

Franco Geminiani & John Smallwood

A critical review of the effectiveness of the Department of Labour (DoL) Occupational Health and Safety (OH&S) Inspectorate in relation to the construction industry in South Africa

Peer reviewed

Abstract

Irrespective of all the efforts made by the Department of Labour (DoL) and other relevant stakeholders to improve construction occupational health and safety (OH&S) performance, there is still a very high level of accidents and fatalities in South Africa. Injuries and accidents to workers help no community in any nation. The construction industry in South Africa is generally known to be one of the most hazardous and has one of the most dismal OH&S records among all industrial segments with an unacceptably high level of injuries and fatalities resulting in considerable human suffering. A doctoral study was recently conducted with the aim of investigating the effectiveness and performance of the DoL OH&S Inspectorate in South Africa. Information was sought and obtained from various respondents including civil and building contractors, OH&S consultants, project managers, DoL inspectors, and designers by means of questionnaires.

The research identifies interventions which could contribute to a significant reduction in the number of accidents, which in turn is likely to result in: a reduction in the cost of accidents (CoA); a reduction in the cost of workers' compensation insurance; alleviation of fatalities, injuries, pain and suffering, and a reduction in the indirect CoA to society and the national health care system.

The salient findings of the study are presented and elucidate that the DoL OH&S Inspectorate is not effective in terms of OH&S relative to the construction industry in South Africa. Conclusions and recommendations included reinforce the need for a reviewed OH&S Inspectorate model framework. The structured normative model consists of fundamental elements which guide to improve the effectiveness of the DoL OH&S Inspectorate. The findings of the study with recommendations are included.

Keywords: Effectiveness, Occupational health and safety, Inspectorate

Dr Franco Luciano Geminiani, Senior Lecturer, Department of Building and Quantity Surveying, Nelson Mandela Metropolitan University, P O Box 77000, Port Elizabeth, 6031, South Africa. Tel.: 041 5043203, Fax: 041 5049203, E-mail: <fl.geminiani@nmmu.ac.za>

Prof. John Julian Smallwood, Head of Department of Construction Management, Nelson Mandela Metropolitan University, P O Box 77000, Port Elizabeth, 6031, South Africa. Tel.: 041 5042790, Fax: 041 5042345, E-mail: <john.smallwood@nmmu.ac.za>

Abstrak

Ten spyte van die Departement van Arbeid en ander betrokke rolspelers se pogings om die prestasie van die Beroepsgesondheid en Veiligheid in die konstruksiebedryf te verbeter is daar nogsteeds 'n baie hoë vlak van ongelukke en sterftes in Suid-Afrika. Beserings en ongelukke van werkers het 'n baie negatiewe uitwerking op die gemeenskap en die samelewing. Die konstruksiebedryf in Suid-Afrika is oor die algemeen bekend as een van die mees gevaarlike en het een van die powerste rekords onder al die nywerheidssegmente met 'n onaanvaarbare hoë vlak van ongelukke en sterftes wat lei tot geweldige menslike leiding. 'n Doktorale studie is onlangs uitgevoer met die doel om die doeltreffendheid en prestasie van die Departement van Arbeid se Beroepsgesondheid en Veiligheidsinspektoraat in Suid-Afrika te ondersoek. Inligting is deur middel van vraelyste van verskeie respondente verkry. Hierdie respondente sluit in siviele en boukontraakteurs, Beroepsgesondheid en Veiligheidskonsultante, projekbestuurders, inspekteurs en ontwerpers van die Departement van Arbeid.

Die navorsing identifiseer intervensies wat kan bydra tot 'n betekenisvolle afname in die aantal ongelukke. Dienooreenkomstige beteken dit ook 'n afname in die koste wat ongelukke meebring, vergoeding wat werkers vir ongelukke eis, verligting van sterftes, beserings, pyn en lyding en die indirekte koste van ongelukke vir die gemeenskap en die nasionale gesondheidsorgstelsel.

Die belangrikste bevindings van die studie wat uitgelig en waarop uitgebrei word, is dat die die Departement van Arbeid se Beroepsgesondheid en Veiligheid in die konstruksiebedryf nie doeltreffend is nie. Gevolgtrekkings en aanbevelings beklemtoon die behoefte aan 'n hersiene Beroepsgesondheid en Veiligheidsinspektoraat raamwerk model. Die gestruktureerde normatiewe model bestaan uit fundamentele elemente wat kan lei tot die verhoging van die doeltreffendheid van die Beroepsgesondheid en Veiligheidsinspektoraat van die Departement van Arbeid.

Sleutelwoorde: Effektiviteit, beroepsgesondheid en veiligheid, inspektoraat

1. Introduction

The construction industry in South Africa is generally known to be one of the most hazardous with an unacceptably high level of injuries and fatalities resulting in considerable human suffering. From general statistics released throughout the world and also from past historical perspectives it is clear that OH&S has always been problematic (Hinze, 1997). Comparisons have often been made between the construction industry and other industrial sectors. When examining the nature of construction, the work is often performed under the most arduous and extreme climatic conditions. The terrain is generally not favourable to the safe movement of people, materials, and machines.

Smallwood (2000 citing Griffith 1995; Chan & Chan 1996; Hinze 1997) refers to the uniqueness of the construction industry when motivating commitment to OH&S. The authors further state that although many characteristics which result in the uniqueness of the construction

industry may be found in other industries, the characteristics collectively constitute a challenge in terms of construction OH&S.

According to Strydom (2002) the South African construction industry in 2001 was regarded by the DoL as one of the worst OH&S performers in terms of injuries and fatalities and was ranked after industries such as fishing, transport, forestry, textiles, and mining. Over the years the construction industry has consistently been among those industries with high injury and fatality rates (DoL, 2000). Reducing occupational diseases and accidents would not only improve and save people's lives, but it would reduce the hundreds of millions of Rand paid annually to victims of work related accidents and relieve the pressure placed on the country's monetary situation.

