION OF THE QUESTIONNAIRE

The administration of the questionnaire is the process of asking questions and recording the answers. Boynton and Greenhalgh (2004) posit that the first step in producing a good questionnaire research is getting the right questionnaire. They also advise the researcher to pilot it on participants who represent the study's sample as piloting provide a guide for rephrasing questions to invite a richer response. The researcher should do this as well to minimise the administrative errors as they can hamper the progress of the study.

It is beneficial to identify the needs as well as preferences of participants, who should understand what is required of them, remain interested and cooperative to the end of the questionnaire, be asked the right questions and have their responses recorded accurately. The benefits of using online questionnaires are that they can yield high quality usable data, achieve good response rates and provide anonymity and more honest answers, than for example interviews. A questionnaire is also a useful data collection tool where the following conditions are met:

- The target audience, even if geographically spread, can be clearly defined and identified;
- The majority of respondents know what is asked of them; and
- The focus of the analysis is numerical i.e. the questionnaire yields quantitative data.

The hindrance to the use of questionnaire is that it is unsuitable for subjects with poor literacy and can give rise to very poor response rates (Boynton and Greenhalgh 2004).

3.4 RESEARCH ETHICS

To ensure that this research project is handled in an ethical manner and that the dignity, rights and well-being of participants are considered, this study is guided by the following principles: privacy and confidentiality, voluntary participation, informed consent, do no harm and data security.

According to Kaiser and Karen (2009), the following five principles are of importance when dealing with ethical issues in survey research:

- Respondents should come to no harm as a result of their participation in the research. This primary ethical principle governs data collection and overrides all other considerations;
- The respondents have a right to privacy and no information about them should be published without their permission;
- For the respondents to be able to give their informed consent regarding their participation and use of data, the researcher should provide them with true information about the extent to which their contributions will be held confidential and what the research will be used for is;
- This principle does not apply to this study as it includes children’s rights to be protected. It is not applicable to this study; and

- The researcher is morally and legally obligated to keep their word about the confidentiality of the participants' responses.

A copy of the ethics clearance certificate for the study can be found under **Annexure 2.**

3.5 POPULATION

A population is a group of individuals who have common characteristics. The population targeted by this study was the construction professionals within the nine provinces in South Africa as presented in Figure 3.2.

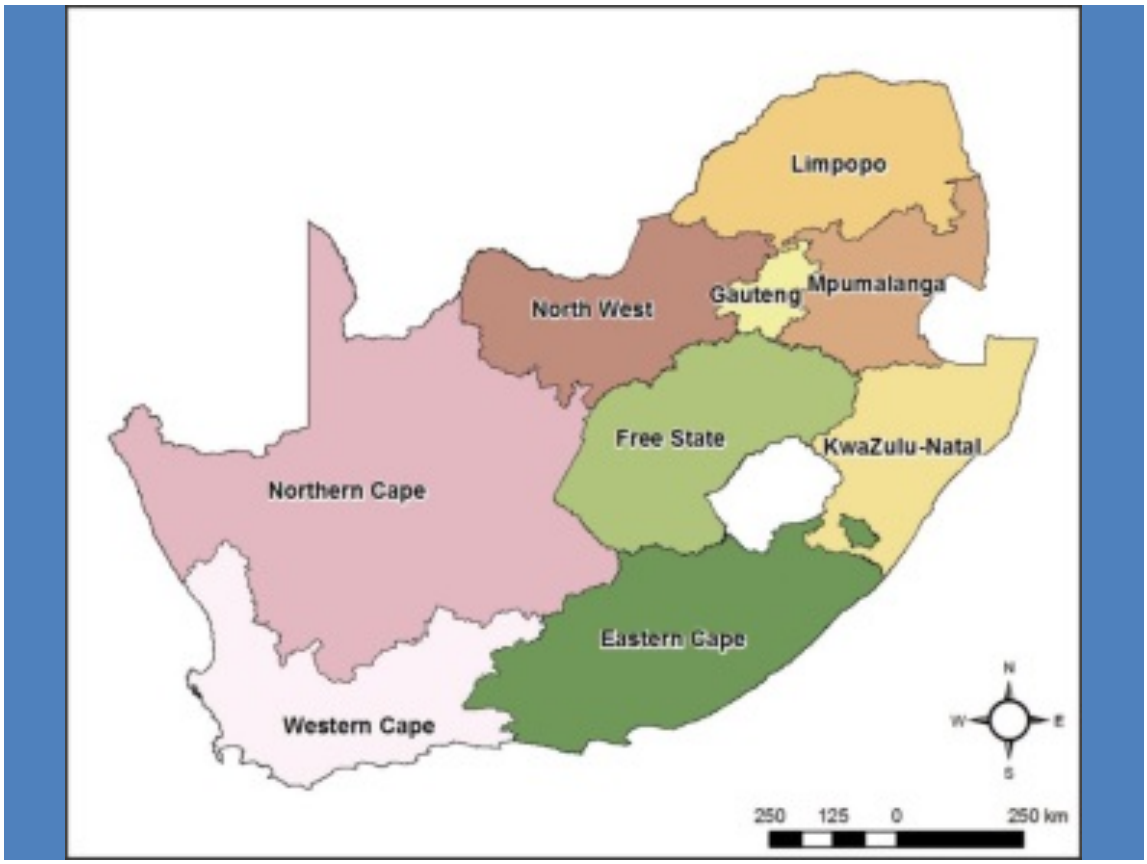

Figure 3.2: South African Map

3.6 SAMPLING TECHNIQUE

Sampling is choosing a group of people whom researchers purposefully inspect and the population is the group of people whom the survey is about. Sampling strategies can be divided into two groups: (a) Scientifically sound "probability sampling," which involves procedures that provide a truly representative sample; and (b) "Non-

probability sampling," this consists of a number of strategies that try to achieve a compromise, that is, a reasonably representative sample. Targeted population is in its most important general characteristics (e.g., age, gender, ethnicity, educational background, academic capability, social class, or socio-economic status, etc.

3.7 SAMPLE SIZE

This study employed a "probability sampling" and sampled 100 employees in the construction sphere within a large state-owned entity and another 100 professionals who are on the SACPCMP database within South Africa as a whole.

3.8 DATA ANALYSIS AND INTERPRETATION OF DATA

The word data describes information that is organised and systematically collected so as to assist the researcher to interpret the information correctly. Consequently, data is not collected arbitrarily, but in a systematic way to allow the respondents to respond to questions in a proper way. Quantitative data analysis is the means to turn raw information into meaningful data through the application of rational and critical thinking. It includes the calculation of frequencies of variables and differences between variables.

Figure 3.3 is representative of the steps followed by the study to analyse the data. For this study, data was collected and organised using an excel spreadsheet and transferred into an application called Survey Monkey for presentation. Thereafter a link was created and sent out to respondents via email. Their responses sent automatic emails to the researcher and the responses remained in the cloud of the application. When the responses no longer came, the link was closed and data was transferred from Survey Monkey to Statistical Package for Social Science (SPSS) for ease of data analysis using descriptive analysis. The results are conveyed in a form of variables like Mean Item Score (MIS), Standard Deviation (SD), Coefficient of Variation (CV) which the researcher used to analyse the findings of the survey.

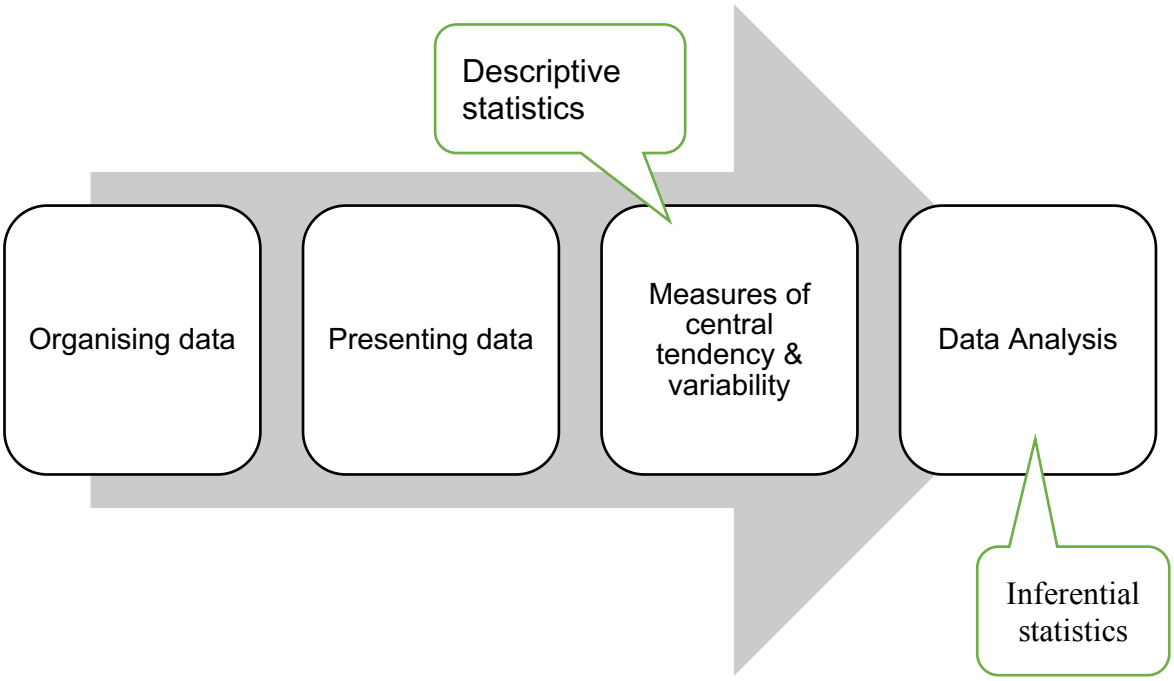

Figure 3.3: Stages of quantitative data analysis

SPSS is able to present the research results in a form that is suitable for use in a research report (Cronk, 2012). In the case of this study, the professionals accounted for the chosen population whom we wished to measure and this was done by means of inferential statistics. Inferential statistics is used to draw educated conclusions about a population that is likely too large to sample completely. This is done by taking a random sample of individuals within the population of interest, and taking measurements. Table 3.1 presents the summary of the research objectives, questions, method, data collection method, and data analysis technique for the four objectives of this study.

Table 3.1: Research methodology summary

Research Objectives	Research Questions	Research Method	Data collection technique	Data Analysis technique
Objective 1 To investigate the factors affecting the registration or appointment of the CHS agents as	Question 1 What are the factors affecting the registration or appointment of the CHS agents as	Survey	Questionnaire	Quantitative data

required by the new H&S policy	required by the new H&S policy?			
Objective 2 To assess project participants' understanding of the implications of implementing the new H&S policy	Question 2 What are project participants' understanding of the implications of implementing the new H&S policy?	Survey	Questionnaire	Quantitative data
Objective 3 To explore the applicability of the different change management strategies for implementing the new H&S policy	Question 3 What are the different change management strategies for implementing the new H&S policy?	Survey	Questionnaire	Quantitative data
Objective 4 To establish the prevailing attitudes towards organizational changes for implementing the new H&S policy.	Question 4 What are the general attitudes of the project participants towards organizational changes for implementing the new H&S policy?	Survey	Questionnaire	Quantitative data

3.9 RELIABILITY AND VALIDITY

Reliability is about the consistency of a measure, and validity is about the accuracy of a measure (Middleton, 2019). An effective study answers research questions in a methodically lengthy manner. Table 3.2 shows the characteristics of reliability and validity as explored in this study.

Table 3.2: Reliability vs Validity

	Reliability	Validity
What does it tell you?	The extent to which the results can be reproduced when the research is repeated under the same conditions.	The extent to which the results really measure what they are supposed to measure.
How is it assessed?	By checking the consistency of results across time, across different observers, and across parts of the test itself.	By checking how well the results correspond to established theories and other measures of the same concept.
How do they relate?	A reliable measurement is not always valid: the results might be reproducible, but they're not necessarily correct.	A valid measurement is generally reliable: if a test produces accurate results, they should be reproducible.

3.10 CHAPTER SUMMARY

The study adopted a deductive approach as it is associated with quantitative research Saunders et al., (2016). It adopted the use of a survey questionnaire in order to interrogate the research methodology and design. Statistical models were constructed in order to explain what is observed. The goal of the study to determine the relationship between all the variables was employed for the three objectives of the study.

CHAPTER 4: DATA ANALYSIS AND DISCUSSIONS

4.1 OVERVIEW

This chapter deliberates on issues concerning the presentation of data and the analysis of the outcomes on the external change management of the revised policy of registered CHS agents in South Africa. It pursues the solution to the research questions and objectives mentioned in the first chapter.

4.2 RESPONDENTS PROFILE

The survey questionnaire has four sections and the results of each section are discussed independently. The first section, Section A, is about collecting data about the demographic details of the respondents' i.e. Age, highest academic qualifications, number of years responsibility performed in their current position. Demography is a field of study in which researchers study the measureable statistics of a specific population. A summary of the respondents profile is presented in Table 4.1.

