



Article

Regulatory Organisation, Enforcement, and Uptake of Occupational Health Programmes in South Africa: A Qualitative Analysis of Health Regulations and Company Reports

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Abstract

The Occupational Health and Safety Act 1993 and its attendant regulations in South Africa require industries to implement occupational health programmes informed by corresponding occupational health (OH) hazards. The programmes are only inferred and, in certain instances, non-prescriptive, leaving employers with the discretionary latitude to adopt and adapt preferred model programmes. On the other hand, the cited act and the health regulations are enforced using a combination of both prescriptive and performance-based regulatory approaches. Amidst implemented OH programmes and regulatory inspection and enforcement, occupational disease prevalence in the South African industry persists. This study identified the regulatory organisation, enforcement, and reporting practices of occupational health programmes in South Africa. This qualitative study analysed seven health-related regulations of the Occupational Health and Safety Act 1993 in South Africa, and 114 company reports (51 sustainability and 63 integrated reports). The frequency of conducting OH programme aspects was clearly prescribed and enforced through the prescriptive regulatory framework. Training, personnel, and risk assessment methods were the most ambiguously regulated programme aspects, and their enforcement varies between prescriptive and performance-based regulatory frameworks. Ninety-nine companies reported implementation of generic occupational health and safety programmes, with twenty-one reporting specific OH programme implementation. The current state of affairs complicates both employer compliance obligations and regulator enforcement efforts. The situation is compounded by an absence of model programmes in some instances and requires policy reforms.

Keywords: ESG reporting; mandatory regulation; prescriptive regulation; performance-based regulation; occupational disease; occupational hygiene; South Africa; regulatory ambiguity



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1. Introduction

The industrial revolution brought advancements in machinery and manufacturing processes, which were and are still used for mass production of goods in factories. The use of machinery in industry resulted in hazardous or unsafe work conditions [1], which created occupational health hazards directly affecting workers [2]. The unsafe work conditions manifested themselves in observed occupational diseases (ODs) such as phosphy jaw, noise-induced hearing loss, amongst others. According to the United Nations' Human Rights Commission 2018 special report, workers still face challenges due to inadequate protection standards, slow progress in exposure prevention, fragmented occupational and

environmental health strategies, and gaps in exposure monitoring and enforcement [3]. With human development, occupational hazards are no longer limited to factories and mines but are also found in office buildings [4]. The manufacturing and utilities sectors are important as their products are used for daily human sustenance as well as supporting national economies [5,6]. As an example, chemicals from the manufacturing sector are applied for disease prevention and control, and for increasing yields in agriculture [7], allowing a scope for their existence despite their inherent hazards [8]. Both sectors are also a major source of employment throughout the world [9]. In addition to these noted benefits, workers in these sectors are exposed to inherent process occupational health hazards [9]. Exposure to the occupational health hazards is regulated through a combination of occupational health and environmental protection, transport, and management regulations [10]. The increasing growth of these sectors requires the assessment and management of health risks related to exposure [7].

1.1. Legal Basis of Occupational Health and Occupational Health Programmes

Occupational health is an assigned responsibility of employers arising from occupational health and safety (OHS) legislation, with the aim of protecting employees' physical and mental health related to work. However, a risk assessment of the work environment forms the basis for occupational health (OH), and its outcomes guide employers on the actions required to maintain worker health [11]. In South Africa, occupational health is legally defined, and "includes occupational medicine, occupational hygiene and biological monitoring" [12]. According to the Occupational Health and Safety Act, 1993 [12], Occupational medicine "means the prevention, diagnosis, and treatment of illness, injury, and adverse health effects associated with a particular type of work". Occupational hygiene, on the other hand, "means the anticipation, recognition, evaluation and control of conditions arising in or from the workplace, which may cause illness or adverse health effects to persons" [12]. This implies that OH is executed by a multidisciplinary team inclusive of occupational medical practitioners, occupational health nurses (occupational medicine and biological monitoring), and occupational hygienists (occupational hygiene) [13]. The outputs of the cited professions are interdependent and contribute to the success of OH programmes in achieving the ultimate goal of minimising occupational disease (OD) incidence. In the South African general industry, however, the Occupational Health and Safety Act 1993 and some of its attendant health regulations remain ambiguous on what constitutes a compliant OH programme [12,14–19]. Employers then self-regulate in establishing applicable OH programmes based on their specific type of operations and activities. This leads to inter- and intra-company programme variations, though often expected in view of the existence of different OH hazard types. Some of these programmes may potentially omit vital aspects necessary for informed decision-making and interventions. This complicates legal interpretation during inspection and enforcement, which is an exclusive mandate of the Department of Employment and Labour Inspectorate [12].

In some companies, OH programmes are incorporated into broader programmes that include the safety aspects. Balderson [20] defines safety as "the application of hazard control through the workplace, person, and system by integrating into the organization sustained actions, accountability, and reducing risk to as low as reasonably practicable to mitigate potential injury".

Currently, the South African labour inspectorate uses a combination of the prescriptive (mandatory regulation) and performance-based (self-regulation) regulatory regimes. The inspectorate uses a prescriptive regulatory approach to set technical and procedural requirements for industry compliance, with its role limited to enforcement activities. In a performance-based regulatory approach, the regulated industry is afforded flexibility in

using technical and procedural measures for the treatment of identified workplace hazards. Both regulatory approaches have distinct features, and neither is better than the other [21]. Self-regulation results in the regulated industry internalising responsibility and accountability for OHS compliance, whilst also relying on internally employed skilled professionals to set standards, identify risks, and use technology for hazard control and non-compliance policing [21–23].

Comparably, the prescriptive approach is desirable for workplace hazard control, where technical compliance standards are set [21], a scenario currently applicable in South Africa.

Apart from selecting an appropriate regulatory regime, the labour inspectorate should be well capacitated to position itself to play a credible role in advising employers, employees, and industry alike on compliance matters. The effectiveness of the labour inspectorate, in turn, relies on unambiguous laws that offer guidance to employers on required actions, their enforcement, and possible sanctions [24].

Previous studies [25–27] conducted on the topic, compared regional legislative frameworks amongst Southern African Development Community countries in broad terms. This current study focuses on the specific and practical OH programme aspects drawn from South African OHS legislative provisions, including the enforcement framework. This study also included company self-reports on the practice and uptake of OH programmes, a novelty.