2. Review of the literature

2.1 OH&S Statistics

Attention and awareness to OH&S in the construction industry has increased in South Africa over the past decades. Although construction work has become healthier and safer over the years, there is still much to be accomplished. When recent statistics published by the DoL are analysed, it is notable that a considerable number of fatalities still occur each year in the construction sector. The construction sector has a high number of fatalities compared to other sectors of industry.

Statistics released by the DoL indicate that in 1997, of the 6 267 work related accidents, 509 (8.1%) were in the construction sector, while of the 7 028 accidents in 1998, 675 (9.6%) were in this sector. Further statistics released show that of the 482 deaths in 1997, 74 (15.3%) were in construction and of the 584 deaths in 1998, 76 (13.0%) were construction related. This indicates a marginal decrease of 2.3%. In 1997 deaths increased 4% on the previous year. By comparison, according to the DoL Annual Report (2001), of the 337 incidents that have taken place, 68 (20.1%) fatalities occurred in the construction sector. This shows a decrease of 10.5% on 1998 figures. Statistics released by the DoL indicate that in 2000, 337 work related incidents occurred in the construction sector. Further statistics released show that in 2000 there were 68 deaths. This indicates an increase of 9.1% on the previous year.

Statistics released by the Federal Employers Mutual Assurance (FEMA) indicate that fatalities caused by motor vehicle accidents during the course of employment are also noticeably high. The

claims registered and finalised by FEMA, for the period January 2001 to December 2001, a total of 47 fatalities are recorded with an incumbent cost of claims totalling R4,230,291.38. In comparison, the period January 2002 to December 2002, indicates a total of 43 fatalities, with an incumbent cost of claims totalling R7,904,816.21. This represents a 53% increase in the total cost of claims paid out compared to the previous year. The period January 2004 to September 2004, indicates a total of 42 fatalities, with a total value of claims paid totalling R20,498,431.39. This is a substantial increase of 38% relative to 2002.

On the contrary to the background presented Szana (2007) states that the DoL conducted numerous inspections, highlighting consolidated statistics for March 2007, and from recent 'blitz' inspections:

- 923 construction sites were visited;
- 1 273 employers were visited — principal and other contractors;
- 604 employers were compliant (47.4%);
- 669 employers were non-compliant (52.6%); and
- 962 notices were served: 41 (4.3%) improvement, 766 (79.6%) contravention, and 155 (16.1%) prohibition.

According to Szana (2007) during national 'blitz' inspections conducted in March and April 2007, a total of 374 inspectors inspected 1,909 workplaces, of which 975 (51%) were compliant, and 815 (42.6%) were non-compliant. 255 (17.5%) improvement, 1,028 (70.6%) contravention and 172 (11.8%) prohibition notices were issued - a total of 1,455.

According to Szana (2007) during national 'blitz' inspections conducted in August 2007 on construction organizations, a total of 441 inspectors visited 1,415 workplaces, of which 759 (53.6%) were compliant, and 829 (58.6%) were non-compliant. 86 (6.2%) improvement, 1,015 (73.1%) contravention, and 287 (20.7%) prohibition notices were issued - a total of 1 388.

According to Strydom (2002) a major contributing factor to the poor record of the construction industry is the scarcity of OH&S inspectorate expertise. There is but a small band of OH&S inspectorate personnel employed, as well as a scarcity of OH&S practitioners and consultants active in the construction industry due to the low priority that employers place on OH&S, as well as the poor remuneration offered as a consequence of this.

Strydom (2002) further states, that for a variety of reasons, the DoL is experiencing a serious staff shortage, high turnover of staff, and a lack of experienced skilled staff. This has led to a situation where employers no longer believe that the DoL has any 'teeth' and consequently OH&S in the workplace is suffering. The current vacancy rate is 47.8%. Within this context, it appears that the DoL inspectorate is understaffed and not carrying out its duties effectively with regards to OH&S in the construction industry. It is therefore important and urgent that this matter be addressed.

According to Makhonge (2005) the challenges facing the inspection system in Kenya is that the traditional approach which has been practiced for a long period of time results in the occupier of a factory / construction site primarily waiting for a government inspector to inspect and point out a contravention of the law, on occasions requiring that the occupier be taken to court before any tangible improvements are made. If no inspector visits the factory, the workplace OH&S improvements implemented by the employer are usually very basic.

Relative to the United States of America (USA), the USA's DoL Annual report states that the construction industry did not meet its goal of reducing injuries and deaths (Agnvall, 2001). The DoL's goal was to decrease fatalities in the construction industry by 3%, however, the fatality rate declined only 2% from the 1993 - 1995 base line. During that three year period, the fatality rate was 14.5 per 100 000 workers, and subsequently the rate reduced marginally to 14.2 per 100,000 workers during the period 1996 - 1999.

Based on the OH&S statistics presented, it can be concluded that there is a high injury and fatality rate in the construction industry, compared to other sectors of industry in the majority of countries. However, in general, South African statistics tend to be higher than those of other countries globally. This phenomenon remains a concern for South Africa.

2.2 OH&S Management

The OH&S of the human being at work on site or in any working environment is a complex problem. It is the subject of many conventions, inquiries, reports, legislation, regulations and volumes of literature. Various authors such as Hinze (1997), Rowlinson (1997) and Levitt & Samelson (1993) argue that OH&S is a corporate responsibility, which demands the skills of OH&S managers, and that those responsible for OH&S within the workplace must provide input to all

operations. It appears that in the present corporate environment, the performance of any organisation is measured by its management of resources and the main objectives of management appears to be, to increase productivity, and reduce costs to the detriment of the OH&S of its workforce. The question is thus asked: Is this indirect neglect having a negative effect on the OH&S of the workforce? Furthermore, to what extent does and can the OH&S Inspectorate influence management commitment and induce the realisation that H&S complements the other parameters such as cost, quality, and time.