Table 4.1: Respondents' profile

CHARACTERISTICS	DESCRIPTION	FREQUENCY
AGE	21 to 30	26
	31 to 40	74
	41 to 50	37
	51 to 60	19
	61 to 70	14
	Total	170
ACADEMIC QUALIFICATIONS	Grade 12	46
	Diploma	47
	B Tech	19
	BSc Honours	9
	Master's degree	11
	Doctorate degree	2
	Other	36
	Total	170
EMPLOYMENT HISTORY	6 to 10 Years	121
	11 to 15 years	26
	16 to 20 years	10
	21 to 26 years	13
	Total	170
POSITION HELD	Safety Officer	72
	Safety Manager	36
	Construction Project Manager	27
	Contract Manager	1
	Site Supervisor	3
	Other	31
	Total	170
MAIN RESPONSIBILITY	Site Supervision	8
	Contract Management	5
	Quality assurance	17
	Safety management	95
	Project Management	27
	Other	18
	Total	170
MANAGERIAL LEVELS	Lower Management	50
	Middle Management	84
	Top Management	36
	Total	170

4.3 RESPONSE RATE

The researcher developed a research survey questionnaire link using software called "Survey Monkey" and sent it to the SACPCMP co-ordinator for distribution. The link was sent to 100 registered members of this body via email. The researcher also sent

out the link via email to 100 employees of a large company in South Africa who were in the construction sphere. The researcher received 170 responses within a space of 3 months. The response rate was 85% (from 170 responses out of the 200 invitations sent) which is "higher than 52.7% found to be shared among studies collecting data from individuals and 35.7% found to be common among organisations" (Baruch and Holtom, 2008).

4.3.1 APPROACHES TO IMPROVING SURVEY RESPONSE

The researcher sent out an email explaining the objectives of the study to the participants together with the link. The email also expressed that their participation would be voluntary and anonymous and that their responses would be treated with the utmost confidentiality and be used solely for research purposes. The first email was sent in June 2019 to 100 employees of a large company in South Africa who are actively involved in the construction space. In a month only 19 responses, with a response rate of 19% were received. In July 2019, a reminder was sent and another email was sent to the SACPCMP administrator for further distribution to the South African construction fraternity. The survey took approximately 30 minutes of their time.

Consequently, the respondents were given additional two months from July to September 2019 to respond to the questionnaire. There was a favourable response as soon as the SACPCMP had sent out the link to another 100 recipients. The researcher was receiving emails from Survey Monkey on a daily basis until the end of September 2019, which led to a response rate of 85%. The researcher subsequently closed the link so as to work with the responses received until then. Another interesting factor is that the researcher received emails from some respondents asking if the researcher could assist with their pursuit in the new H&S registrations. Some were not getting any responses from the SACPCMP and some were failing interviews for various reasons and they wanted to know if they could be assisted by the SACPCMP to get some assistance with regards to what exactly is required and how to prepare for it to be a registered agent.

The one challenge the researcher encountered was that the link only worked well with Gmail accounts and those that contacted the researcher directly had to be sent the link to their personal accounts in order for them to participate in the questionnaire.

4.4 RESULTS ON RESPONDENTS PROFILE

Figure 4.1 shows the age results of the study's participants. Most of the participants (43.53%) were between the age group of 31-40 years, which showed the burgeoning presence of mid-career professionals in the that the industry. This was followed by those who were between the age group of 41-50 years (21.76%), 21-30 years (15.29%), 51-60 years (11.18%), and, lastly, 61-70 years (8.24%).

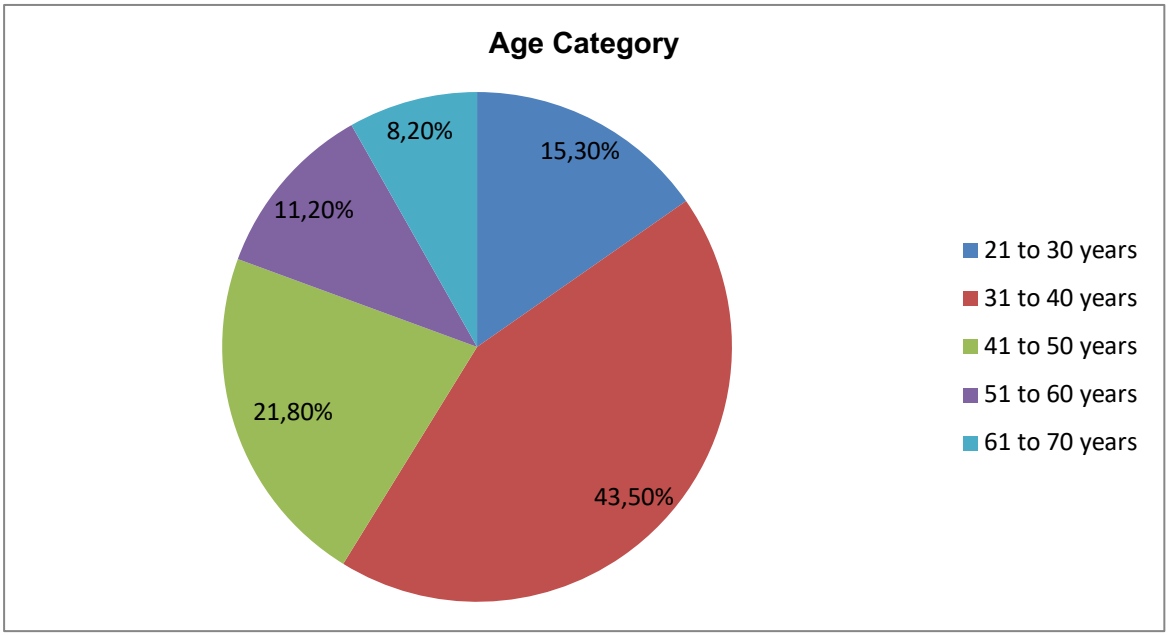

Figure 4.1: Respondents Age Categories

Figure 4.2 highlights the highest academic qualifications of the participants. The majority (27.65%) of the participants had diplomas, followed by Grade 12 qualifications (27.06%), which showed the heavy presence of technically-inclined professionals. Other qualifications (21.18%), B-Tech qualifications (11.18%), master's degree (6.47%), BSc Honours (5.29%), and, lastly, doctorate degree (1.18%)

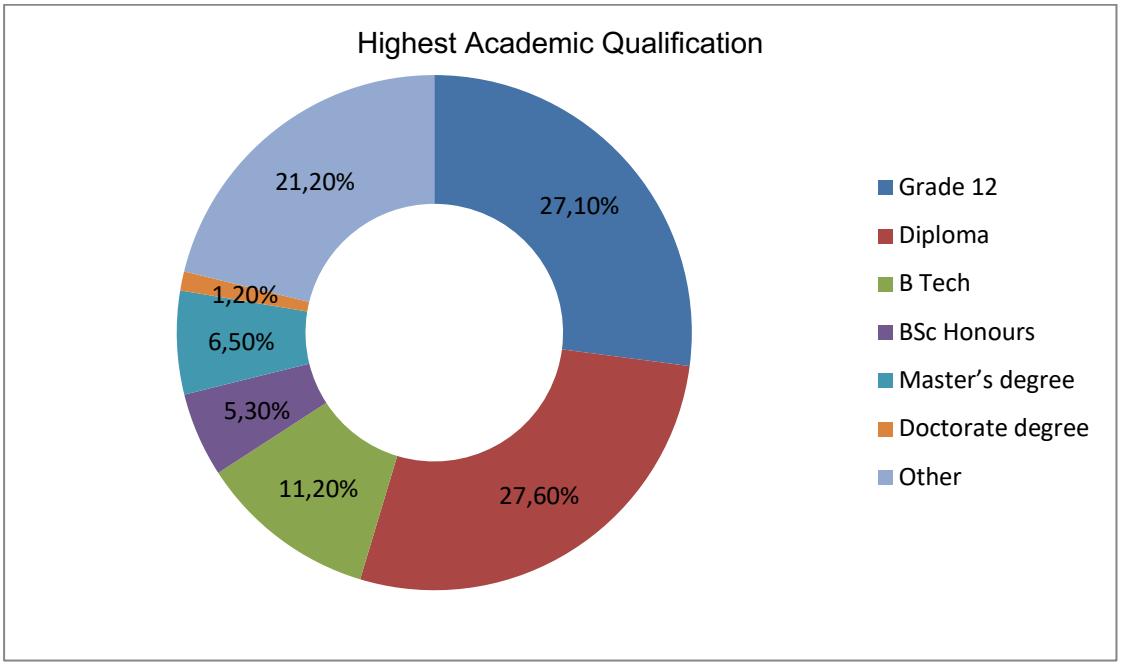

Figure 4.2: Respondents Academic Qualifications

Figure 4.3 below provides results for the number of years the participants have been employed. The majority of the participants employed between 6-10 years were presented by 71.18%, which accorded well with the predominant age range. This was followed by 11- 15 years (15.29%), 21-26 years (7.65%) and lastly 16-20 years (5.88%).

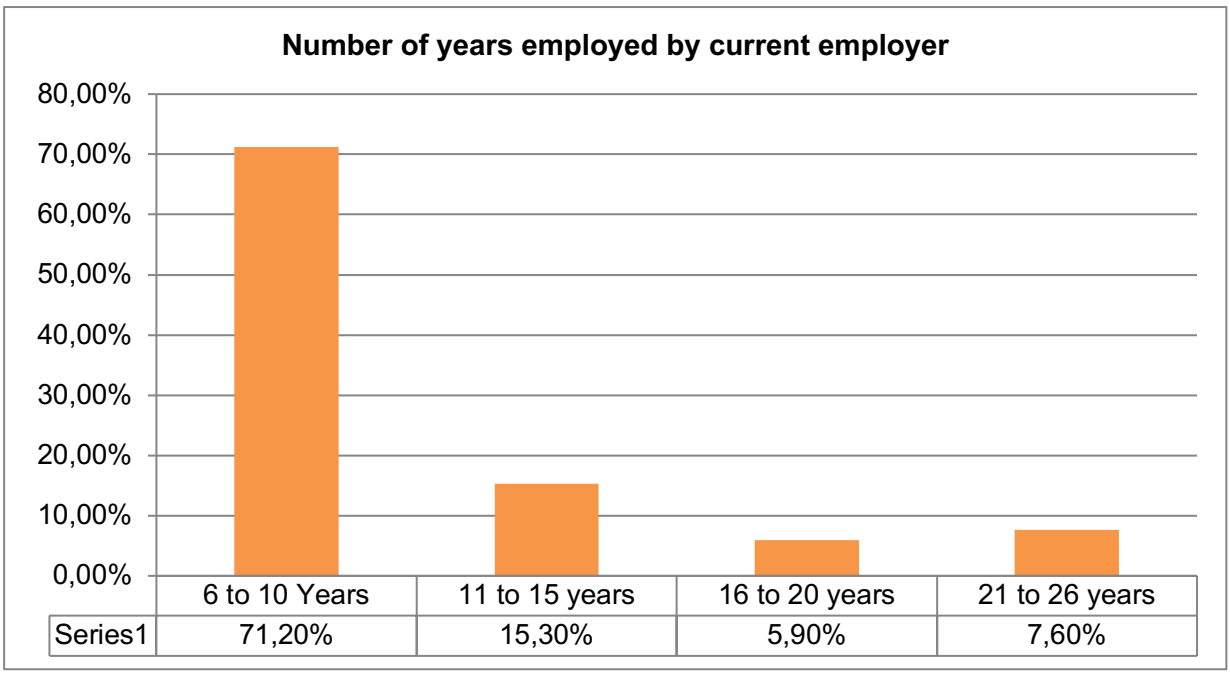

Figure 4.3: Respondents Years of Experience Working for the Current Employer

Figure 4.4 presents the respondents current position held in the organisation. The results for show 42.4% is made up of safety officers, followed by safety managers at 21.2%, which resonated well with the target respondents for this study. For a more balanced view, others, eg: Quantity surveys, quality representatives and their makeup was 18.2%. The site supervisors and the contract managers made up 1.8% and 0.6% respectively.