1.2. Regulatory Enforcement and Compliance Theories

Given the regulatory ambiguity described in Section 1.1, we examine the regulatory enforcement and compliance theories applicable to both the labour inspectorate and companies. The Occupational Health and Safety Act 1993 and its associated Regulations in South Africa outline both the compliance requirements for employers and the administrative sanctions that arise from noncompliance resulting from regulatory enforcement. The administrative sanctions can be classified as improvement, prohibition, and infringement notices [12,28]. These sanctions affirm the legal obligation imposed on the regulated personalities to “do something” about prevailing OH risks [12]. Similarly to the Australian “enforceable undertakings” approach [28], employers and employees in South Africa can thus be prosecuted for the violation of OHS laws. Various theories are applicable within the context of compliance and enforcement, and are helpful in understanding, relating to, and explaining current conditions [29]. The deterrence theory, socio-economic theory, personality theory, and corporate legal compliance theory have relevance in South Africa and are explored in this study.

Regulation is the prerogative of the state intended to regulate humans, including behaviour and social interactions. The state uses regulation to maintain societal order and to prevent disintegration and impunity [30]. From an OHS perspective, regulation is specifically intended for the protection of worker health and safety [12,31]. The structure of the health regulations in South Africa is closely linked to the deterrence theory of law enforcement, where the regulated industry fully implements legislative provisions to avoid sanctions for any omissions related to prevailing risks [32]. The sanctions are outlined in Section 47 of the Occupational Health and Safety Act 1993, and various sub-regulations of the cited health regulations outline such sanctions [12,15–19]. Regulators use legislation as a deterrent tool for preventing noncompliance, and when effectively conducted, it should improve compliance levels. The deterrence theory of law enforcement has, however, been critiqued in that the regulated industry must be knowledgeable about the cited laws and be able to determine through a cost–benefit analysis model that the cost of violations exceeds the benefit. The outcomes of the cost–benefit analysis should

be the main influential tool relating to omissions that lead to offences. Another critique relates to the internalisation of societal norms and values as an influential factor informing compliance [32]. The deterrence theory further postulates that factors such as certainty and the enormity of penalties are key in determining compliance [33]. Apart from the deterrence theory, Sutinen and Kuperan [33] have proposed the socio-economic theory of regulatory compliance, which expands on the deterrence theory to include moral obligation, social influence, and cost–benefit analysis as key considerations. The socio-economic theory of regulatory compliance aligns with the prevailing socio-economic discourse in South Africa, whereby the government has to balance between economic development and the adverse health impacts associated with certain regulations.

Legal Compliance Theories

Due to the impracticability of continuous onsite regulatory enforcement, conditions allow for industry to self-regulate and enter into voluntary compliance management programmes, such as implementing OHS management systems, such as the ISO 45001 [34], to provide internal compliance assurance and mitigate against criminal liability. South African companies such as Oceana Group [35], Metair Investment Limited [36], Quantum Foods [37], and Murray and Roberts [38], amongst others, report in publicly available reports of implementing the OHS management system as a case in point. However, voluntary compliance management programmes should be coupled with changes in behaviour towards compliance to prevent self-regulation being viewed as attempts to merely improve corporate image and the evasion of regulatory oversight [39].

There exists a non-exhaustive list of theories that attempt to explain corporate legal compliance. The personality theory is prominent and central to the subject of corporate legal compliance, highlighting the intertwined relationship between personality and corporate legal compliance. The corporate legal compliance theory, underpinned by its dependency on personality theory, relates compliance within companies as being dependent on the person rather than the company, wherein the person makes decisions about actions required for compliance. The personality theory relates that a company only exists in the legal sense and not in the natural sense [39]. Within the OHS context, employers and employees, to a certain degree, are the ultimate authorities responsible for compliance at work [12]. The personality theory also emphasises the ownership of accountability to a person, who is responsible for the establishment and implementation of regulated workplace programmes [39]. In the South African context, employers and employees have been assigned specific duties in terms of Sections 8 (employers) and 14 (employees) in the Occupational Health and Safety Act 1993, as well as the attending health regulations [12,14–19,40]. The status of compliance with these legislative instruments reflects the personal decisions of these cited persons. Within the context of the corporate legal compliance theory, companies should then recruit and employ competent people who will be responsible for the administration, interpretation, and implementation of the cited regulations to secure legal compliance [39].

1.3. Organisation of Occupational Health Programmes

In spite of the existence of regulatory arrangements for OH programme implementation and enforcement, interpretive challenges remain in their organisational arrangements. There remains no universal model OH programme, in recognition of the vast variances in industrial operations, activities, and hazard types [41]. However, there are examples of existing OH programmes, such as hearing conservation programmes, radiation protection programmes, and code of practice on occupational health programmes for heat stress, which correspond to specific health hazards. In the United States, the American College of Occupational and Environmental Medicine (ACOEM) [41] outlines the scope

of OH programmes to include 12 aspects, including medical surveillance, education of employees, “instruction on methods of prevention and on recognition of possible adverse health effects, amongst others.” In South Africa, the OH programme aspects in the health-related regulations, though not specifically stated, incorporate training, risk assessment, medical surveillance, exposure monitoring, and exposure control. These programmes apply to both employers and self-employed persons whose activities expose employees to health hazards [15,16,19].

Apart from full-time OH programme implementation, hazard control can, however, be achieved by performing preplanning and situation analysis prior to erecting new processing facilities [42]. Residual health risks are then managed through applicable OH programmes [43]. However, there remains limited public information on the efficacy of OH hazard control strategies in practice. Elimination, substitution, and engineering controls remain the most preferred control options compared to long-term OH programme implementation [44]. However, some companies do not implement OH programmes in isolation but as part of broader OHS programmes. Balderson defines safety as “the application of hazard control through the workplace, person, and system by integrating into the organization sustained actions, accountability, and reducing risk to as low as reasonably practicable to mitigate potential injury”.

1.4. Overview of Occupational Disease Incidence in South Africa

Given that the health regulations are organised to include OH programmes, we briefly review publicly available occupational disease statistics to provide a synopsis of the extent of programme performance in South Africa. Effective OH programmes result in the improvement of employee health, morale, and productivity [45]. In South Africa, OD statistics (Figure 1) reported to the Compensation Commission (Figure 1), though few, also point to deficient programmes. These ODs may be an outcome of a combination of factors including the inadequacy of the cited legislation and fragmented OH policies amongst others [3].