2.3 Behavioural issues

Attention to OH&S in the construction industry has increased dramatically over the past decades. Hinze (1997) states that the time for OH&S awareness has arrived and that OH&S is no luxury, it is a necessity. According to Smallwood (1995), OH&S education is important for both management and workers as incidents and accidents occur downstream of culture, management system and exposure. However, culture and management system in turn, are both influenced by OH&S education and that a lack of education can in turn have an effect on behaviour.

2.4 Phase OH&S Intervention in sequence

Hinze (1997: 201) maintains that "Working on a project without establishing a strong safety culture, is like holding a dead man's hand," and that support for OH&S must begin at top management level. This requires that the CEO must be committed to enhancing the organisation's OH&S efforts wherever possible.

Hinze (1997) further states that the OH&S culture on a project is solid when OH&S is foremost in the minds of all project and organisation personnel, beginning at worker level and proceeding all the way to top management. An OH&S culture should be based on the conviction that no worker should ever be placed in a situation in which an injury has a high probability of occurring. This however would be the reward, but is this being implemented and is the DoL Inspectorate executing its duties effectively to assure that workers are not being placed in unhealthy and unsafe situations?

2.5 The importance of culture

Smallwood (2000: 70) defines culture as:

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the learned behaviours as well as the beliefs, attitudes, values and ideals that are characteristic of a part of society or population.

This analogy best postulates the relationship between management commitment, education and training and their influence on the occurrence of incidents. Culture in turn is collectively comprised of values, purpose, vision, goals, mission and, assumptions.

Table 1: Incidents are downstream

Culture →	Management System →	Exposure →	End Point
Purpose	Education / Training	Behaviour	Incidents
Mission	Practices	Conditions	
Values	Programme	Plant & equipment	
Vision	Site layout	Facilities	
Goals	Behavioural consequences		
Assumptions	Accountability		
	Inspections		
	Priorities		
	Attitude		
	Measurement system		
	Improvement model		
	Resources		
	Investigations		

Source: Krause 1993: 40

In the case of statistically based quality improvement, management does not look at product defects namely, downstream factors, but at upstream factors of production, which are predictive of defects. In terms of the behaviour-based accident prevention process, accident frequency rates represent downstream indicators. Accident prevention relies instead on sampling the mass of OH&S related behaviours which lie upstream and which precede any particular incident.

Table 1 illustrates the upstream → downstream sequence postulated by Krause (1993) - culture at the upstream end influences management system, which influences exposure, which may or may not result in incidents at the end point. In the case of statistically based quality improvement, management does not look at product defects i.e. downstream factors but at upstream factors of production which are predictive of defects. In terms of the behaviour based accident prevention process, accident frequency rates represent downstream indicators.

It is also notable that 'inspections', an important function of the DoL Inspectorate is positioned as a management system and is categorised as downstream. In terms of Krause's model, the DoL Inspectors intervene at 'Exposure' stage when conducting inspections in addition to 'Management system' stage. They also intervene after an accident has taken place relative to the 'End point'.

2.6 Legislation

In South Africa, the OH&S Act No. 85 of 1993 constitutes the basis of OH&S legislation, with which all organisations have to abide. The management of an organisation is therefore legally required by law to enforce OH&S to ensure that their workers are not injured. It is also stated in the Act that the DoL Inspectorate has certain powers relative to the enforcing of legislation. Is this being carried out? As a requirement of success, management should also commit themselves to OH&S, which in the long term is beneficial to both the organisation and its workers. Are the various regional inspectorates sufficiently staffed to be effective in policing OH&S? In addition the new Construction Regulations were promulgated on the 18 July 2003 under section 43 of the OH&S Act, after consultation with the Advisory Council for OH&S. The intention of the promulgation of the new regulations is to have a set of legislation specifically directed at and applicable to the construction industry.

In summation, managers with an OH&S responsibility have a key role in their organisations for ensuring that appropriate OH&S systems are in force and that they comply with the law and statutory regulations. Their role is to see that both the general policy and strategic decisions relating to OH&S are in place. Failure to comply is likely to result in prosecution of the said organisations and in certain circumstances the responsible person can be held personally criminally liable and face civil proceedings. In practice, this should be the task of the DoL Inspectorate. However, is the DoL Inspectorate effectively conducting its duties?

2.7 The Role of the DoL Inspectorate

According to a media statement released on the 8 April 2002 by the DoL, labour and business signed an historical accord jointly committing to prioritise the promotion of OH&S in the workplace. The DoL has established a fifteen-point programme of action and is committed to addressing the respective interrelated challenges within a period of five years. Point eight of this programme specifically aims to adequately deal with the negative consequences of occupational

accidents and ill health of individuals, enterprises of the state and to accelerate measures aimed at reducing accidents and improving the OH&S of workers (DoL, 2000).

According to the statement, the Chief Directorate consolidated working relationships to ensure cooperative governance with other departments. In doing so, the result was that during the year 2000, 5,950 incidents and 493 fatalities were investigated and finalised. Notices served on employers, included 6,970 contraventions of the regulations and 649 contraventions of the Act.

During the year 2000, 10,060 inspections were conducted thus exceeding the 6,408 targeted for the year. A total of 1,887 incidents and 636 complaints were also registered with the DoL (DoL, 2001).

The report further states that during 2000, the DoL currently employed 82 inspectors with OH&S qualifications. However, mention is also made that the DoL inspectorate operated with a shortage of inspectors with OH&S competencies and that the vacancy rate was 47.8%. Reasons for the vacancy rate include a lack of experience in the engineering disciplines, affirmative action and the poor remuneration being offered by the DoL.