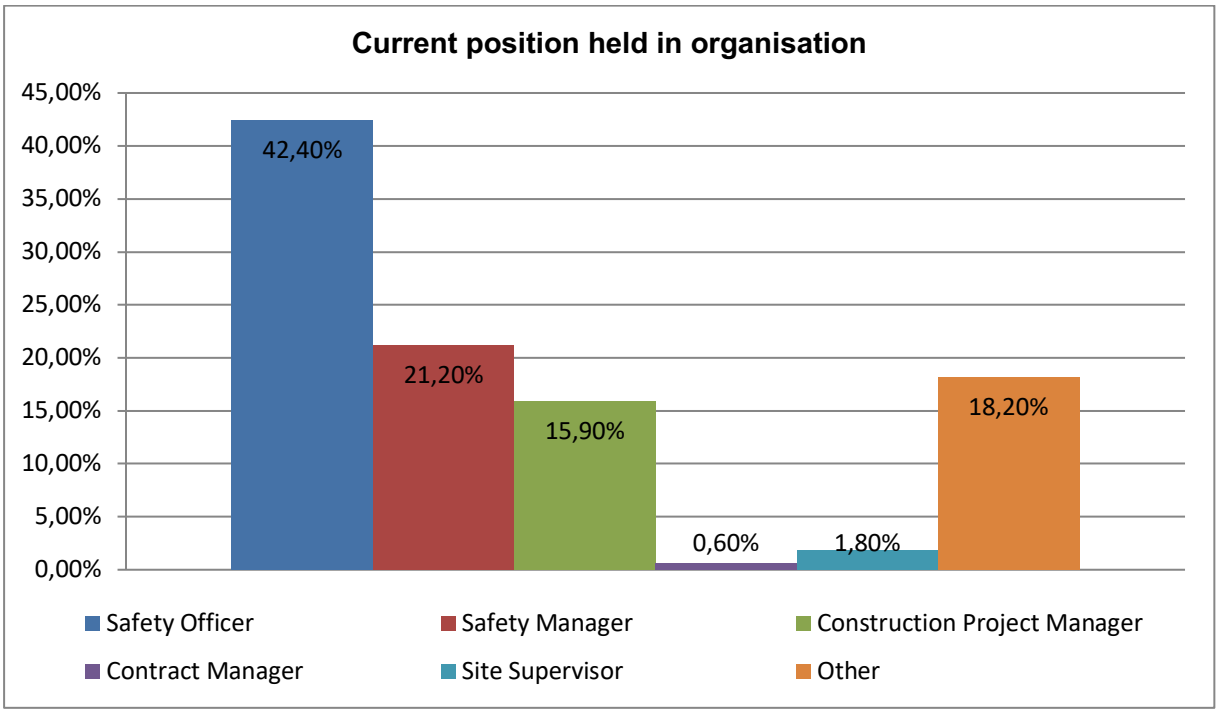

Figure 4.4: Respondents current position held in the organisation

Figure 4.5 presents the results for main responsibilities performed by the participants in their positions. 55.88% of the participant's main responsibility was safety management, followed by project management (15.88%), others (10.59%), quality assurance (10%), site supervision (4.71%) and lastly, contract management (2.94%).

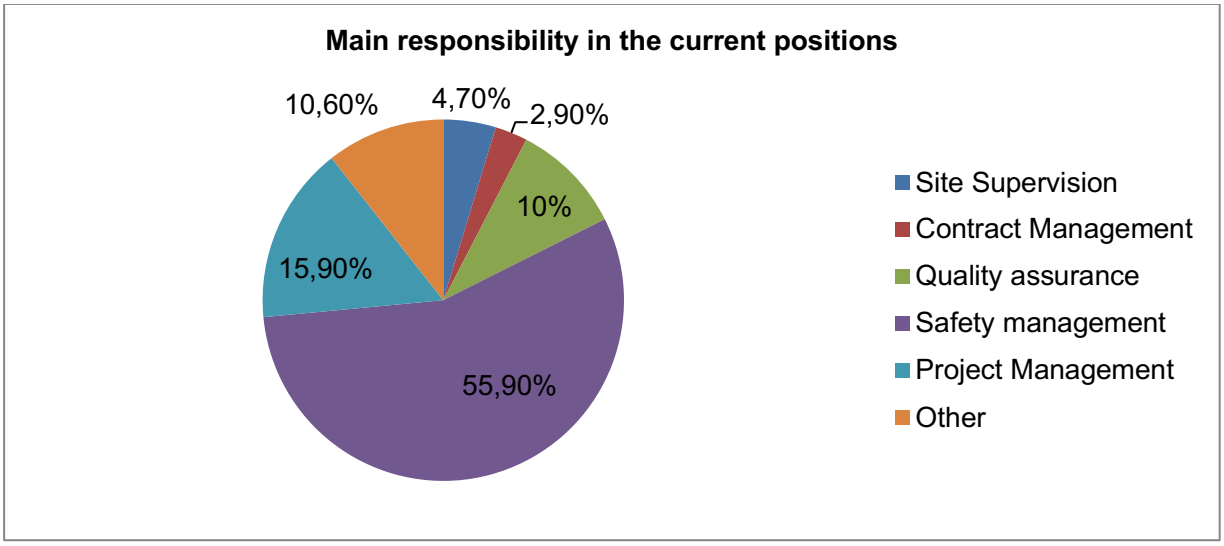

Figure 4.5: Respondents' main responsibility performed in their position.

4.5 RESULTS PER STUDY OBJECTIVE

From the quantitative ordinal data obtained through Section B of the questionnaire, relating to the first objective of the study, Table 4.1 presents the results of the Mean Item Score (MIS), Standard Deviation (SD), and coefficient of variation (CV). For Table 4.1 and subsequent Tables 4.2 to 4.4, the MIS, SD and CV were used in ranking 'to investigate the factors affecting the registration or appointment of the CHS agents as required by the new H&S policy. In a situation where two or more variables share the MIS, the lowest SD would be allocated the higher or highest agreement ranking. Factors with the highest MIS score were given the highest ranking in the analysis.

Table 4.1: H&S registration factors

Factors	MIS	SD	CV	Rank
H&S is best implemented in the early phases of construction project	4.32	0.98	0.23	1
The SACPCMP is the only body that is qualified to conduct the registration processes	4.08	1.04	0.25	2
Appointing a safety agent is done for conformance to the law	4.02	0.98	0.24	3
Employees know that they can only register as agents through the SACPCMP	4.00	1.03	0.26	4
There are enough skills to make sure that compliance is achieved during the execution of projects.	3.77	1.13	0.30	5
The contractors must also have a registered H&S agent when they start with construction	3.75	1.33	0.35	6

Factors	MIS	SD	CV	Rank
Employees understand the reasons why a safety agent is required on site during execution	3.67	1.22	0.33	7
The company encourages registration of H&S agents for compliance only	3.65	1.14	0.31	8
All construction projects should appoint a registered H&S agent	3.62	1.35	0.37	9
Company provides enough information regarding adherence to the policy change to employees	3.62	1.13	0.31	10
The company assists employees who want to be registered agents with resources to be able to meet the requirements for registration	3.46	1.30	0.38	11
The process of registration is easily understood by employees who want to be registered as H&S agents	3.37	1.27	0.38	12
Safety is improved when carried out by an external H&S agent	3.31	1.32	0.40	13
It is acceptable to have a safety person on site even if he/ she are not registered.	2.92	1.41	0.48	14
Projects do not struggle to appoint H&S agents during construction	2.91	1.24	0.43	15

MIS: Mean Item Score; SD: Standard Deviation; CV: Coefficient of Variation

Overall, the respondents levels of agreement with the criteria ranged from **undecided to strongly agreed**. Ranked topmost, the respondents strongly agreed with the criterion that *H&S is best implemented in the early phases of construction project.* Ranked bottommost, the respondents were undecided about the criterion that *Projects do not struggle to appoint H&S agents during construction*. **Annexure 3** further details theanalysis and discussion of the delivery of the responses related to the first objective of this study.

From the quantitative ordinal data achieved through Section C of the questionnaire, concerning the second objective of the study, Table 4.2 presents the MIS, SD and CV used in ranking the assessment of project participants' levels of understanding of the implications of implementing the new H&S policy.

Table 4.2: H&S policy change understanding

Understanding	MIS	SD	CV	Rank
Any person who is interested in being a H&S agent can become one by going for an interview only	3.63	1.42	2.55	1
Safety agents are driven by monetary benefits	2.64	1.27	2.08	2
Project participants know how the H&S policy amendments will affect the projects in construction	2.50	1.16	2.15	3
Registered agents provides clear definition of roles during construction	2.31	1.24	1.86	4
Having a safety agent on site helps to reduce unnecessary costs associated with the project	2.23	1.27	1.75	5
There is co-ordination between stakeholders when the H&S agent is on site	2.13	1.19	1.79	6
Having a H&S agent on site creates a clearer focus on the project objectives	2.11	1.24	1.70	7
Having a registered safety agent provides management with a sense of comfort during construction	2.08	1.23	1.69	8
Stakeholders become more comfortable when there is a registered H&S agent on site	2.07	1.15	1.80	9
Having a safety agent on site improves the execution of the project	2.03	1.18	1.72	10
There is a defined and clear responsibility on roles on site	2.01	1.13	1.78	11
Having a safety agent on site will encourage safe behaviour during construction	1.98	1.17	1.69	12
Having a H&S agent on site helps in identifying safety hazards timeously	1.96	1.18	1.67	13
Project costs are reduced when safety is adhered to				
Clear lines of communication become open when there is a dedicated H&S agent on site.	1.88	1.16	1.62	14

MIS: Mean Item Score; SD: Standard Deviation; CV: Coefficient of Variation

Overall, the respondents had a **very poor to average understanding** of all the criteria. Ranked topmost, the respondents had an average understanding of the criterion that

Any person who is interested in being an H&S agent can become one by going for an interview only. Ranked bottommost, the respondents had a very poor understanding of the criterion that *Clear lines of communication become open when there is a dedicated H&S agent on site.* **Annexure 4** further details an analysis and discussion of the delivery of the responses related to the second objective of this study.

From the quantitative ordinal data achieved through Section D of the questionnaire, concerning the third objective of the study, Table 4.3 presents the MIS, SD and CV used in ranking the levels of agreement with the different change management strategies applicable to the revised H&S policy.

Table 4.3 shows the results of exploring the level of agreement on the applicability of the different change management strategies for implementing the new H&S policy. Overall, the respondents' levels of agreement ranged from **undecided to strongly agreed**. Ranked topmost, the respondents strongly agreed with the criterion that *Project participants' need to comply with the changes as required by the law*. Ranked bottommost, the respondents were undecided about the criterion that *Employees knew about the policy change before it was published*. **Annexure 5** further details the analysis and discussion of the responses related to the third objective of this study.

Table 4.3: Strategies for the H&S policy changes

Strategies	MIS	SD	CV	Rank
Project participants' need to comply with the changes as required by the law.	4.29	0.95	0.22	1
Employees were informed by management about the changes in the policy.	3.86	1.11	0.29	2
The policy changes were communicated to all employees on time.	3.75	1.11	0.30	3
Employees know about the progress of compliance with the revised H&S policy	3.71	1.06	0.29	4
Top management is actively involved in the policy changes in the H&S sphere	3.70	1.14	0.31	5
Top management pay attention to the changes that the employees might incur because of the policy changes.	3.66	1.13	0.31	6
Employees view the revised H&S policy as a positive process	3.64	1.10	0.30	7
Employees know about the process of the revised H&S registrations	3.59	1.06	0.29	8
There is top down approach about the revised H&S policy	3.58	1.01	0.28	9
The external body that manages the registration process is known to all employees	3.49	1.21	0.35	10
The reasons for the changes were clearly communicated to the employees.	3.48	1.19	0.34	11
The changes will affect the projects during construction.	3.47	1.22	0.35	12
There is bottom up approach about the revised H&S policy	3.36	1.10	0.33	13
There is training with regards to change management	3.36	1.22	0.36	14
Employees knew about the policy change before it was published	2.92	1.30	0.45	15

With respect to the fourth objective of the study related to the quantitative ordinal data achieved through Section E of the questionnaire, Table 4.4 presents the MIS, SD and CV used in ranking the levels of agreement with the attitudes towards organizational changes within the respondents' companies.

Table 4.4: Attitude towards organisational change

Attitudes	**MIS**	**SD**	**CV**	**Rank**
The attitude of top management towards change is positive	3.76	1.07	0.28	1
I have the intentional readiness for change in the organization	3.51	1.07	0.30	2
There is trust in leadership about a change	3.50	1.22	0.35	3
There is participatory management about a change	3.49	1.14	0.33	4
There is cohesion about a change	3.49	1.02	0.29	5
There is an ability of management to lead change	3.48	1.18	0.34	6
There is general support about a change	3.48	1.13	0.33	7
There is cognitive readiness for change among the employees	3.34	1.10	0.33	8
There is politicking about a change	3.33	1.12	0.34	9
There is employee involvement in the change process	3.27	1.18	0.36	10

Overall, the respondents **agreed** with all the criteria. Ranked topmost, the respondents agreed with the criterion that *The attitude of top management towards change is positive*. Ranked bottommost, the respondents agreed with criterion that *There is employee involvement in the change process*. **Annexure 6** further details the analysis and discussion of the responses related to the fourth objective of this study.

CHAPTER 5: CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

5.1 OVERVIEW

The previous chapter provides a discussion of the empirical findings of the study. Various stages of data analysis were identified and described in detail. This chapter presents the summary of the findings, the conclusions and limitations of the study, and recommendations for further studies. The aim of this study was to investigate the external change management process with regard to the implementation of the latest policy of registered CHS agents in South Africa.