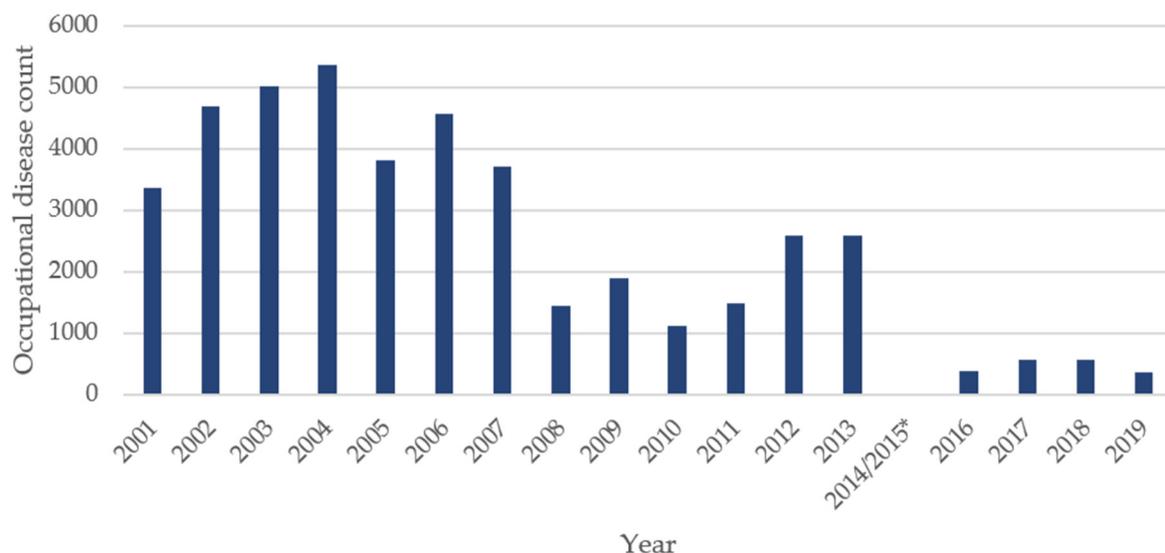


Figure 1. Total occupational diseases in South Africa [46,47]. * No publicly available data.

The OD statistics in Figure 1 exclude undocumented cases from the large informal sector in South Africa, where OHS services and regulation are often lacking [48,49]. When interpreting the data in Figure 1, it is also important to consider the potential for under-reporting, the extent of which is still unknown in South Africa. The OD incidence is an

indicator of prevailing occupational health hazards and risk factors at work [50]. Workplaces with a high proportion of blue-collar workers tend to have a high likelihood of illness due to close proximity to hazards and exposure levels [51].

This study asks: (i) how do South African health regulations specify OH programme components? (ii) How consistently do Johannesburg Stock Exchange (JSE)-listed companies report OH programme uptake in sustainability reports? This will provide a country perspective on the possible regulatory gaps plaguing industry OH programmes in view of the reported OD incidence in Figure 1.

2. Materials and Methods

2.1. Health Regulations and Occupational Health Programme Aspect Identification

The Health Regulations, retrieved from <https://www.gov.za/documents/acts> (accessed on 5 November 2025), in the Occupational Health and Safety Act include the Ergonomics Regulations, 2021; Environmental Regulations for Workplaces, 1987; Hazardous Biological Agents Regulations, 2002; Hazardous Chemical Agent Regulations, 2021; Lead Regulations, 2002; Asbestos Abatement Regulations, 2020; and the Noise-Induced Hearing Loss Regulations, 2003. The Minister of Employment and Labour, through the advice of the Advisory Council on Occupational Health and Safety, is the highest authority creating regulations in South Africa as per Sections 43 and 44 of the Occupational Health and Safety Act, 1993. The occupational safety-related regulations in the Occupational Health and Safety Act 1993 and the Mine Health and Safety Act 1996 were excluded from the analysis. Other health regulations, viz. Facilities Regulations, Diving Regulations, and the Driven Machinery Regulations were also excluded from the study as they do not specify OH programmes administered by OHS professionals.

The qualitative data on the OH programme aspects and the corresponding regulatory framework were extracted directly from the regulations and input into thematic tables (Tables 1–5).

Table 1. Occupational health programme aspects in South Africa.

Health Regulation	Aspect	Training	Occupational Hygiene			Occupational Medicine	
			Risk Assessment	Monitoring	Control	Health Evaluations ¹	Biological Monitoring
Noise Induced hearing loss Regulations, 2003	Programme aspect	✓	✓	✓	✓	✓	N/A
	Frequency	✓	✓	✓	✓	✓	N/A
	Method	✗	✗	✓	✓	✓	N/A
	Personnel	✓	✗	✓	✓	✓	N/A
Regulations for Hazardous Chemical Agents, 2021	Programme aspect	✓	✓	✓	✓	✓	✓
	Frequency	✓	✓	✓	✓	✓	✓
	Method	✗	✗	✓	✓	✓	✓
	Personnel	✗	✗	✓	✓	✓	✓
Regulations for Hazardous Biological Agents, 2001	Programme aspect	✓	✓	✓	✓	✓	✓
	Frequency	✗	✓	✗	✓	✓	✓
	Method	✗	✗	✗	✓	✗	✓
	Personnel	✗	✗	✗	✓	✓	✓

Table 1. Cont.

Health Regulation	Aspect	Training	Occupational Hygiene			Occupational Medicine	
			Risk Assessment	Monitoring	Control	Health Evaluations ¹	Biological Monitoring
Lead Regulations, 2002	Programme aspect	✓	✓	✓	✓	✓	✓
	Frequency	✓	✓	✓	✓	✓	✓
	Method	✗	✗	✓	✓	✓	✓
	Personnel	✓	✗	✓	✓	✓	✓
Asbestos Abatement Regulations, 2020	Programme aspect	✓	✓	✓	✓	✓	N/A
	Frequency	✓	✓	✓	✓	✓	N/A
	Method	✓	✗	✓	✓	✗	N/A
	Personnel	✓	✓	✓	✓	✓	N/A
Ergonomics Regulations, 2021	Programme aspect	✓	✓	✓	✓	✓	N/A
	Frequency	✓	✓	✓	✗	✓	N/A
	Method	✗	✗	✗	✗	✓	N/A
	Personnel	✗	✗	✗	✓	✓	N/A
Environmental Regulations for Workplaces, 1987 (cold stress)	Programme aspect	✗	✗	✗	✓	✗	✗
	Frequency	✗	✗	✗	✗	✓	✗
	Method	✗	✗	✗	✗	✓	✗
	Personnel	✗	✗	✗	✓	✓	✗
Environmental Regulations for Workplaces, 1987 (heat stress)	Programme aspect	✗	✗	✗	✓	✗	✗
	Frequency	✗	✗	✗	✗	✓	✗
	Method	✗	✗	✗	✗	✓	✗
	Personnel	✗	✗	✗	✓	✓	✗

✓ prescribed; ✗ not prescribed; ¹ health evaluations include initial/baseline, periodic, exit, and diagnostic medical examinations, N/A Not applicable.

Table 2. Regulatory types for training programmes.