3. Methodology

The methodology adopted in this study is the descriptive method, which entails the technique of observation (Leedy, 1993). Quantitative methods and observation over a period of 3 years included the use of questionnaires.

The research project was conducted in six phases. The pilot survey constituted Phase 1, conducted among general contractors (GCs) in the Eastern Cape, followed by Phase 2 in the form of the empirical survey conducted among GCs, members of the Master Builders South Africa (MBSA), and the South African Federation of Civil Engineering Contractors (SAFCEC).

Phase 3 to 6 entailed the surveying of OH&S officers, practitioners, and consultants, construction members of the Association of Construction Project Managers (ACPM), DoL Inspectors, both currently employed and retired, and designers in the form of member practices of the South African Institute of Architects (SAIA) and the South African Association of Consulting Engineers (SAACE), and members of the South African Institution of Civil Engineers (SAICE).

3.1 Phase 1 (Pilot Study)

The population for the pilot study comprised of general contractors, respondents from the Eastern Cape, Border and Southern Cape regions who are members of the MBSA. A total of 164 questionnaires were mailed / faxed to the contractors in the demographic region of the Eastern Cape, comprising of the Nelson Mandela Metropolitan area, Border and the Southern Cape regions in July 2004. Only 19 contractor responses were received resulting in a response rate of 12.0% ($19 / 164 - 5$). In contrast, 17 responses were received in response to a total of 22 questionnaires that were mailed / faxed to OH&S consultants, designers, project managers, Safety, Health and Environment (SHE) officers, engineers, insurers, and quantity surveyors, which equates to a response rate of 77%.

3.2 Phase 2

The Phase 2 survey was conducted among GC members of the MBSA and SAFCEC - a total of 626 (503 and 123) questionnaires were mailed / faxed to building and civil engineering GCs in the nine provinces of South Africa. A total of 107 (84 and 23) questionnaires were received, which equates to an overall response rate of 18.0% ($107 / 626 - 19 + 3 + 1$).

3.3 Phase 3

During Phase 3, engineers, OH&S consultants in two categories, namely, construction OH&S consultants and generic OH&S consultants, insurers, Quantity Surveyors and Safety Health and Environment (SHE) were surveyed - a total of 236 questionnaires were mailed / faxed to OH&S consultants in the nine provinces of South Africa. A total of 55 questionnaires were received, which equates to an overall response rate of 23.0% ($55 / 236 + 5 + 3 + 1$).

3.4 Phase 4

Phase 4 addressed Project Managers, in the form of members of the ACPM in South Africa. A total of 101 questionnaires were mailed to them in the nine provinces of South Africa per e-mail and via the postal service. A total of 14 questionnaires were received, which equates to a response rate of 13.8% ($14 / 101 + 3 + 5 + 1 + 1$).

3.5 Phase 5

During Phase 5 Inspectors currently employed by the DoL Inspectorate in South Africa were surveyed. A total of 113 questionnaires were mailed via the postal service to the Inspectorate in the nine provinces of South Africa. It is notable that 8 inspectors responded indicating that they were not allowed to complete the questionnaire until permission / approval was granted by their respective district manager. A total of 22 questionnaires were received, which equates to a net response rate of 19.4% (22 / 113).

3.6 Phase 6

During Phase 6, randomly selected designers in the form of 248 Architects registered with the South African Institute of Architects (SAIA), and 167 and 179 Consulting Engineers registered with the South African Institution of Civil Engineers (SAICE), and the South African Association of Consulting Engineers (SAACE) respectively, were surveyed nationally - a total of 594. A total of 79 questionnaires were received from 19 Architects, 55 Consulting Engineers, and 5 'Others', which equates to an overall response rate of 13.2%.

4. The findings

Despite the promulgation and implications of the Construction Regulations, it is notable that only 10 of the inspectors (7.6%) have attended courses, which implies that 9 inspectors appear to have no knowledge thereof. It is also notable that the highest number of courses attended by the inspectors is relative to scaffolding (9.9%), and the OH&S legislation (9.9%) respectively (Table 2).

Table 2: Courses completed by DoL Inspectors

Course	Response	
	No.	%
Scaffolding	13	9.9
Excavations	3	2.2
OH&S Representative	8	6.1
Hazardous biological agents regulations	8	6.1
Diving regulations	4	3.0
Major hazardous installation regulations	8	6.1
Explosives regulations	2	1.5
Construction regulations	10	7.6
Asbestos regulations	6	4.5
Environmental regulations	6	4.5

Facilities regulations	6	4.5
Lead regulations	6	4.5
Noise-induced hearing loss regulations	6	4.5
Driven machinery regulations	5	3.8
General machinery regulations	5	3.8
OH&S legislation	13	9.9
International Labour Office (ILO)	7	5.3
SAMTRAC	6	4.5
ASTRAC	0	0.0
COIDA	9	6.8

Table 3 indicates the number of year's construction experience which the responding inspectors possess. It is notable that 13.6% of the inspectors have less than one year of construction experience, and 27.3% have only 1 year of construction experience. Therefore, 40.8% effectively have one year or less of construction experience. Furthermore, 27.3% indicated 5 years experience and only 9.1% had more than 10 years of construction experience.

Table 3: Total number of years of construction experience

Category (years)	Years (%)
<1	3.6
1	7.2
3	9.0
4	4.5
5	27.2
6	9.0
>10	9.0

4.1 Inspections

The finding indicates that 38.8% of the respondents agree that there was no increase in the number of inspections by the DoL Inspectorate (Figure 1). In contrast 27.7% believe to the contrary.