5.2 CONCLUSION ON THE HEALTH AND SAFETY REGISTRATION FACTORS.

The study objective was to investigate the different strategies across managerial levels within a construction company to manage the change of policy. The findings realized after analysis identified that indeed H&S registration factors play a role in changing policy. The majority of the participants agreed that they do understand and that this can easily be done. This shows the importance of having different strategies on how to implement H&S registration factors that improves policy changes. It is therefore submitted by the study that when H&S registration process is easy and understood by agents, this will make the change of policy easy to implement and to develop strategies there off.

5.3 CONCLUSION ON THE HEALTHY AND SAFETY POLICY CHANGE UNDERSTANDING.

The objective of the study was to investigate the internal and external factors that impact appointing a H&S agent as required by the H&S policy. In order to investigate the internal and external factors that impact the registration of a H&S agent, the study aimed to understand the level of understanding the changes made in the policy. The results show that the majority of the agents understand the changes in the registration policy. The results further on indicate that indeed project cost are reduced when agents adhere to the changes made in the policy and also that having a H&S agent at the site during a construction project helps improve the effectiveness of the project overall. Hence, the internal and external factors that were included in the H&S policy change were understood.

5.4 CONCLUSION ON STRATEGIES FOR THE HEALTH AND SAFETY POLICY CHANGE.

The study's last objective was to investigate if internal and external project participants understand the registration process and the requirements thereof. The findings acquired after analysis revealed that the changes in the policy were communicated and the employees were aware of changes. The results further show that training on the policy changes and employees viewed these changes as a positive process. It can, therefore, be concluded that the strategies that were used in policy change were effective and successful.

5.5 CONCLUSION ON THE ATTITUDE TOWARD ORGANIZATIONAL CHANGE.

The findings acquired after analysis revealed that the attitude of the top management on the organisational change was positive. The results also show that the attitude towards organizational change starts from the employees trusting and supporting management in the changes made. The findings indicate that the changes made on the H&S policy are cohesion and that positive attitude of the management towards the change has an impact on how employees or agent will accept policy change. Involvement of all parties affected by these changes is important for this will enable the change process easy and understandable. In conclusion, attitude towards organisational change is one most important factor in an organisational change, this is even more important when it comes to construction.

5.6 OVERALL CONCLUSION

The findings are useful for construction managers, policy makers, contractors and construction employees to increase their understanding of the H&S management practices. In addition, the accrued knowledge on H&S management forms a base for theoretical knowledge for further research and training in the construction H&S body of knowledge.

5.7 RECOMMENDATIONS

Findings of the current study have prompted suggestions that are likely to lead to the betterment of state owned entities and the construction industry role-player's' performance. They are discussed below.

5.7.1 RECOMMENDATIONS ON THE HEALTH AND SAFETY REGISTRATION FACTORS

The results of this study revealed that registration factors overall were applied successfully in the policy change. This study recommends that the top management should pay attention on the process of appointing an H&S agent during construction, as the results indicate that companies, employees or corporates find it difficult or struggle to appoint an agent. The study recommends that the department or government should improve on making sure that the employees get enough resources to train and create awareness of H&S policies. Another concern deducing from the results is that the registration process was not fully explained to those who wanted to register as H&S agents, this was shown by 25% of the participates disagreeing to understanding the registration process. As the registration process is very important in the implementation of changes in the policy, it is important for the department to ensure that access to e-learning, online networking and career portals inform the agents or potential agents on the changes being done. This will raise awareness, and subsequently make registration easy.

5.7.2 RECOMMENDATIONS ON THE HEALTHY AND SAFETY POLICY CHANGE UNDERSTANDING

The management perception on the H&S policy has impact on the overall implementation on the changes. Where employees understand the changes on the policy this enables the registration by agent to be appropriate and adequate, this leads to smooth registration of agents to the H&S policy. This study recommends that the easy and understandable registration process is more likely know that their H&S is secured in a construction project. The results indicate that not everyone interested in being H&S agent is difficult to become one through interviews only. Having an agent on site that understands the changes in the policy and are able to implement these changes reduces unnecessary risk. Registered agents on site helps in identifying safety hazards timeously and encourages safe behaviour during construction.

5.7.3 RECOMMENDATIONS ON STRATEGIES FOR THE HEALTH AND SAFETY POLICY CHANGES

There strategies that can be used in implementing change. H&S policies are there to employees and employers from risks associated with construction projects, these can be either big or small construction business. Hence, the management strategies in implementing changes in the H&S policy should consider all sizes of the business that will make use of these policies. Given, that small businesses have limited resources to spend on H&S and have difficulty to survive as a business, financial support for implementing H&S measures will probably lead to a higher uptake of intervention. All parties in making changes on the policy must work together and contribute their rightful parts towards making construction sites healthy and safe. The output of this study contributes to improvement of the H&S management for construction projects. Consequently, H&S are often neglected on construction project sites and rarely managed.

5.7.4 RECOMMENDATIONS ON THE ATTITUDE TOWARD ORGANIZATIONAL CHANGE

Organisational change is defined as an attempt or series of attempts to modify an organisation's structure, goals, technology or work task. Management within organisations is experiencing numerous internal and external pressures to implement organization change especially in the construction where peoples' life might be at risky. In order, for the employees or agent have positive attitude toward the change, there has to be support for change from both internal and external parties involved. The study finds that in order for the policy change to be successful, management has to include/ involve employee or senior agents in the H&S professional.

5.7.5 OVERALL RECOMMENDATIONS

Over the year's changes in the governance structure in providing H&S policy has leads to increase of uptake, however as construction methods changes, H&S policy ought to change also. It is of primary concern to employers, employees, governments and project participants. H&S therefore is an economic as well as humanitarian concern

that requires proper management control. The findings indicate that H&S measures on construction sites are inadequate and effective enforcement mechanism of H&S measures is lacking. Various challenges are faced in the management of H&S, the major being inadequate enforcement mechanism.

5.8 LIMITATIONS AND FUTURE STUDIES

The current research has some limitations. The biggest limitation of the study was the number of participants, which affects the generalizability of the findings and results. This limitation applies despite that the study targeted 200 participants out of which 170 responded (85% response rate); more so considering the importance and nature of the investigation—construction health and safety. Another limitation was on the factors used to determine the effect of change policy at a managerial level; only four factors used for this study. This study recommends that future studies should expand the current research factor and include other research factor. Such an expanded conceptual model can be expected to yield more interesting insights to management organisational change and adding new knowledge or insight on how to increase policy change can implemented and be successful implemented in a construction project. It will also add new literature to the existing body of academic literature on policy change. This study was an exploratory research in nature, hence further studies can pursue qualitative for depth understanding or quantitative for statistical results.

5.9 CHAPTER SUMMARY

This chapter was intended to make inferences from the findings and to make recommendations. The chapter was structured under three main headings. Firstly, a recap of the findings was provided. This was followed by recommendations made. The chapter ended with a discussion on the limitations that were encountered and suggestions were made for future studies.

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ANNEXURE 1: QUESTIONNAIRE

EXTERNAL CHANGE MANAGEMENT: "THE REVISED POLICY OF REGISTERED CONSTRUCTION HEALTH AND SAFETY AGENTS IN SOUTH AFRICA".

1. **Background:**

The Construction Regulations 2014 has revised the requirement for the appointment of Construction Health and Safety (CHS) Agents, CHS Managers and /or CHS Officers, when construction work that requires a construction work permit is planned. This requirement was introduced as per the Council for the Built Environment's (CBE) instruction to the South African Council for the Project and Construction Management Professions (SACPCMP) in terms of Act No.48 to register all CHS professionals.

The mandate was driven by the poor Health and Safety (H&S) records in the South African construction industry. The professionals identified under the regulations are Professional CHS Agent (Pr. CHSA), CHS Manager (CHSM), and CHS Officer (CHSO). The regulation stipulates that this mandate must be effective in practice as of the 7th of August 2018, but however, a lot of companies are still lagging behind in meeting this requirement mostly in the public sector.

As of July 2018, the Department of Labour's (DoL) communication to clients, contractors, designers, CHS professionals/practitioners and CHS stakeholders regarding the revision to the application for construction work permit in terms of the Construction Regulations 2014 required:

> *A client who intends to have construction work carried out, must at least 30 days before that work is to be carried out apply to the provincial director in writing for a construction work permit to perform construction work if the intended construction work starts from the* 7th of August 2018 and will—
>
> a. *exceed 365 days and will involve more than 3600 person days of construction work; or*
> b. *the tender value limit is Grade 7, 8 or 9 of the CIDB grading.*

2. Aim of the research

The aim of this study was to investigate how change management processes enable construction companies to effectively comply with the revised H&S policy requirement.

3. Objectives of the research

Objective 1: investigate the factors affecting the registration or appointment of the CHS agents as required by the new H&S policy;

Objective 2: assess project participants' understanding of the implications of implementing the new H&S policy;

Objective 3: explore the applicability of the different change management strategies for implementing the new H&S policy; and

Objective 4: establish the prevailing attitudes towards organizational changes for implementing the new H&S policy.

SECTION A: DEMOGRAPHIC INFORMATION

A1. Please indicate your age category (*Tick applicable*)

- ☐ 21 to 30 years
- ☐ 31 to 40 years
- ☐ 41 to 50 years
- ☐ 51 to 60 years
- ☐ 61 to 70 years

A2. Please indicate your highest academic qualification? (*Tick applicable*)

- ☐ Grade 12
- ☐ Diploma
- ☐ B Tech
- ☐ BSc Honours
- ☐ Master's degree
- ☐ Doctorate degree
- ☐ Other **(***please specify***)**

A3. Number of years you have been employed by your current employer?

- ☐ 6 to 10 years
- ☐ 11 to 15 years
- ☐ 16 to 20 years
- ☐ 21 to 26 years

A4. Current position held in organization?

- ☐ Safety Officer
- ☐ Safety Manager
- ☐ Construction Project Manager
- ☐ Contract Manager
- ☐ Site Supervisor
- ☐ Other (*please specify*)

A5. Main responsibility performed in your current position?

- ☐ Site supervision
- ☐ Contract Management
- ☐ Quality assurance
- ☐ Safety management
- ☐ Project Management
- ☐ Other (*please specify*)

A6. Managerial levels

- ☐ Lower management
- ☐ Middle Management
- ☐ Top Management

SECTION B – H&S registration factors (Objective 1)

To investigate the level of agreement on the factors affecting the registration or appointment of the CHS agents as required by the new H&S policy.

Please rank the following level of agreement on a scale of 1 to 5 (where 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree and 5 = strongly Agree).

Factors	1	2	3	4	5
Employees know that they can only register as agents through the SACPCMP					
The SACPCMP is the only body that is qualified to conduct the registration processes					
The process of registration is easily understood by employees who want to be registered as H&S agents					
The contractors must also have a registered H&S agent when they start with construction					
There are enough skills to make sure that compliance is achieved during the execution of projects.					
The company encourages registration of H&S agents for compliance only					
The company assists employees who want to be registered agents with resources to be able to meet the requirements for registration					
Projects do not struggle to appoint H&S agents during construction					
Employees understand the reasons why a safety agent is required on site during execution					
H&S is best implemented in the early phases of construction project					
Company provides enough information regarding adherence to the policy change to employees					
Appointing a safety agent is done for conformance to the law					
All construction projects should appoint a registered H&S agent					
Safety is improved when carried out by an external H&S agent					
It is acceptable to have a safety person on site even if he/ she are not registered.					

SECTION C – H&S policy change understanding (Objective 2)

To assess project participants' understanding of the implications of implementing the new H&S policy.

Please rank the following level of understanding on a scale of 1 to 5 (where 1 = very poor, 2 = below average, 3 = average, 4 = above average and 5 = excellent)

Understanding	**1**	**2**	**3**	**4**	**5**
Project participants know how the H&S policy amendments will affect the projects in construction					
Having a safety agent on site will encourage safe behaviour during construction					
Having a H&S agent on site helps in identifying safety hazards timeously					
Having a H&S agent on site creates a clearer focus on the project objectives					
Having a safety agent on site improves the execution of the project					
Having a safety agent on site helps to reduce unnecessary costs associated with the project					
Stakeholders become more comfortable when there is a registered H&S agent on site					
There is a defined and clear responsibility on roles on site					
Registered agents provides clear definition of roles during construction					
Having a registered safety agent provides management with a sense of comfort during construction					
Project costs are reduced when safety is adhered to					
Clear lines of communication become open when there is a dedicated H&S agent on site.					
There is co-ordination between stakeholders when the H&S agent is on site.					
Safety agents are driven by monetary benefits					
Any person who is interested in being a H&S agent can become one by going for an interview only					

SECTION D: Strategies for the H&S policy changes for Objective 3

To explore the applicability of the different change management strategies for implementing the new H&S policy.

Please rank the following level of agreement on a scale of 1 to 5 (where 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree and 5 = strongly Agree).