		Regulation Type		
		Prescriptive	Performance-Based	
Noise Induced hearing loss Regulations, 2003				
Programme aspect	Noise training programme		✓	-
Frequency	<ul style="list-style-type: none"> ■ Prior to commencement of work ■ Yearly refresher training 		✓	-
Method	None			✓
Personnel	Competent person		✓	
Regulations for Hazardous Chemical Agents, 2021				
Programme aspect	Information, training, and instruction		✓	-
Frequency	<ul style="list-style-type: none"> ■ Before exposure ■ Intervals as recommended by the health and safety committee 		✓	-
Method	None		-	✓
Personnel	None		-	✓

Table 2. Cont.

		Regulation Type	
		Prescriptive	Performance-Based
Regulations for Hazardous Biological Agents, 2001			
Programme aspect	Information and training	✓	
Frequency	None	-	✓
Method	None	-	✓
Personnel	None	-	✓
Lead Regulations, 2002			
Programme aspect	Information and training	✓	-
Frequency	<ul style="list-style-type: none"> ■ Before the employee is exposed ■ Yearly refresher training 	✓	-
Method	None		✓
Personnel	Competent person	✓	-
Asbestos Abatement Regulations, 2020			
Programme aspect	Information, instruction, and training	✓	-
Frequency	<ul style="list-style-type: none"> ■ Induction training upon employment ■ When the inventory of asbestos in place is reviewed ■ Annual refresher training with a minimum contact duration of two hours 	✓	-
Method	Minimum contact duration of eight hours	✓	-
Personnel	Person deemed competent by the chief inspector	✓	-
Ergonomics Regulations, 2021			
Programme aspect	Ergonomic training programme	✓	-
Frequency	<ul style="list-style-type: none"> ■ Prior to placement ■ Variable refresher training 	✓	-
Method	None	-	✓
Personnel	None	-	✓
Environmental Regulations for Workplaces, 1987 (cold stress)			
Programme aspect	Thermal requirements	✓	-
Frequency	None	-	✓
Method	None	-	✓
Personnel	None	-	✓
Environmental Regulations for Workplaces, 1987 (heat stress)			
Programme aspect	Thermal requirements	✓	-
Frequency	None	-	✓
Method	None	-	✓
Personnel	None	-	✓

✓ Applicable.

Table 3. Regulatory types for risk assessments.

		Regulation Type		
		Prescriptive	Performance-Based	
Noise Induced hearing loss Regulations, 2003				
Programme aspect	Assessment of potential exposure		✓	-
Frequency	<ul style="list-style-type: none"> ■ 2-yearly ■ Forthwith (following specific changes) 		✓	-
Method	None		-	✓
Personnel	None		-	✓
Regulations for Hazardous Chemical Agents, 2021				
Programme aspect	Assessment		✓	-
Frequency	<ul style="list-style-type: none"> ■ Immediate ■ 2-yearly ■ Forthwith (following specific changes) 		✓	-
Method	None		-	✓
Personnel	None		-	✓
Regulations for Hazardous Biological Agents				
Programme aspect	Assessment of potential exposure		✓	-
Frequency	<ul style="list-style-type: none"> ■ 2-yearly ■ Forthwith (following specific changes) 		✓	-
Method	None		-	✓
Personnel	None		-	✓
Lead Regulations, 2002				
Programme aspect	Assessment of potential exposure		✓	-
Frequency	<ul style="list-style-type: none"> ■ 2-yearly ■ Forthwith (following specific changes) 		✓	-
Method	None		-	✓
Personnel	None		-	✓
Asbestos Abatement Regulations, 2020				
Programme aspect	<ul style="list-style-type: none"> ■ Identification of asbestos in place ■ Inventory of asbestos in place ■ Asbestos risk assessment ■ Asbestos management plan 		✓	-
Frequency	<ul style="list-style-type: none"> ■ Identification of asbestos in place—none ■ Inventory of asbestos in place—2-yearly ■ Asbestos risk assessment—2-yearly ■ Asbestos management plan—8-yearly 		✓	-
Method	None for all risk assessment types		-	✓
Personnel	competent person for all risk assessment types		✓	-
Ergonomics Regulations, 2021				
Programme aspect	Ergonomic risk assessment		✓	-
Frequency	<ul style="list-style-type: none"> ■ Before commencement of work ■ 2-yearly ■ Ongoing review 		✓	-
Method	None		-	✓
Personnel	Competent person		✓	-

Table 3. Cont.

		Regulation Type	
		Prescriptive	Performance-Based
Environmental Regulations for Workplaces, 1987 (cold stress)			
Programme aspect	Thermal requirements	-	✓
Frequency	None	-	✓
Method	None	-	✓
Personnel	None	-	✓
Environmental Regulations for Workplaces, 1987 (heat stress)			
Programme aspect	Thermal requirements	-	✓
Frequency	None	-	✓
Method	None	-	✓
Personnel	None	-	✓

✓ Applicable.

Table 4. Regulatory types for occupational hygiene monitoring programmes.

		Regulation Type	
		Prescriptive	Performance-Based
Noise Induced hearing loss Regulations, 2003			
Programme aspect	Noise measurement programme	✓	-
Frequency	2-yearly	✓	-
Method	SANS 10083 [52]	✓	-
Personnel	Approved noise inspection authority	✓	-
Regulations for Hazardous Chemical Agents, 2021			
Programme aspect	Measurement programme	✓	-
Frequency	2-yearly	✓	-
Method	Group measurement (OESSM), HSG 173	✓	-
Personnel	Approved inspection authority	✓	-
Regulations for Hazardous Biological Agents, 2001			
Programme aspect	Monitoring exposure at the workplace	✓	-
Frequency	None	-	✓
Method	None	-	✓
Personnel	None	-	✓
Lead Regulations, 2002			
Programme aspect	Lead measurement programme	✓	-
Frequency	Yearly	✓	-
Method	Group measurement OESSM, HSG 173	✓	-
Personnel	Approved lead inspection authority	✓	-

Table 4. Cont.

		Regulation Type	
		Prescriptive	Performance-Based
Asbestos Abatement Regulations, 2020			
Programme aspect	Air monitoring	✓	-
Frequency	Determined by the Approved Inspection Authority	✓	-
Method	HSG 248	✓	-
Personnel	Approved Inspection Authority	✓	-
Ergonomics Regulations, 2021			
Programme aspect	Risk control	✓	-
Frequency	Ongoing	✓	-
Method	None	-	✓
Personnel	None	-	✓
Environmental Regulations for Workplaces, 1987 (cold stress)			
Programme aspect	Thermal requirements	✓	-
Frequency	None (4-hourly monitoring)	✓	-
Method	None	-	✓
Personnel	None	-	✓
Environmental Regulations for Workplaces, 1987 (heat stress)			
Programme aspect	Thermal requirements	✓	-
Frequency	None (hourly monitoring)	✓	-
Method	None	-	✓
Personnel	None	-	✓

✓ Applicable; SANS—South African National Standard; HSG—Health and safety guideline; OESSM—Occupational exposure sampling strategy manual.