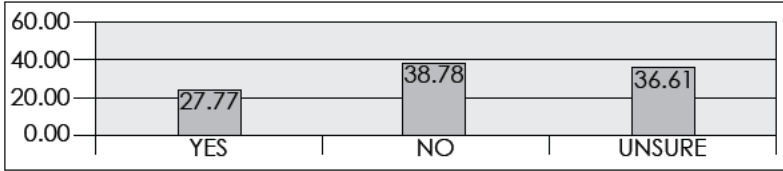


Figure 1: Percentage increase in number of inspections

Furthermore, given the 36.8% negative response, construction sites can be deemed to have not been subjected to an increase in 'blitz' inspections (Figure 2). 29% responded positively. However, in terms of industry sector, 51.2% of building and 73.9% of civil engineering contractor respondents agree that there was a minimal increase in 'blitz' inspections. It is notable that 32.5% of the respondents responded 'Unsure'.

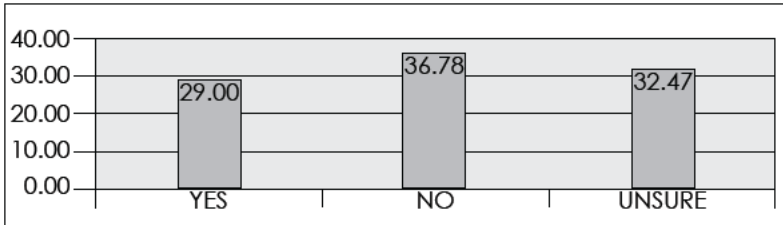


Figure 2: Percentage increase in number of 'blitz' inspections

4.2 Mean Scores as a measure of Central Tendency

Fifteen aspects forming the nucleus of the study are presented. The mean scores, which are a measure of central tendency, are based upon percentage responses to a five point Likert type scale originate from the stakeholders surveyed during the six phases of the study. However, in some instances, certain mean scores of a particular stakeholder group may not be presented due to them not having been actively involved in a certain activity.

In order to facilitate the interpretation of the findings, Table 4 provides a summary of the performance of the OH&S Inspectorate in terms of mean scores ranging between 1.00 and 5.00, based upon percentage responses to a scale of 1 to 5. The overall mean score is presented in the extreme right hand column of the table. The overall percentages are also shown in histogram format.

4.2.1 Aspect 1

Given that the overall mean score of 2.80 for all phases is < 3.00, in general the DoL can be deemed to be ineffective in terms of conducting their duties. It is notable that only the Inspectors (Phase 5) can be deemed to perceive the DoL Inspectorate to be effective.

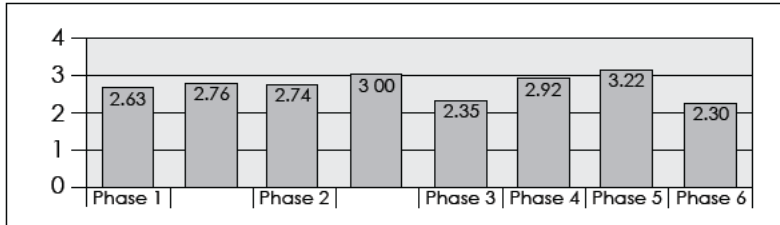


Figure 3: Effectiveness of the DoL Inspectorate in terms of conducting their duties

	Aspect	Rating of the DoL Inspectorate relative to various aspects (MS)							Mean score	
		Pilot study (Phase 1)		Contractors (Phase 2)		Consultants (Phase 3)	Project Managers (Phase 4)	Inspectors (Phase 5)		Designers (Phase 6)
		Bldg.	Cons.	Bldg.	Civil	Cons.	Pm.	Insp.		Design
1.	Effectiveness of DoL Inspectorate in terms of conducting their duties	2.63	2.76	2.74	3.00	2.35	2.92	3.22	2.30	2.74
2.	Competence of DoL in terms of construction knowledge and skills	2.78	2.76	2.74	3.00	2.51	3.07	3.04	*	2.46
3.	Frequency of DoL Inspectors visiting sites	1.94	*	2.42	2.43	*	*	*	*	2.26
4.	Effectiveness of DoL Inspectors conducting 'blitz' inspections	*	3.12	*	2.63	*	*	3.45	*	3.06
5.	Appropriateness of the checklists used by the DoL Inspectorate during inspections	2.83	3.12	3.16	2.95	3.11	*	3.63	*	3.13
6.	Performance of DoL Inspectorate in terms of liaison and promotion	2.50	2.68	2.75	2.66	2.21	*	2.90	*	2.61

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7.	Prevailing culture of DoL Inspectorate in terms of morale motivation and satisfaction	2.50	2.81	2.95	2.60	2.40	*	2.36	*	2.60
8.	Support for the current framework of the DoL Inspectorate	3.10	2.68	3.32	3.50	2.72	3.50	3.40	3.33	3.19
9.	Effectiveness of the DoL Inspectorate in terms of enforcing legislation	2.73	2.35	3.02	2.61	2.47	2.78	3.09	*	2.72
10.	Support for DoL accreditation system based on contractors OH&S performance	3.73	3.82	3.77	3.72	3.53	4.07	3.45		3.71
11.	Support for the implementation of an incentive scheme which recognises a reduction in OH&S injuries and fatalities	3.94	4.23	4.17	4.21	4.24	4.46	4.00		4.14
12.	DoL Inspectorate contribution to improvement in organisations' OH&S performance	2.22	3.00	2.35	2.13	2.29	3.00	3.54		2.64
13.	Rating of South African OH&S legislation relative to 'best practice'	3.00	2.76	3.01	2.90	2.94	2.78	2.68		2.86
14.	Effectiveness of DoL Inspectorate in terms of assuring OH&S	*	*	2.66	2.56	*	2.84	3.22		2.75
15.	Significance of DoL Inspectorate relative to accident prevention in construction	*	*	2.93	2.60	2.64	2.76	3.68		2.90

Table 4: Mean scores of general tendency obtained from various aspects of the questionnaires

4.2.2 Aspect 2

Given that the overall mean score of 2.46 for all phases is < 3.00, in general the DoL Inspectorate can be deemed to be not competent in terms of construction knowledge and skills (Figure 4). The marginally elevated score of both the Project Managers 3.07 and the Inspectors 3.04 possibly indicates that the respondents do not have, or seldom have personal contact with the DoL Inspectorate and are not aware of the *status quo* with respect to the competency of the Inspectors.