Strategies	**1**	**2**	**3**	**4**	**5**
The changes will affect the projects during construction.					
Project participants' need to comply with the changes as required by the law.					
Employees were informed by management about the changes in the policy.					
The policy changes were communicated to all employees on time.					
Top management is actively involved in the policy changes in the H&S sphere					
Top management pay attention to the changes that the employees might incur as a result of the policy changes.					
Employees know about the process of the revised H&S registrations					
Employees know about the progress of compliance with the revised H&S policy					
The reasons for the changes were clearly communicated to the employees.					
Employees knew about the policy change before it was published					
There is training with regards to change management					
There is top down approach about the revised H&S policy					
There is bottom up approach about the revised H&S policy					
Employees view the revised H&S policy as a positive process					
The external body that manages the registration process is known to all employees					

SECTION E – Attitudes towards organizational changes (Objective 4)

To establish the prevailing attitudes towards organizational changes for implementing the new H&S policy.

Please rank the following level of agreement on a scale of 1 to 5 (where 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree and 5 = strongly Agree).

Attitudes	**1**	**2**	**3**	**4**	**5**
There is general support about a change					
There is trust in leadership about a change					
There is cohesion about a change					
There is participatory management about a change					
There is politicking about a change					
There is employee involvement in the change process					
There is an ability of management to lead change					
The attitude of top management towards change is positive					
I have the intentional readiness for change in the organization					
There is cognitive readiness for change among the employees					
There is emotional readiness for change among the employees					

ANNEXURE 2: ETHICS CLEARANCE

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SCHOOL OF CONSTRUCTION ECONOMICS AND MANAGEMENT RESEARCH ETHICS COMMITTEE

CLEARANCE CERTIFICATE 1/MSC	**PROTOCOL NUMBER** CEM/19/05/SRK
PROJECT TITLE:	EXTERNAL CHANGE MANAGEMENT: "THE REVISED POLICY OF REGISTERED CONSTRUCTION HEALTH AND SAFETY AGENTS IN SOUTH AFRICA".
INVESTIGATOR	Sepelong Rebecca Khoza 755537
SCHOOL/DEPARTMENT	**SCHOOL OF CONSTRUCTION ECONOMICS AND MANAGEMENT**
DATE CONSIDERED	01/05/2019
DECISION OF THE COMMITTEE	Approved conditionally with respect to the declaration
EXPIRY DATE	1st May 2020
DATE	1st May 2019
CHAIRPERSON_____	Dr. Kola Ijasan

cc: Supervisor: Dr. Oluwayomi Babatunde

DECLARATION OF INVESTIGATOR (S)

To be completed in duplicate and **ONE COPY** returned to the Secretary Mrs. M. Sithole at the CEM reception desk.

I fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the committee. **I agree to completion of a yearly progress report.**



Signature **Date** 02 / 05 / 2019

ANNEXURE 3: DETAILED ANALYSIS (OBJECTIVE 1)

The level of agreement on the factors affecting the registration or appointment of the CHS agents as required by the new H&S policy

Figure A3.1 shows that most of the respondents agree that employees know that they can only register as agents through the SACPCMP, that it is the only body that is qualified to conduct the registration processes. 36.5% agree that they understand the process to follow if they want to be registered as H&S agents. Only a few strongly disagreed with the three factors mentioned in this figure.

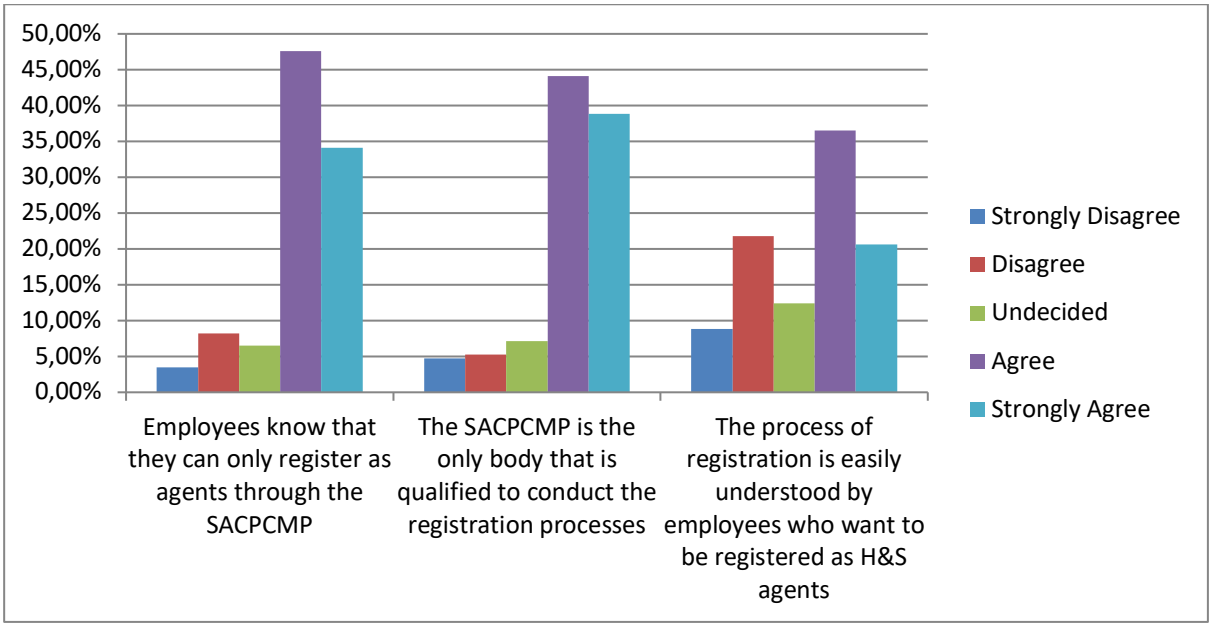

Figure A3.1 factors that impacts the registration or appointment of H&S agents (1)

Figure A3.2 shows that most of the respondents agree that the contractors must also have a registered H&S agent when they start with construction, that there are enough skills to make sure that compliance is achieved during the execution of projects and that the company encourages registration of H&S agents for compliance only. Only a few strongly disagreed with the three factors mentioned in this figure.



Figure A3.2 factors that impacts the registration or appointment of H&S agents (2)

Figure A3.3 shows that their companies assist the employees who want to be registered agents with resources to be able to meet the requirements for registration, that projects do not struggle to appoint H&S agents during construction and that employees understand the reasons why a safety agent is required on site during execution. A few respondents were undecided with regards to the aforementioned factors.

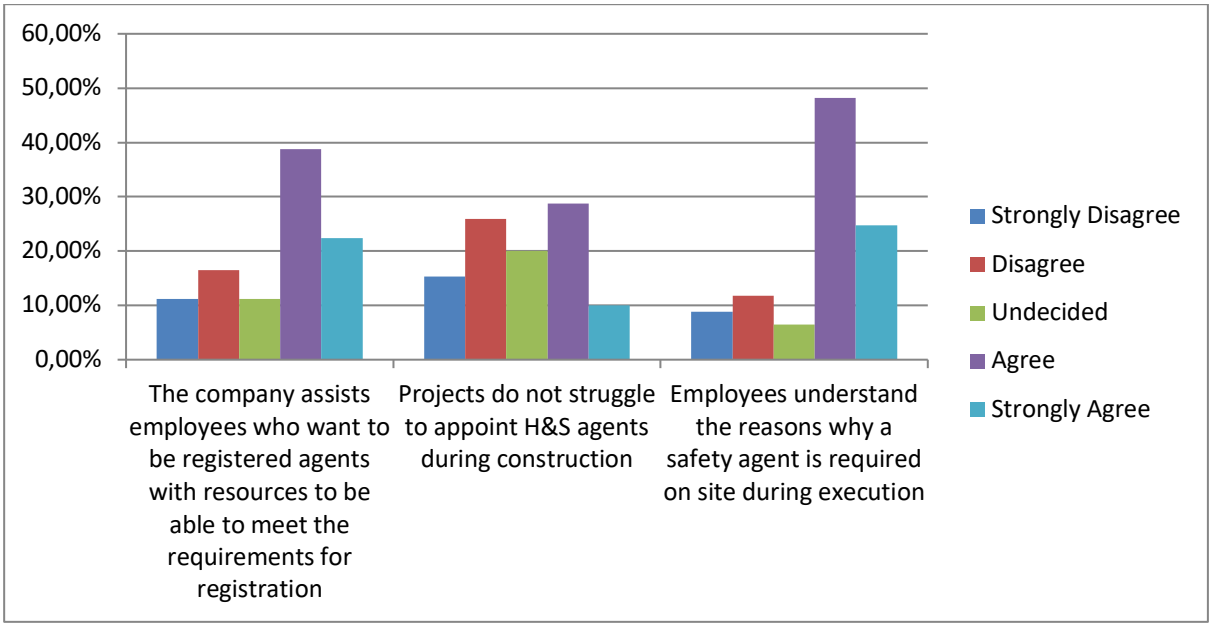

Figure A3.3 factors that impacts the registration or appointment of H&S agents (3)

Figure A3.4 shows that 55% strongly agree that H&S is best implemented in the early phases of construction project while most of the respondents agree that their companies provide them with enough information regarding adherence to the change of policy and appointing a safety agent is done mainly for conforming to the law. Only a few strongly disagreed with the three factors mentioned in this figure.

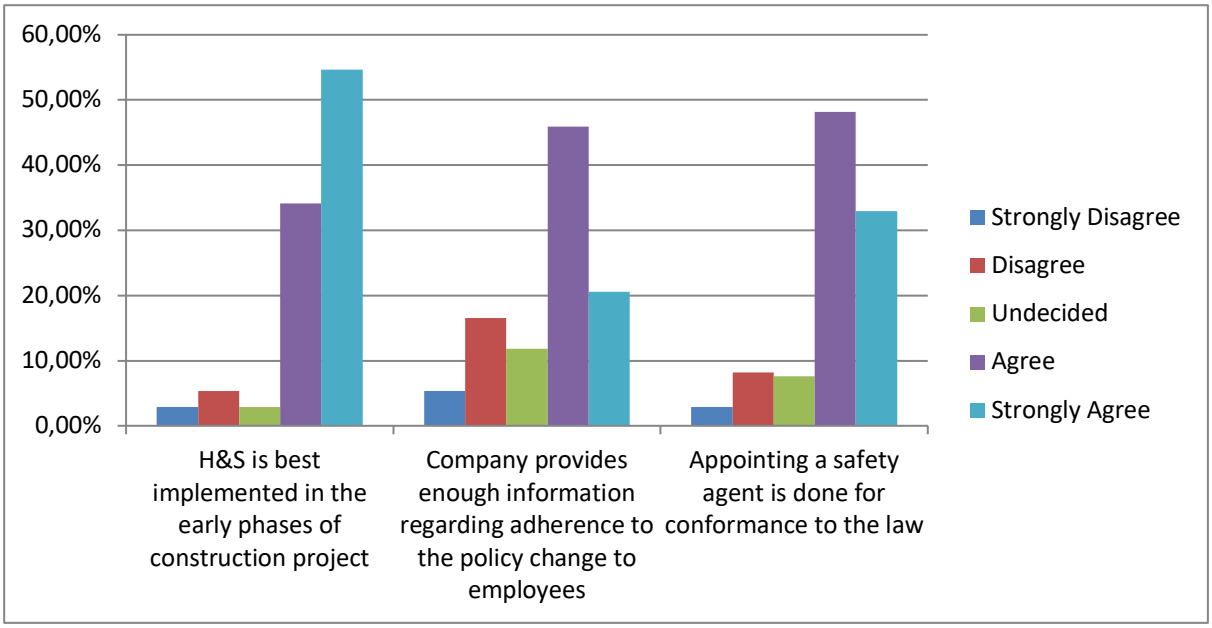

Figure A3.4 factors that impacts the registration or appointment of H&S agents (4)

Figure A3.5 shows that respondents agree that all construction projects should appoint a registered H&S agent, that safety is improved when carried out by an external H&S agent and that it is acceptable to have a safety person on site even if they are not registered. A few respondents strongly disagreed with regards to the aforementioned factors.