Table 5. Regulatory types for medical surveillance programmes.

		Regulation Type	
		Prescriptive	Performance-Based
Noise-Induced Hearing Loss Regulations, 2003			
Programme aspect	Medical surveillance system (Audiometric testing programme)	✓	-
Frequency	<ul style="list-style-type: none"> ■ Baseline audiogram (within 30 days of employment) (Instruction 171) ■ Periodic (yearly and biennial) ■ Exit audiograms (SANS 10083 [52]) 	✓	-
Method	<ul style="list-style-type: none"> ■ Baseline audiogram (within 30 days of employment) (Instruction 171) ■ Periodic (yearly and biennial) and exit audiograms (SANS 10083) 	✓	-
Personnel	<ul style="list-style-type: none"> ■ Competent person ■ Audiologist 	✓	-

Table 5. Cont.

		Regulation Type	
		Prescriptive	Performance-Based
Regulations for Hazardous Chemical Agents, 2021			
Programme aspect	Medical surveillance	✓	-
Frequency	<ul style="list-style-type: none"> ■ immediately before or within 14 days after a person commences employment ■ periodic examinations—2-yearly 	✓	-
Method	<ul style="list-style-type: none"> ■ initial health evaluation ■ evaluation of the employee’s medical and occupational history ■ physical examination 	✓	-
Personnel	<ul style="list-style-type: none"> ■ Occupational health practitioner ■ Occupational medicine practitioner 	✓	-
Regulations for Hazardous Biological Agents, 2001			
Programme aspect	Medical surveillance (Health evaluation)	✓	-
Frequency	Immediately before or within 14 days after the person commences work	✓	-
Method	None	✓	-
Personnel	<ul style="list-style-type: none"> ■ Occupational health practitioner ■ Occupational medicine practitioner 	✓	-
Lead Regulations, 2002			
Programme aspect	Medical surveillance	✓	-
Frequency	<ul style="list-style-type: none"> ■ Immediately before work is carried out ■ 3-monthly ■ 6-monthly 	✓	-
Method	<ul style="list-style-type: none"> ■ Initial medical examination ■ Biological monitoring ■ Clinical examinations and biological tests ■ Fitness of work (Annexure C and D) 	✓	-
Personnel	Occupational medicine practitioner	✓	-
Asbestos Abatement Regulations, 2020			
Programme aspect	Medical surveillance system	✓	
Frequency	<ul style="list-style-type: none"> ■ Initial health evaluation—before commencement of work ■ Periodic health evaluations—risk-based and medical fitness to work 	✓	
Method	None	✓	-
Personnel	Occupational medicine practitioner	✓	

Table 5. Cont.

		Regulation Type	
		Prescriptive	Performance-Based
Ergonomics Regulations, 2021			
Programme aspect		Medical surveillance	✓ -
Frequency	■	Initial health evaluation (new employees)—before commencement of work or within 30 days	✓ -
	■	Periodic health examination—2-yearly	✓ -
	■	Exit health examination—exit	✓ -
Method	■	Initial health evaluation (new employees)	✓ -
	■	Periodic health examination	✓ -
	■	Exit health examination	✓ -
Personnel	■	Occupational medicine practitioner	✓ -
	■	Occupational health practitioner	✓ -
Environmental Regulations for Workplaces, 1987 (cold stress)			
Programme aspect		Thermal requirements	✓ -
Frequency	■	Fitness of work—beforehand and then yearly	✓ -
	■	Acclimatisation—before work	✓ -
Method	■	Fitness of work	✓ -
	■	Acclimatisation	✓ -
Personnel	■	Registered medical practitioner	✓ -
	■	Registered nurse	✓ -
Environmental Regulations for Workplaces, 1987 (heat stress)			
Programme aspect		Thermal requirements	✓ -
Frequency	■	Fitness of work—beforehand and then yearly	✓ -
	■	Acclimatisation—before work	✓ -
Method	■	Fitness of work	✓ -
	■	Acclimatisation	✓ -
Personnel	■	Registered medical practitioner	✓ -
	■	Registered nurse	✓ -

✓ Applicable; SANS—South African National Standard; HSG—Health and safety guideline; OESSM—Occupational exposure sampling strategy manual.

2.2. Identification and Selection of Companies, and Sustainability Report Search

The Listcorp website (<https://www.listcorp.com/jse/>) (accessed 30 October 2025) was used to identify Johannesburg Stock Exchange (JSE) sectors and specific companies for inclusion in the study. The listed N-shares of a company within each sector listing were excluded from the final search, as the holding company is the custodian of the operational performance of OHS aspects targeted in this study. The sectoral spread of the included companies included telecommunications ($n = 6$ companies), oil and gas ($n = 3$ companies), health care ($n = 7$ companies), consumer goods ($n = 20$ companies), consumer services ($n = 37$ companies excluding $n = 3$ companies with N-shares, namely eMedia holdings, Rex Trueform Group and African Overseas Enterprises), technology ($n = 13$ companies) and industrial ($n = 42$ companies). A total of 125 companies were considered for inclusion in the analysis. Figure 2 outlines the data collection and analysis strategy used. Two companies, one initially listing on the exchange during the course of 2024 and the other, which was under business rescue at the time of the review, were excluded from the study.

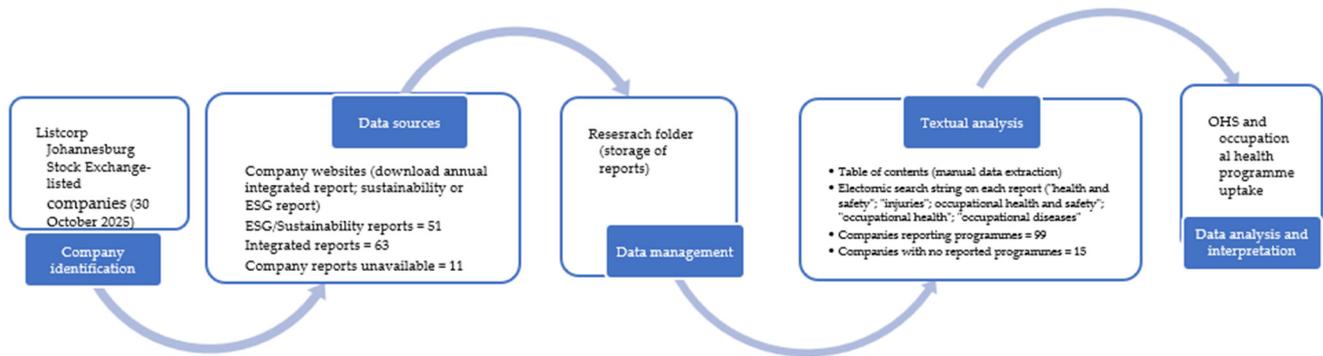


Figure 2. Data collection and analysis strategy used.