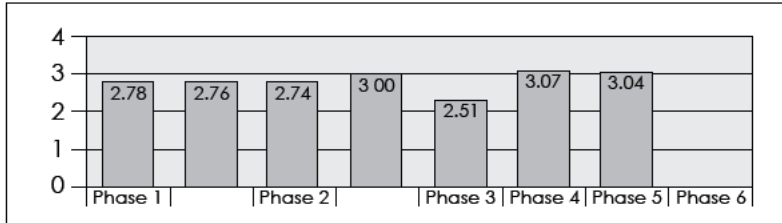


Figure 4: Competence of the DoL in terms of construction knowledge and skills

4.2.3 Aspect 3

Figure 5 indicates that the respondent sample strata consisted of only the building and civil engineering contractors. The consultants, project managers, inspectors, and designers do not generally have contact or record of visits to sites, and were therefore not asked to respond to this question.

All the mean scores are < 3.00, which indicates that construction sites can be deemed to not have been subjected to DoL Inspectors' visits.

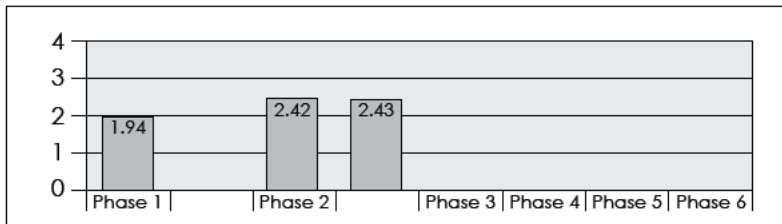


Figure 5: Frequency of DoL Inspectors visiting sites

4.2.4 Aspect 4

Given that 66.7% of the mean scores, are > 3.00, in general the effectiveness of the DoL Inspectorate in conducting 'blitz' inspections can be deemed to be more effective than ineffective (Figure 6). The consultants and project managers have no direct contact and record and therefore the question was not included. The respondents namely, the building and civil contractors agree that the DoL Inspectors were not effective in conducting 'blitz' inspections. However, it is notable that the consultants surveyed during the pilot study, and the Inspectors disagree with the aforementioned declaration, manifested in the elevated mean score > 3.00. In general 60.0% of

the building and civil engineering GCs agree that sites were subjected to 'blitz' inspections.

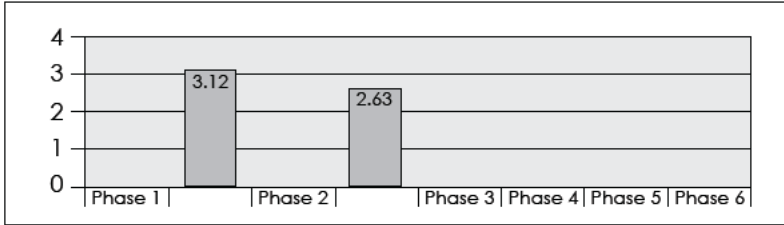


Figure 6: Effectiveness of the DoL Inspectors conducting 'blitz' inspections

4.2.5 Aspect 5

The majority of the responding sample strata mean scores indicate that the checklists used during inspections can be deemed to be appropriate rather than inappropriate. However, this is marginally so. Furthermore, it is notable that the building contractors responding to the pilot study conducted in the Eastern Cape (2.83) and the civil engineering contractors nationally (2.95), do not concur. The standardisation of the checklists in the various areas is therefore questioned. Are all checklists used by the DoL inspectorate comparable?

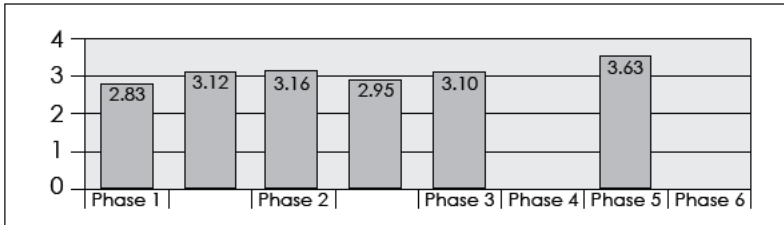


Figure 7: Appropriateness of the checklists used by the DoL Inspectorate during inspections

4.2.6 Aspect 6

The sample stratum consisted of building and civil engineering contractors, and inspectors. The project managers were not asked this question as they do not have direct personal contact with the DoL Inspectorate and are not aware of the *status quo* with respect to the liaison and promotion of the DoL Inspectorate. Given that the mean scores are < 3.00 relative to all sectors, including the Inspectors, the DoL Inspectorate can be rated poor rather than good in terms of liaison and promotion (Figure 8).