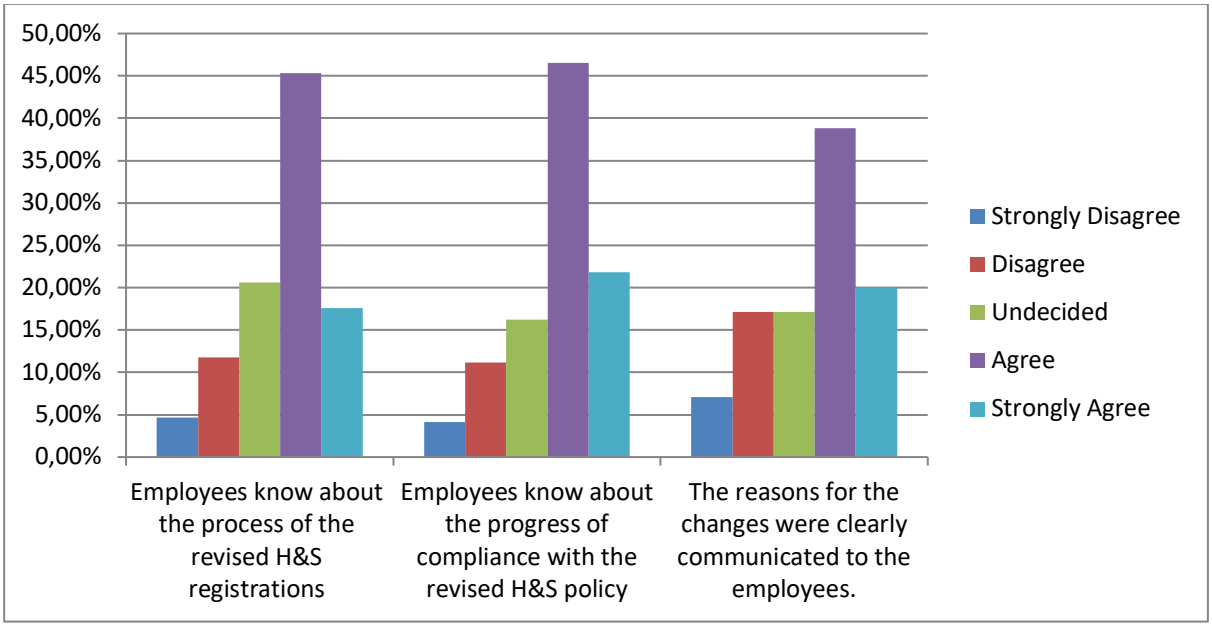

Figure A3.5 factors that impact the registration or appointment of H&S agents (5)

ANNEXURE 4: DETAILED ANALYSIS (OBJECTIVE 2)

The level of project participants' understanding of the implications of implementing the new H&S policy.

Figure A4.1 shows that respondents level of understanding that project participants know how the H&S policy amendments will affect the projects in construction, that having a safety agent on site will encourage safe behaviour during construction and that having a H&S agent on site helps in identifying safety hazards timeously is excellent. Few respondents show a very poor level of understanding with regards to the mentioned items.

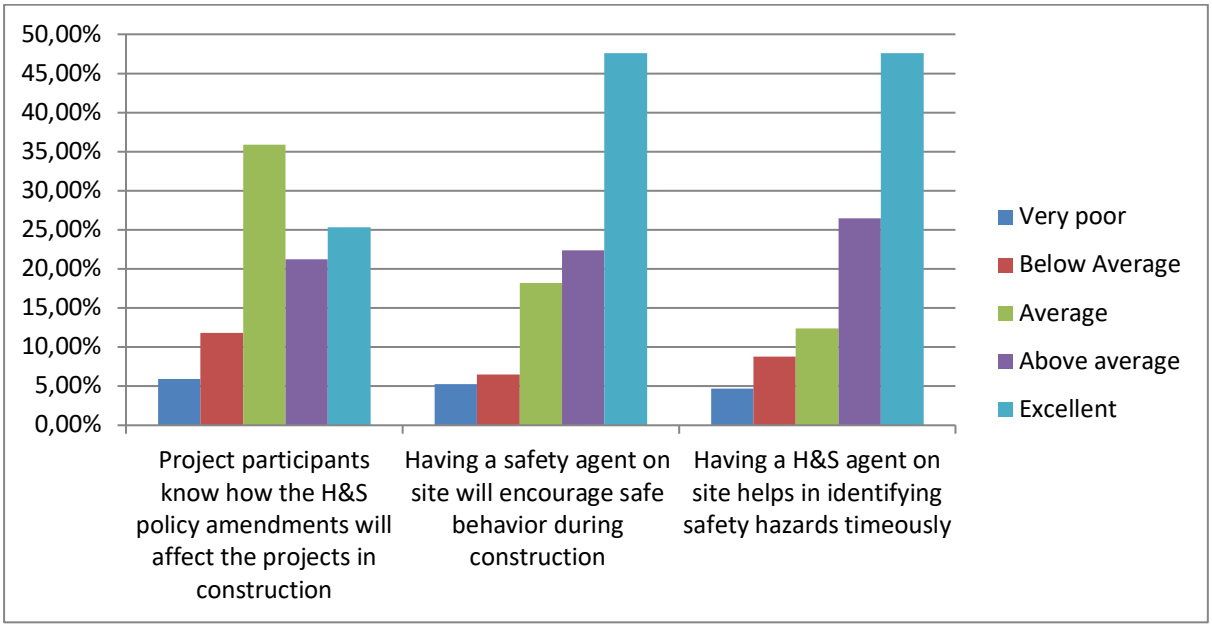

Figure A4.1: Respondents views on the implementation of the policy change (1)

Figure A4.2 shows that respondent's level of understanding of having an H&S agent on site creates a clearer focus on the project objectives that having a safety agent on site improves the execution of the project and that having a safety agent on site helps to reduce unnecessary costs associated with the project is excellent. Few respondents show a very poor level of understanding with regards to the mentioned items.

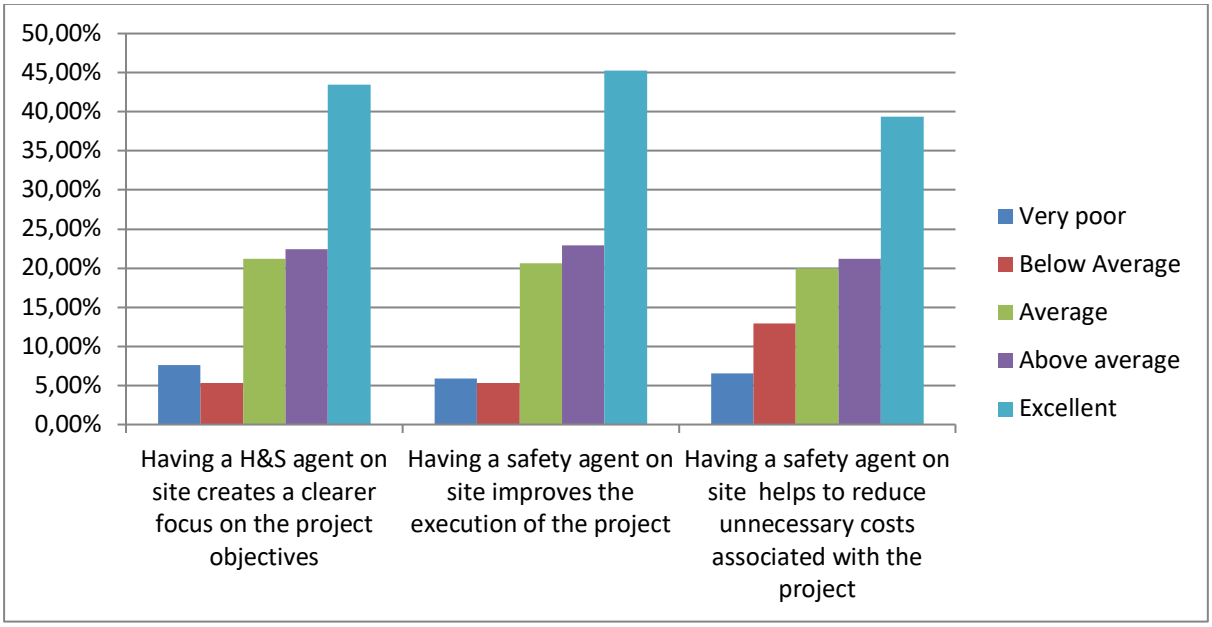

Figure A4.2: Respondents views on the implementation of the policy change (2)

Figure A4.3 shows that respondent's level of understanding that stakeholders become more comfortable when there is a registered H&S agent on site, that there is a defined and clear responsibility on roles on site when registered H&S agent is on site and that registered agents provide clear definition of roles during construction is excellent. Few respondents show a very poor and below average level of understanding with regards to the mentioned items.

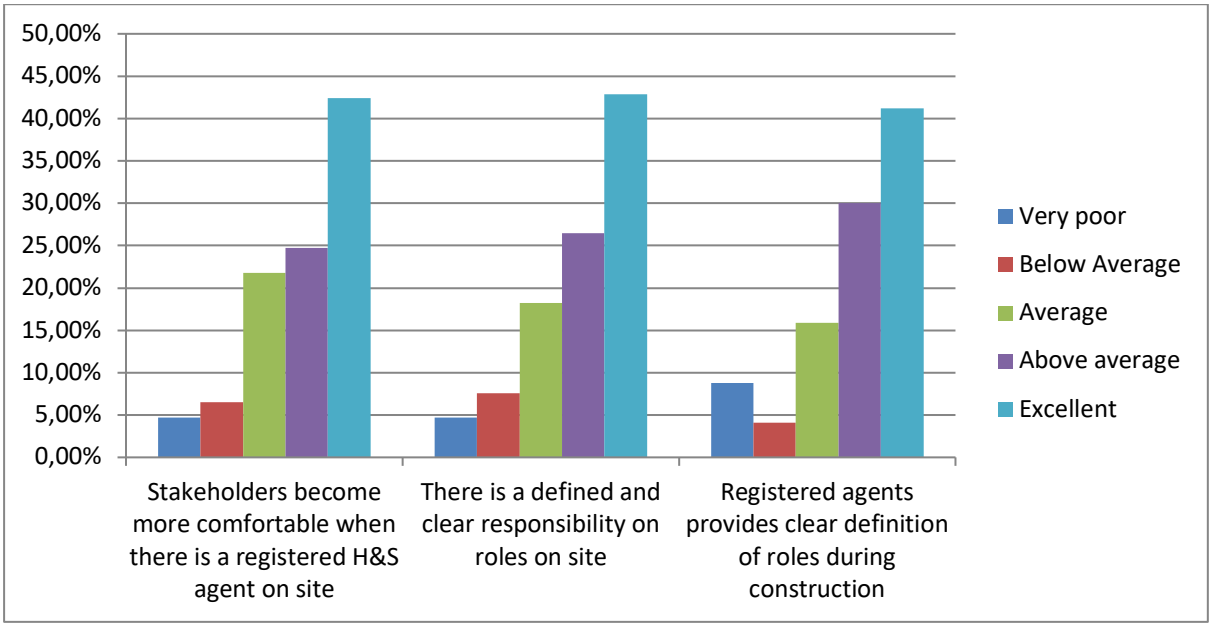

Figure A4.3: Respondents views on the implementation of the policy change (3)

Figure A4.4 shows that respondent's level of understanding that having a registered safety agent provides management with a sense of comfort during construction, that project costs are reduced when safety is adhered to and also there is co-ordination between stakeholders when the H&S agent is on site is excellent. Few respondents show a very poor and below average level of understanding with regards to the mentioned items.

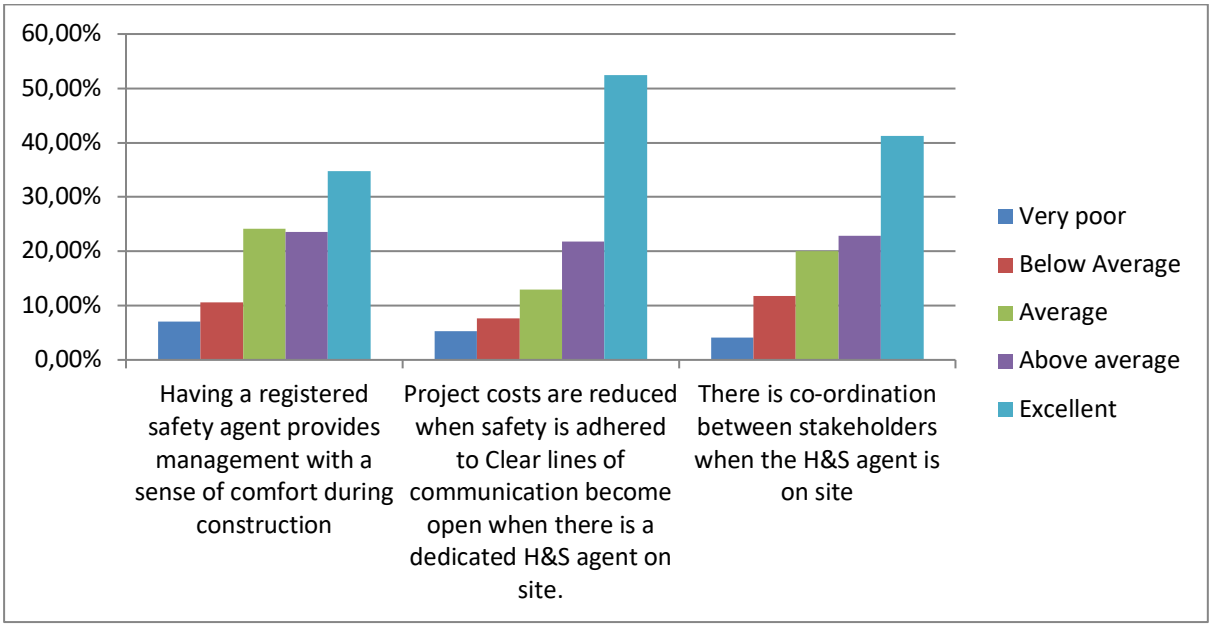

Figure A4.4: Respondents views on the implementation of the policy change (4)

Figure A4.5 below shows that respondent's level of understanding that safety agents are driven by monetary benefits, that any person who is interested in being H&S agent can become one by going for an interview only is excellent. Few respondents show a very poor and below average level of understanding with regards to the mentioned items.