Each company's website was searched to retrieve and download the 2024 sustainability, Environmental, Social, and Governance (ESG), integrated annual report, or annual report, as applicable. According to the Health and Safety Executive [53], companies use these reports to communicate performance on the broad topic of sustainability. All downloaded reports were stored in a folder in PDF versions, under each company's name.

Inclusion and Exclusion Criteria

The mining (regulated through a different act) and financial sectors (similar OH scope, i.e., office-based OH hazards) were excluded from this current study. Companies that did not publish the 2024 annual reports by the cut-off date of 10 October 2025 were also excluded.

2.3. Data Extraction, Management, and Synthesis

The Primary Investigator, OR, conducted single-reviewer screening of the company reports to extract data targeted in this study. Throughout the screening, a clearly defined literature search and exclusion criteria were employed to help focus the study [54], Figure 2. The content page of each report was read to locate the relevant section narrating the OHS initiatives and performance data of the included companies. The narrative information on these sections and the quantitative data were reviewed to abstract the specific implemented OHS and OH programmes in line with programme aspects highlighted in Tables 1–5. Listed companies engaging in ESG/sustainability and integrated reporting are guided by disclosure frameworks such as the Global Reporting Initiative, JSE Sustainability, climate and disclosure guidelines, which require companies to outline how aspects such as OHS are managed.

Each reviewed ESG/sustainability and integrated report was subjected to two rounds of manual search, followed by a single electronic search intended to verify manually identified content. This minimised the exclusion of applicable information targeted in the study. The electronic search included terms inclusive of "health and safety"; "occupational health and safety"; "occupational health", "injuries", and "occupational diseases". No variation in the manual and electronic data extraction was observed.

The 2024 reports were targeted for inclusion in the study to reflect the current company practice on the OH programme [55] rather than programme efficacy.

The five-phase qualitative analysis process described by Bingham and Witkowsky [56] was used to extract data from the reports. The data was organised, sorted, understood, interpreted, and explained. In all included reports, the index of each report was read to locate sections where OHS aspects were reported. To ensure consistency and quality of the extracted data, an electronic word search within each report was also performed using the Boolean operators "occupational health and safety", "health and safety", and "occupational health programme".

Deductive analysis was employed to allocate the extracted qualitative data into applicable OH programme types [57] and were captured in a Microsoft Word table format.

2.4. Single-Reviewer Screening and Risk of Bias

The extraction of data from documents is an essential methodological step that informs evidence synthesis [58]. On this basis, the qualitative techniques used in this study were intended to give meaning and perspective [59] to ESG/sustainability reports, notwithstanding their perceived shortcomings. Single-reviewer screening, analysis, and result interpretation were conducted by a primary investigator, a registered occupational hygienist with extensive field experience on the subject matter. The single-reviewer strategy was induced by resource and time constraints, limitations associated with qualitative research [60]. Notwithstanding the methodological shortcomings associated with single-reviewer screening, this strategy was feasible due to the focused nature of the study questions [61]. To mitigate against these methodological challenges, the study employed a well-defined literature search procedure, a detailed research context, and inclusion and exclusion criteria [54,61] to enhance dependability [60]. The three-pronged report review steps verified the abstracted qualitative data, minimising the omission of applicable information. Similarly to any qualitative research, the inherent interpretive character of this current study is associated with inherent subjectivity [60] in aspects such as defining the OHS and OH programme aspects unless explicitly stated in the reviewed reports.

To enhance the trustworthiness of the research, the robust procedures described in Sections 2.1–2.3 were employed, and included a description of the purpose of the study, how the study was conducted, procedural decisions, data abstraction, and analysis [59]. Triangulation, reflexivity, extensive description of the data interpretation, and the use of verbatim quotations from the source documents were also used during the different stages of the study to demonstrate credibility [59,62].

3. Results

3.1. Occupational Health Programme Overview

In total, seven health regulations were evaluated. Thematic aspects, namely, programme aspect/specification, frequency, method, and personnel, were extracted from the health regulations (Table 1).

3.1.1. Programme Formalisation

Programmes specifically formulated by health regulations were training programmes (Noise-Induced Hearing Loss and Ergonomics Regulations), monitoring programmes (lead and Noise-Induced Hearing Loss Regulations), and medical surveillance programmes (Noise-Induced Hearing Loss and Asbestos Abatement Regulations) (Table 2). No specific OH programmes were formalised in the Regulations for Hazardous Chemical Agents, Hazardous Biological Agents, and Environmental Regulations for Workplaces.

3.1.2. Frequency of Programme Aspect

The frequency specification for training, risk assessment, monitoring, and health evaluations was clearly outlined across all enrolled regulations (Table 2). Anomalies were noted in the Asbestos Abatement Regulations, which specify an 8-yearly review of the asbestos management plan, as well as the Noise-Induced Hearing Loss Regulations, which prescribe periodic medical evaluations on a biennial basis for employees exposed to noise levels above 105 decibels (dBA). The Regulations for Hazardous Biological Agents prescribe a risk-based interval for periodic health evaluations, which can also include medical fitness

for work. The Noise-Induced Hearing Loss and Ergonomics Regulations also prescribe an exit medical evaluation.

The frequency for biological monitoring, an aspect of occupational medicine, only applies to the Regulations for Hazardous Biological Agents, Regulations for Hazardous Chemical Agents, and the Lead Regulations, which prescribe varying monitoring intervals. Biological monitoring is an important decision-making tool in both the Lead Regulations and the Regulations for Hazardous Biological Agents for determining the fitness for work of employees and the compliance status of the workplace.

3.1.3. Methods for Programme Aspect

Apart from the Noise-Induced Hearing Loss Regulations 2003, Asbestos Abatement Regulations 2022, the methods for carrying out medical surveillance and occupational hygiene monitoring remain generic across the health regulations (Table 2). Similarly, no training methods were specified across the health regulations except for the Asbestos Abatement Regulations, which prescribe that training should be held for a minimum duration of 8 h. The Lead Regulations 2002 and the Regulations for Hazardous Chemical Agents 2021 specify a reference sampling strategy for obtaining a representative number of samples. The method for conducting risk assessments across all health regulations also remains unspecified.