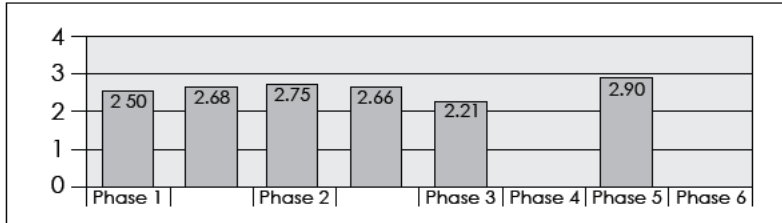


Figure 8: DoL Inspectorate in terms of liaison and promotion

4.2.7 Aspect 7

Given that all the mean scores are < 3.00, all sectors can be deemed to perceive the culture of the DoL Inspectorate in terms of morale, motivation, and satisfaction to be poor rather than good (Figure 9). The level of 'unsure' responses indicate that respondents do not have, or seldom have personal contact with the DoL Inspectorate, and are not aware of the present situation with respect to morale, motivation, and satisfaction. It is notable that the Inspectors who are employed by the DoL Inspectorate (phase 5) can also be deemed to perceive the culture to be poor rather than good.

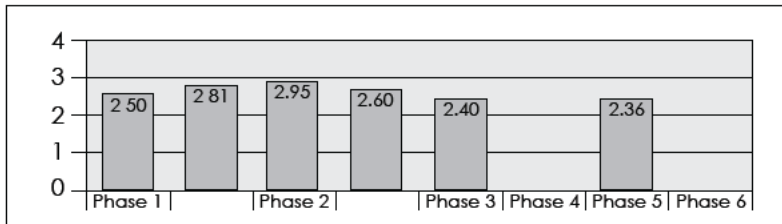


Figure 9: Prevailing culture of DoL Inspectorate in terms of morale motivation and satisfaction

4.2.8 Aspect 8

Figure 10 indicates that with the exception of the consultants, there is support for the current framework of the DoL Inspectorate. The overall mean score of 3.19 (Table 4) indicates that the stakeholders view the current framework to be effectual and supported rather than opposed. From the responses received it can be argued that not all the stakeholders are aware of the components of the current framework.

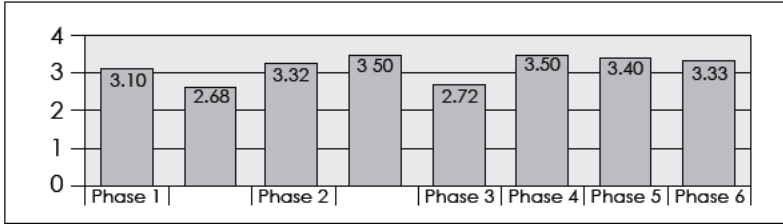


Figure 10: Support for the current framework of the DoL Inspectorate

4.2.9 Aspect 9

With the exception of the mean scores relative to building contractors (3.02) and inspectors (3.09) which are marginally > 3.00, the majority of the mean scores indicate that the DoL Inspectorate is not effective in enforcing legislation. The mean of 2.72 as shown in the rating of Figure 11 indicates that the consultants, civil engineering contractors and project managers contend that prescribed legislation is not being enforced.

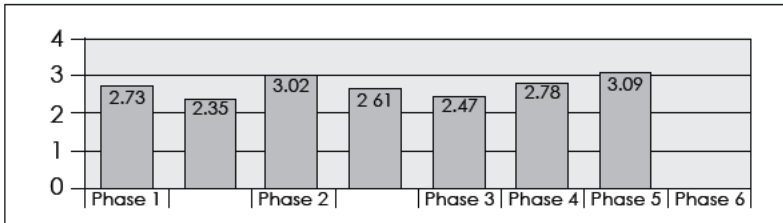


Figure 11: Effectiveness of the DoL Inspectorate in terms of enforcing legislation

4.2.10 Aspect 10

The mean scores presented in Figure 12 indicate overwhelming support for an accreditation system based on OH&S performance. It appears that such a system is welcomed by all respondents / stakeholders / contractors, which system could have a positive effect in terms of reducing fatalities and injuries. This is supported by an overall mean score of 3.72. Furthermore, it is notable that the inspectors' mean score is also > 3.00 and thus can be deemed to support an accreditation system.

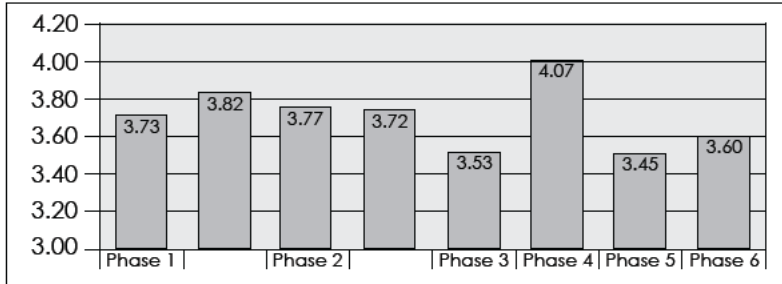


Figure 12: Support for DoL accreditation system based on contractors' OH&S performance

4.2.11 Aspect 11

The mean scores presented in Figure 13 clearly indicate support for the implementation of an incentive scheme that recognises a reduction in fatalities and injuries. All stakeholders surveyed support such an initiative.

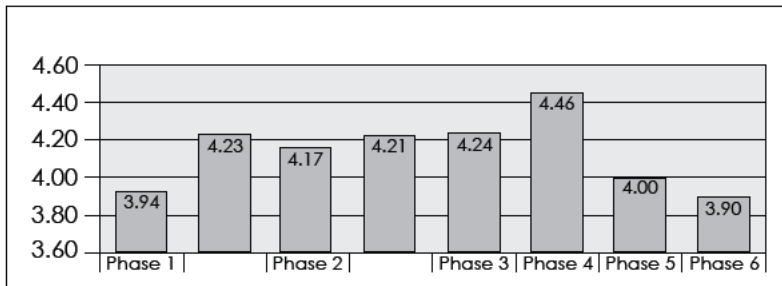


Figure 13: Support for the implementation of an incentive scheme which recognises a reduction in OH&S injuries and fatalities

4.2.12 Aspect 12

Given that the majority of the mean scores ≤ 3.00 , the DoL Inspectorate can be deemed to have not contributed to an improvement in organisations' OH&S performance. With the exception of the consultants, project managers, and DoL Inspectors, the contribution is perceived to be low.