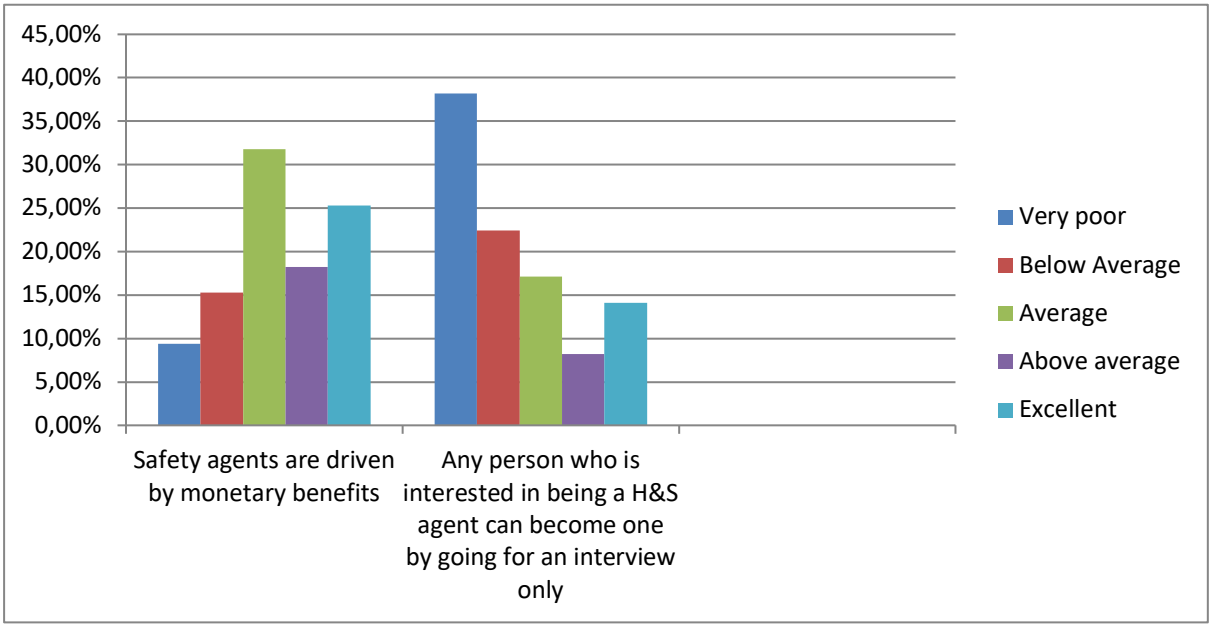

Figure A4.5: Respondents views on the implementation of the policy change (5)

ANNEXURE 5: DETAILED ANALYSIS (OBJECTIVE 3)

The levels of agreement on the applicability of the different change management strategies for implementing the new H&S policy.

Figure A5.1 shows that many respondents agree that the policy changes will affect projects during construction, that participants need to comply with the changes of the policy as per the law and that employees were informed by management about changes in the policy. e reasons for the changes were clearly communicated to the employees. A few respondents were undecided about the aforementioned strategies. Many respondents also strongly agreed that participants' need to comply with the changes of the policy as per the law which satisfies the need for registrations.

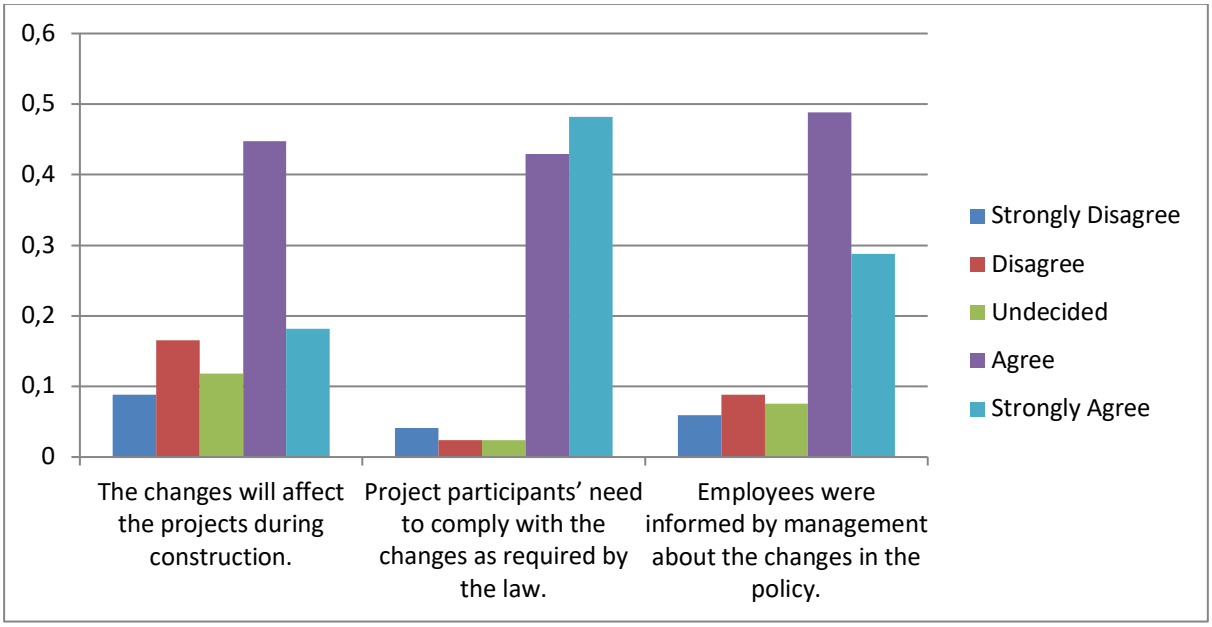

Figure A5.1: Respondents views on strategies' for the H&S policy changes (1)

Figure A5.2 shows that many respondents "strongly agree" and "agree" that the policy changes were communicated to all employees on time, that top management is actively involved in the policy changes in the H&S sphere and that they also pay attention to the changes that the employees might incur because of the policy changes. A few respondents were undecided and strongly disagreed with the mentioned strategies.

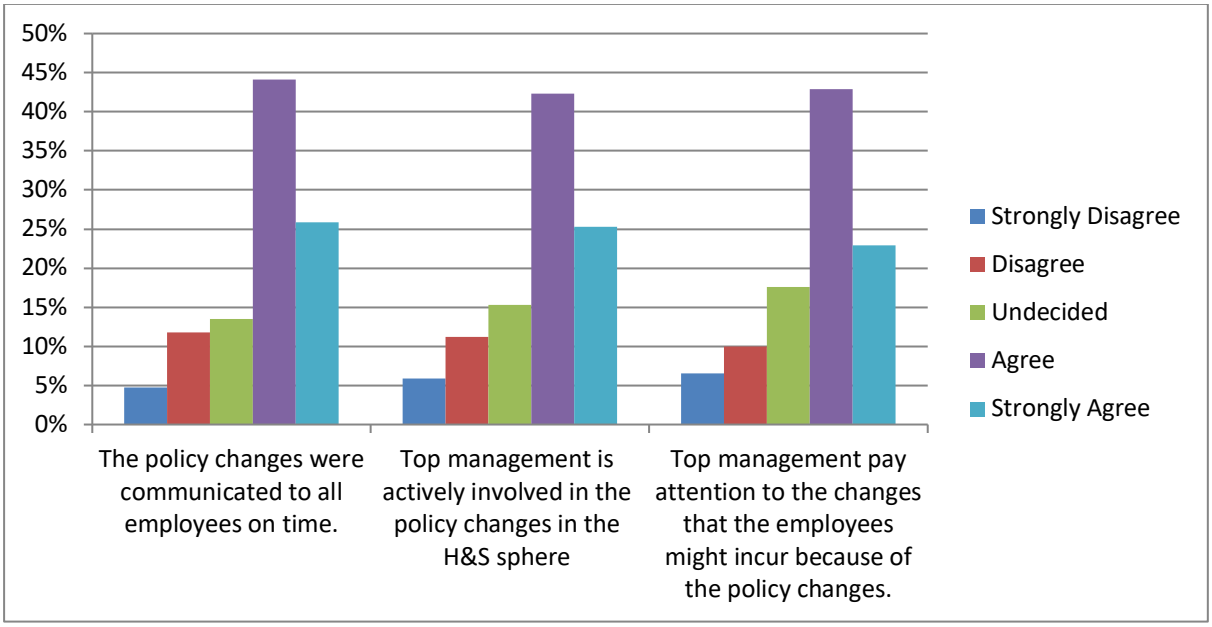

Figure A5.2: Respondents views on strategies' for the H&S policy changes (2)

Figure A5.3 shows that many respondents agree that employees know about the process of the revised H&S registrations and the progress of compliance with the revised H&S policy. They also agree that the reasons for the changes were clearly communicated to the employees. Those that are undecided and in disagreement are fall within the same range of percentage and make up a substantial amount. A few respondents strongly agreed with the mentioned strategies.

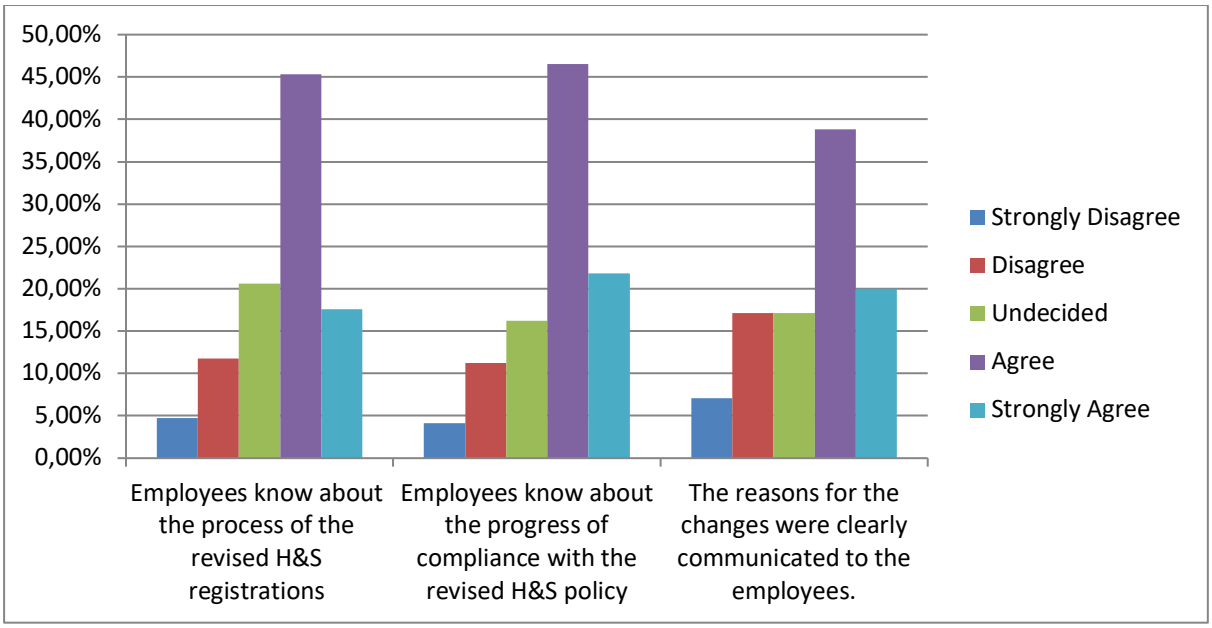

Figure A5.3: Respondents views on strategies' for the H&S policy changes (3)

Figure A5.4 shows that many respondents agree that employees knew about the policy change before it was published, that there is training with regards to change management and top down approach about the revised H&S policy. 27% of respondents say that thy did not know about the policy before it was published, and the 19% were undecided, so it is difficult to know whether they knew or did not know about the change before it was published.