3.1.4. Personnel for Executing Programme Aspects

The personnel executing the occupational hygiene, occupational medicine, and biological monitoring aspects within OH programmes naturally differed. This confirms the multidisciplinary nature of OH in practice. A “competent person” is assigned the duty of conducting information, instruction, and training under the Noise-Induced Hearing Loss, Lead, and Ergonomics Regulations; however, none is specified in the Environmental Regulations for Workplaces, Regulations for Hazardous Biological Agents, and the Regulations for Hazardous Biological Agents (Table 2). The Department of Employment and Labour has published an explanatory note defining who is considered the “competent person” [63].

Audiologists, occupational medicine practitioners, and occupational health practitioners are assigned various medical surveillance and biological monitoring duties in line with the Noise-Induced Hearing Loss Regulations, Lead Regulations, Ergonomics Regulations, Regulations for Hazardous Chemical Agents, and the Regulations for Hazardous Biological Agents. Similarly, Approved Inspection Authorities for occupational hygiene are specifically assigned workplace monitoring duties in the Noise-Induced Hearing Loss Regulations, Lead Regulations, and the Regulations for Hazardous Chemical Agents. However, the personnel assigned to workplace monitoring duties remain unregulated in the Regulations for Hazardous Biological Agents and Environmental Regulations for Workplaces.

The specification of personnel for conducting risk assessment remains a prominent unregulated aspect within OH programmes, except in the Ergonomics Regulations, wherein only a “competent person” can conduct the assessment.

3.2. Occupational Health Programme Regulatory Framework

Tables 2–5 classify the OH programme aspects per applicable regulatory framework type. Comparably, training (Table 2) and risk assessments (Table 3) within OH programmes are predominantly governed through a self-regulatory approach. Specifically, industry self-regulates the method and personnel conducting risk assessments as prescribed in the Noise-Induced Hearing Loss Regulations, Lead Regulations, Regulations for Hazardous Biological Agents, the Regulations for Hazardous Chemical Agents, and the Environmental Regulations for Workplaces. The Asbestos Abatement and Ergonomics Regulations are

enforced through a prescriptive regulation type, by specifying the methods of assessment, monitoring, and the personnel conducting programme activities.

Occupational hygiene monitoring is enforced through prescriptive regulations in the Lead Regulations, the Regulations for Hazardous Chemical Agents, and the Asbestos Abatement Regulations (Table 4). Prescriptive regulation also applies to the method and personnel conducting occupational hygiene monitoring in both the Ergonomics Regulations and the Environmental Regulations for Workplaces 1987. In contrast to occupational hygiene monitoring, all aspects of medical surveillance (Table 5), including biological monitoring, are generally regulated through self-regulation.

3.3. Company Occupational Health Programme Uptake

A total of 51 ESG and/or sustainability (*) reports and 63 annual and/or integrated annual (°) reports were evaluated (Appendix A). Reports for 11 companies were not available. The extent of occupational safety and OH programme reporting by companies in various sectors is also shown in Figure 3 and expanded on in Appendix A Table A1 for each included company. A total of 99/125 (79%) case companies reported on generic occupational health and safety programme performance (Figure 3). Only 15/125 (12%) companies did not report OHS programme implementation in the reviewed reports, with 10/125 (8%) of such companies from the technology sector (Figure 4). None of the three companies in the oil and gas sector reported either the OHS or OH programme implementation.

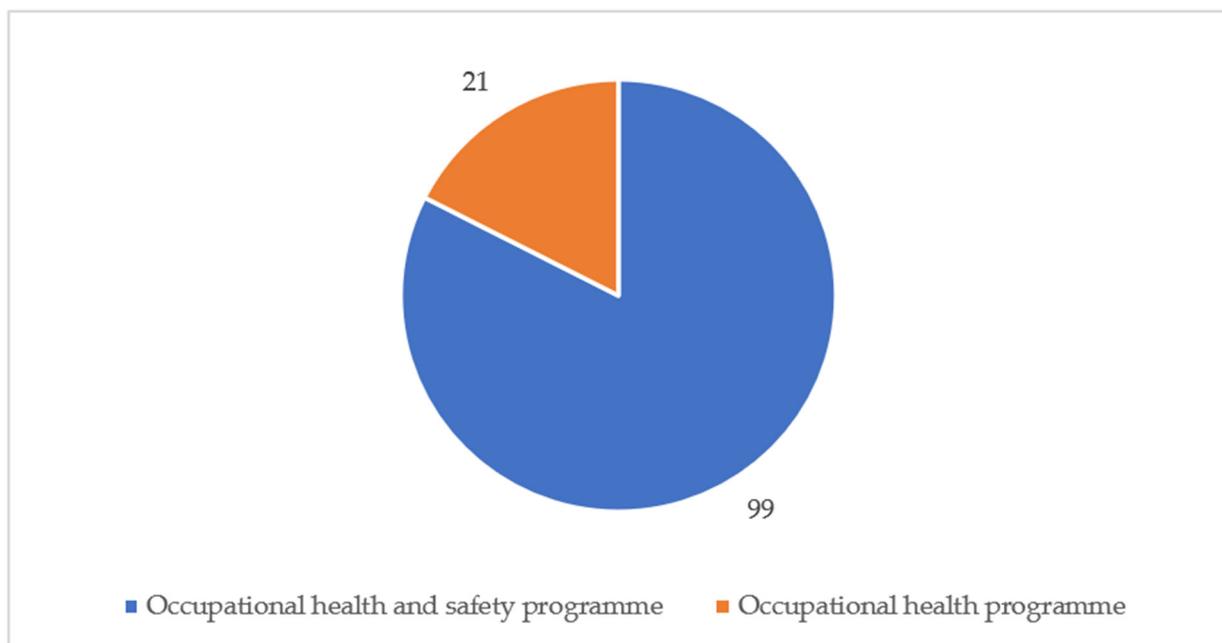


Figure 3. Number of companies reporting OHS and occupational health programmes.

Specific OH programme activities were reported by 21/125 (17%) companies from the 99 companies (Figure 4). The industrial sector had 8 (6.4%) companies that reported specific OH programmes compared to the telecommunications sector (2; 1.6%), consumer goods (6; 4.8%), consumer services (4; 3.2%), and the technology sector (1; 0.8%).

In total, the ergonomics and hazardous chemical agents' programmes were reported by 8 companies each, compared to 7 that reported on hearing conservation programmes (Figure 5). The consumer goods sector had 6 companies that reported specific OH programmes compared to 7 from the industrials and 2 from the telecommunications sectors. There were no occupational-related health conditions recorded in FY2024.