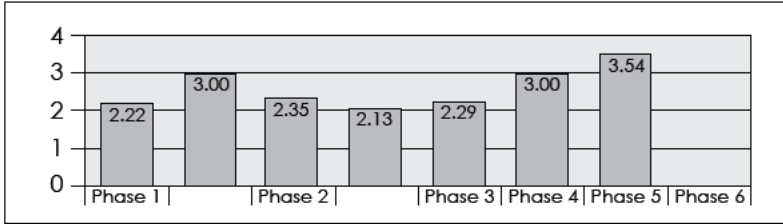


Figure 14: DoL Inspectorate contribution to improvement in organisations' OH&S performance

4.2.13 Aspect 13

Given that with the exception of one mean score, all mean scores are ≤ 3.00 , which indicates that South African OH&S legislation cannot be deemed to be perceived to be equal to 'best practice' (Figure 15). It is notable that the mean scores range from 2.68 to 3.01 – there is congruence in terms of perception.

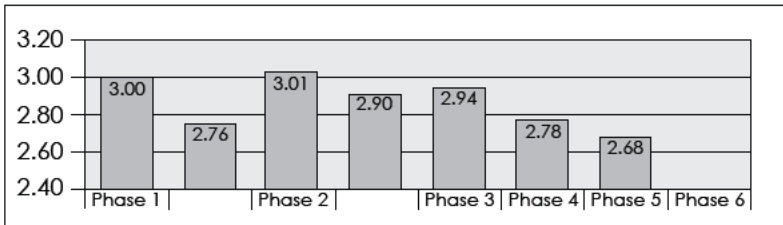


Figure 15: Rating of South African OH&S legislation relative to 'best practice'

4.2.14 Aspect 14

Figure 16 indicates that the respondent sample strata consisted of only the building and civil engineering contractors, project managers and inspectors. The mean mean score of 2.75 indicates that the DoL Inspectorate can be deemed to be ineffective, as opposed to effective, in assuring OH&S. However, it is notable that the Inspectors can be deemed to perceive that the DoL Inspectorate is effective, the mean score of 3.22 being > 3.00 .

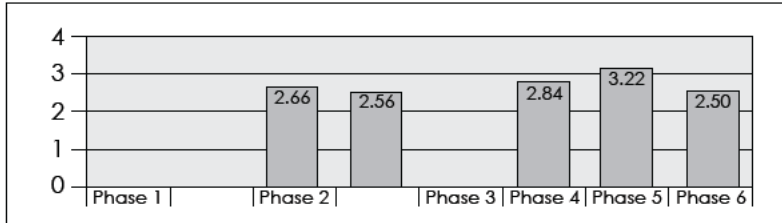


Figure 16: Effectiveness of the DoL Inspectorate in terms of assuring OH&S

4.2.15 Aspect 15

With the exception of the Inspectors' mean score of 3.68, all the mean scores ≤ 3.00 , which indicates that the DoL Inspectorate can be deemed to be insignificant rather than significant in terms of accident prevention in construction.

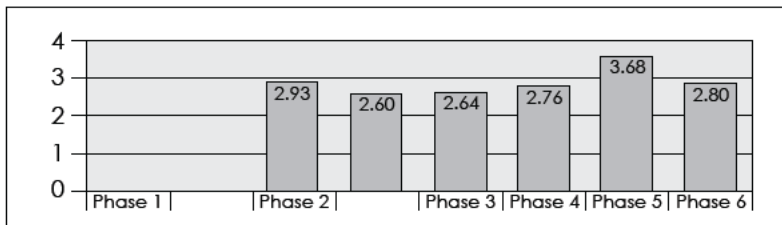


Figure 17: Significance of the DoL Inspectorate relative to accident prevention in construction

5. Conclusion

Based upon the findings of the study it can be concluded that there is a distinct need for a change in the approach of and methodology adopted by the South African DoL Inspectorate relative to OH&S in construction. Based on the survey of the literature and the empirical findings, it generally appears that the South African DoL Inspectorate is not effective in conducting their duties. However, contractors, clients, designers and various other relevant stakeholders have a particularly important role to play in eliminating and reducing hazards and risks.

The salient specific findings are: the DoL Inspectorate is not effective in terms of executing their duties; the number of inspections / 'blitz' inspections conducted by the DoL Inspectorate is inadequate; the number of inspections/ 'blitz' inspections conducted by the DoL

Inspectorate is infrequent; the DoL Inspectorate is not effective in terms of identifying the root cause of fatalities; the DoL Inspectorate is not effective in terms of addressing issues during inspections; the DoL Inspectorate is not fulfilling its role of reducing the consistently high fatality and injury rate; the DoL Inspectorate is not effective as a means of assuring OH&S; the DoL Inspectorate is not effective relative to accident prevention in construction; the DoL Inspectorate does not assess legislation relative to best practice in construction; there is a need for an OH&S accreditation system, and there is a need for an OH&S Inspectorate incentive scheme.

Various OH&S activities account for a significant proportion of fatal and major injuries. However, it appears that inspection of these activities is not being conducted by competent inspectors knowledgeable of the construction industry and its activities.

OH&S performance is increasingly prominent on the agendas of many organisations. Several powerful factors contribute towards this trend. The construction industry does not have a good OH&S record and faces tough legal and financial penalties for breaches of the law. A positive change of attitude among all players in the construction industry is vital. What is needed is to embed these vital factors as morals and values and as part of all that the construction industry does, and not to regard them merely as optional extras where time allows. The quote attributable to Hinze (1997) "Working on a project without establishing a strong safety culture is like holding a dead man's hand" provides a suitable closure to this topic.

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