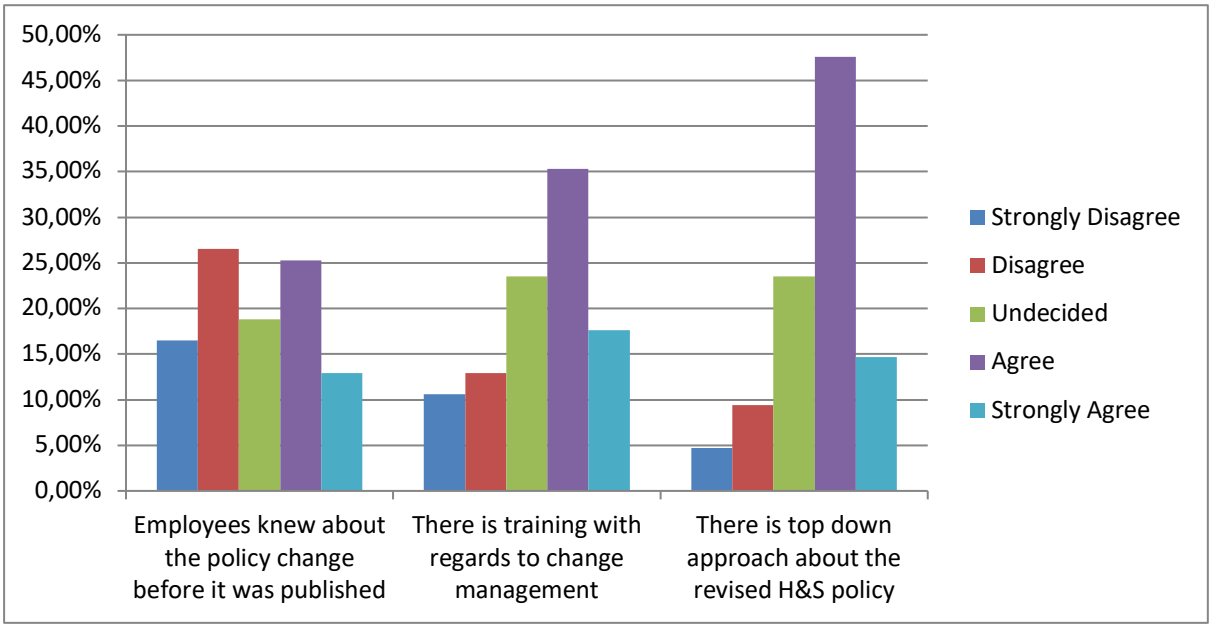

Figure A5.4: Respondents views on strategies' for the H&S policy changes (4)

Figure A5.5 shows that many respondents agree that here is bottom up approach about the revised H&S policy and that employees view it as a positive process. They also agree that the external body that manages the registration process is known to all employees. Few strongly agreed about the mentioned strategies while another few were undecided about them.

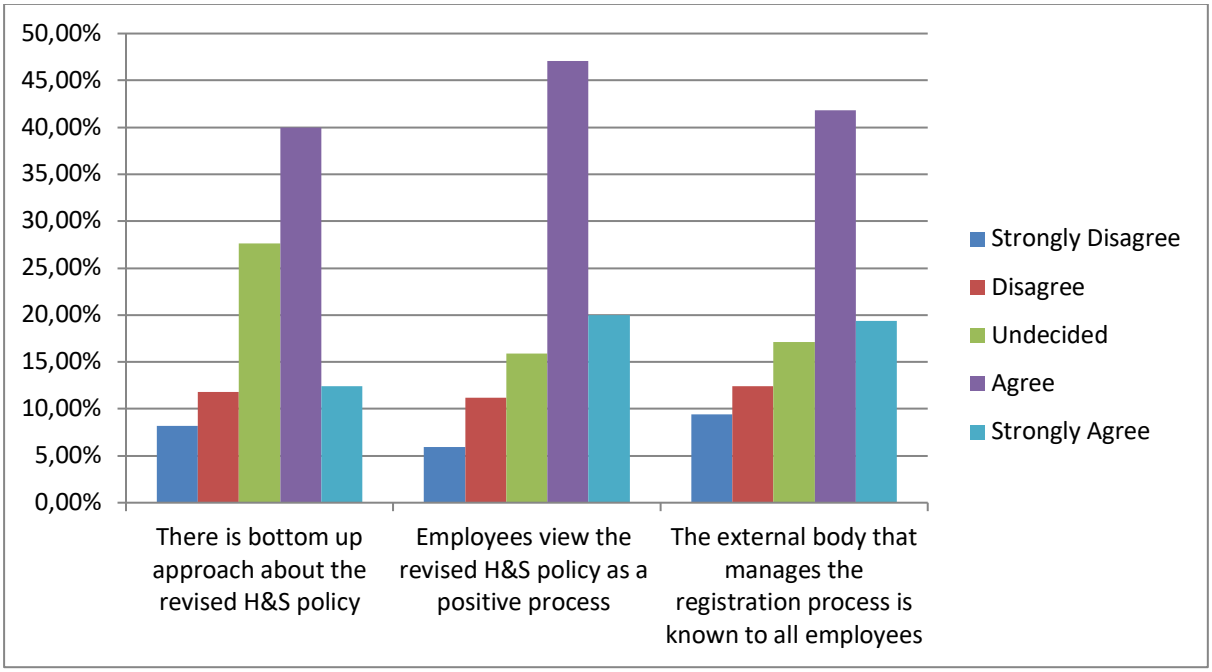

Figure A5.5: Respondents views on strategies' for the H&S policy changes (5)

ANNEXURE 6: DETAILED ANALYSIS (OBJECTIVE 4)

The levels of agreement on the attitudes towards organizational change

Figure A6.1 shows that many respondents agree that there is general support, trust and cohesion in leadership about a change. Few respondents were undecided about the mentioned strategies. The respondents were generally undecided, disagreed, strongly disagreed with the about the mentioned issues while the remaining were in strong agreement.

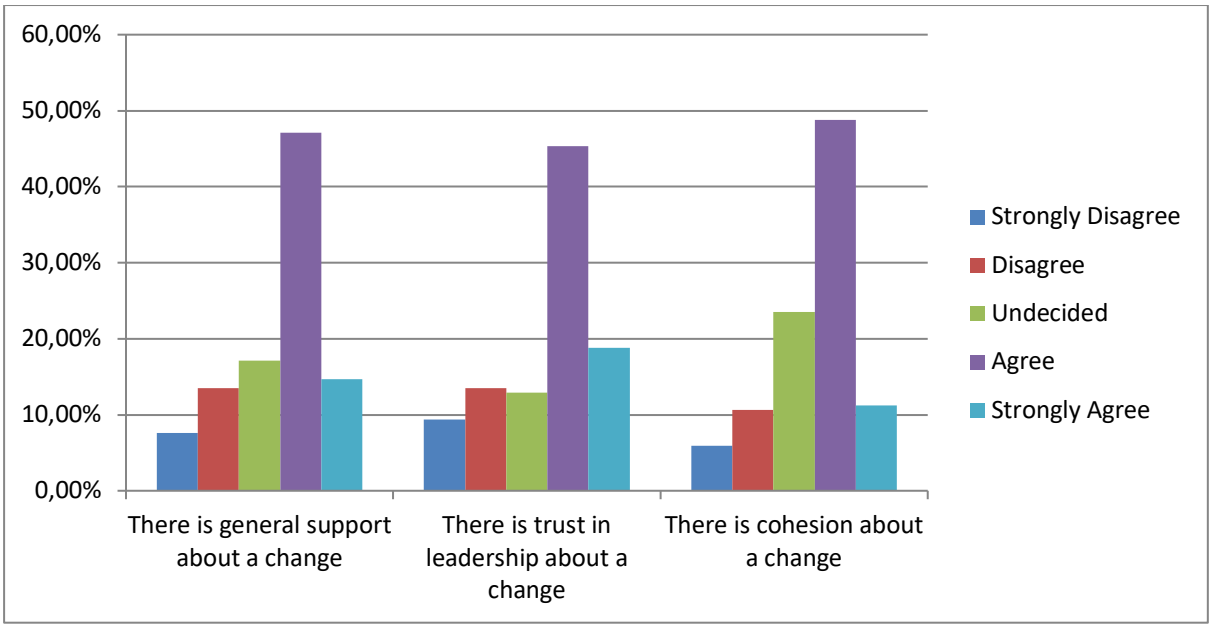

Figure A6.1: Respondents attitude towards organisational change (1)

Figure A6.2 shows that many respondents agree and also a few strongly agree that there is participatory management and politicking about a change, and there is employee involvement in the change process. Few respondents were undecided about the mentioned strategies. Similarly many respondents strongly disagreed with the about the mentioned issues.

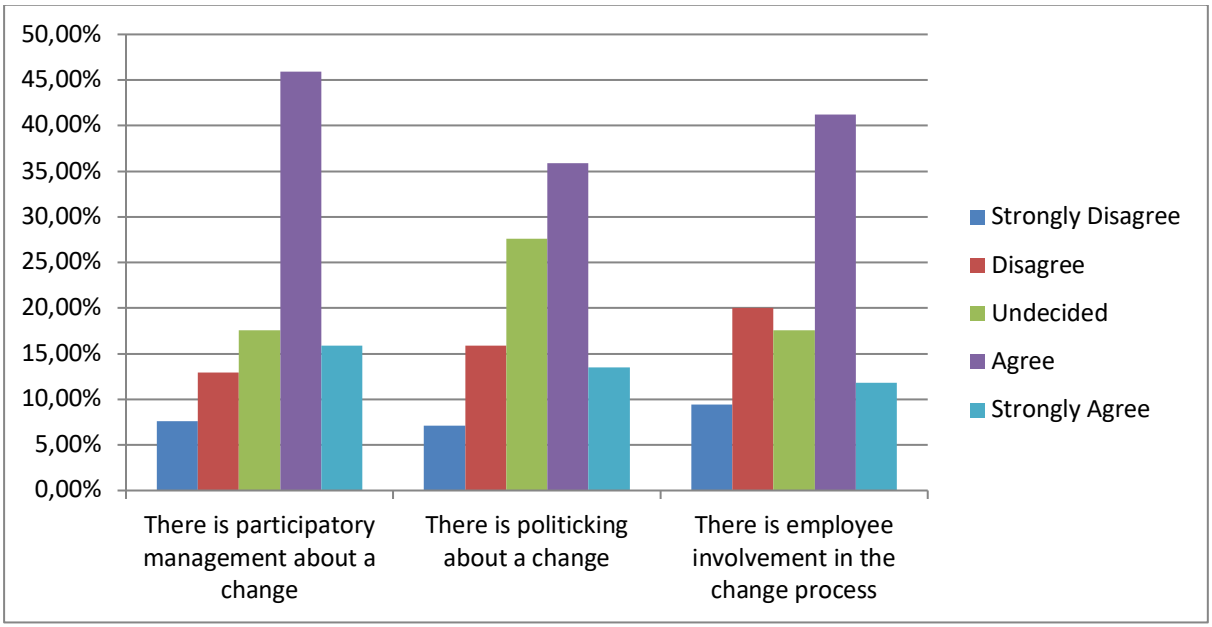

Figure A6.2: Respondents attitude towards organisational change (2)

Figure A6.3 shows that many respondents agree that there is an ability of management to lead change, that the attitude of top management towards change is positive, that they as employees have the intentional readiness for change in the organization and also that there is cognitive readiness for change among the A few respondents were undecided about the aforementioned strategies. Similarly many respondents were undecided about the mentioned issues and this is a cause for concern as they all are in the construction industry.

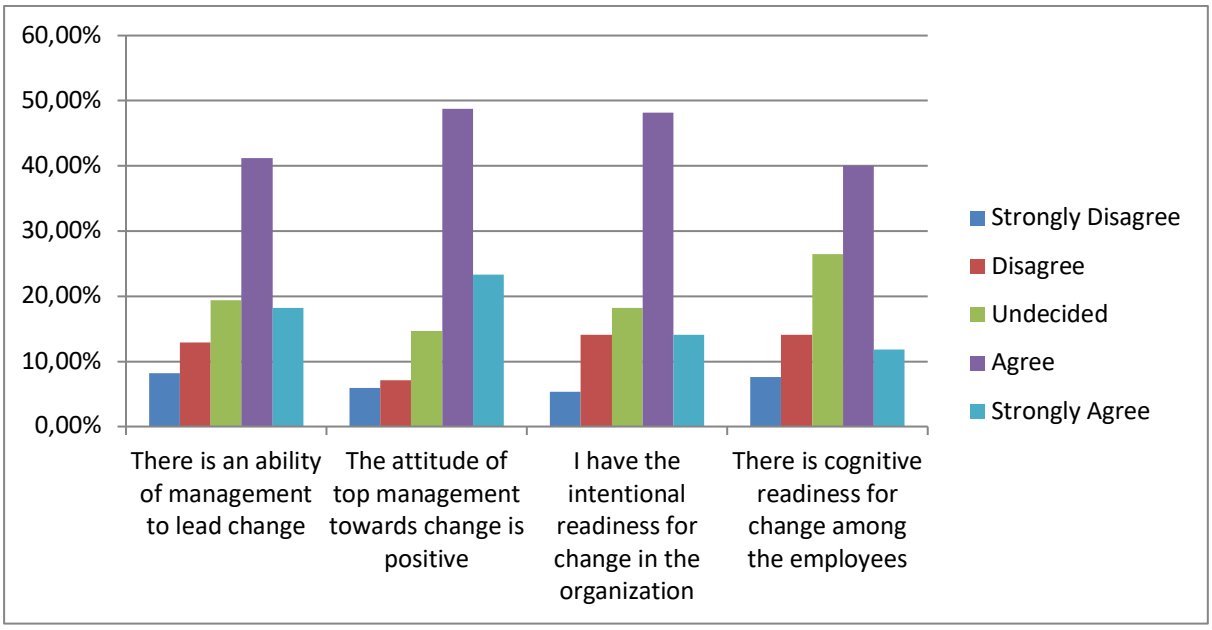

Figure A6.3: Respondents attitude towards organisational change (3)