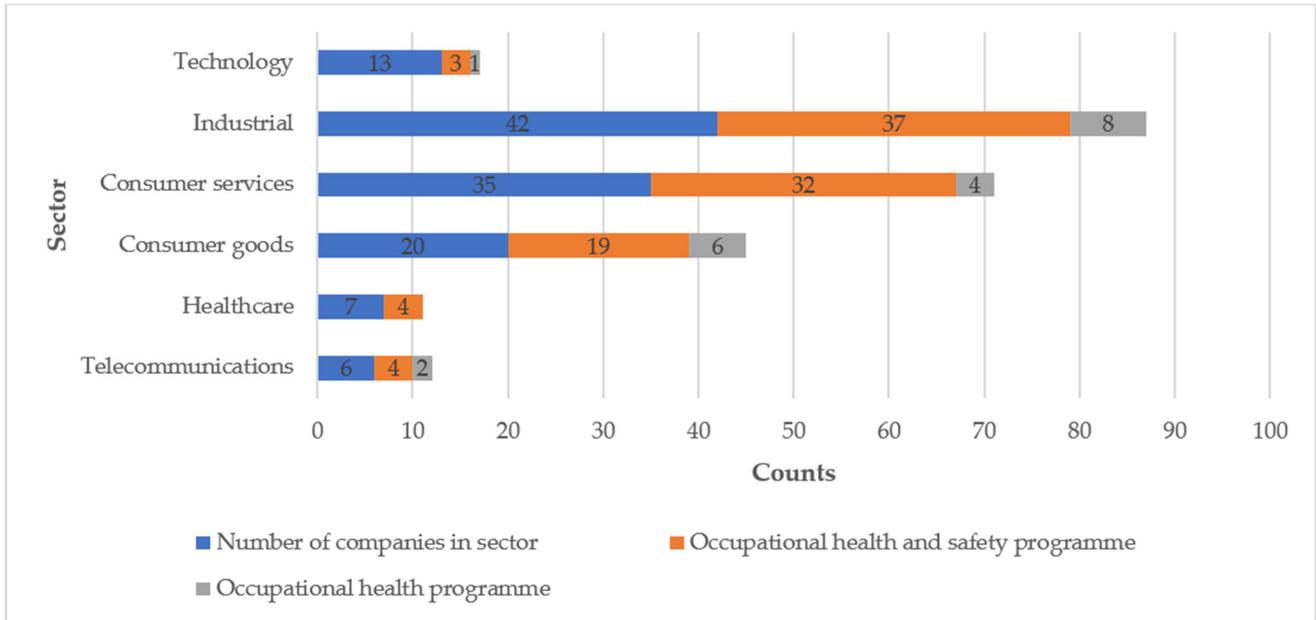


Figure 4. Company OHS and occupational health programmes uptake per sector.

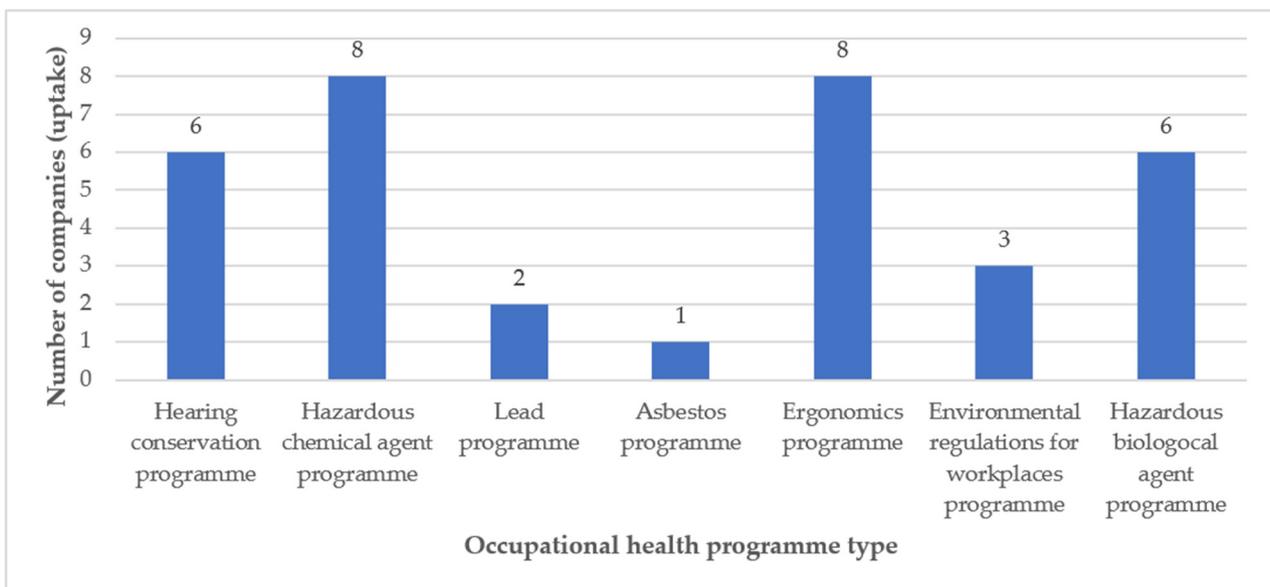


Figure 5. Occupational health programme uptake.

Murray and Roberts [38] implemented a health and wellness programme aimed “to prevent work- and non-work related illnesses and proactively manage various health conditions. The programme is geared to manage medium to high work-related health risks, including noise-induced hearing loss, exposure to airborne pollutants, ergonomics, fatigue and thermal stress, and communicable and non-communicable diseases. The health and wellness programme interventions include managing workplace health hazards, including providing clinical examinations, biological monitoring, and specific medical tests, and monitoring controls to prevent illness” [38].

Metair Investments Limited [36] reported an OH programme incorporating hazard identification and risk assessment (HIRA) processes, continuous employee training in safe work procedures, and safety awareness. The HIRA identified the primary substances of concern in the group as lead, acid, and hexavalent (VI) chromium at various operations. The programme ensures that women are excluded from working in lead areas at all opera-

tions. The OH programme also included the regular measurement of blood lead levels at operations that used lead [36].

The Quantum Foods [37] OH programme also included a HIRA, which identified risks, including exposure to high noise levels, dangerous equipment, slippery floors, musculoskeletal disorders, biological hazards, and hazardous chemicals used in refrigeration and disinfection. Within the programme, occupational hygiene surveillance programmes, including two-yearly surveys for occupational noise, illumination, general workplace ventilation, asbestos, grain dust, and ergonomics, as well as detailed ergonomics assessments, are conducted. “The Quantum Foods medical surveillance programme requires entry, periodic, and exit medicals for permanent employees in certain positions. It includes assessments for lung function, vision, audiometry, diabetes, hypertension, epilepsy, and testing for illicit drugs” [37].

Comparably, Oceana Group’s [35] OH programme needs to consider cross-border legislative requirements. In this regard, “employee well-being is also holistically considered, notably through on-site medical evaluations and a variety of health services. Mandatory induction training and role-specific refresher courses are also conducted. The group recorded zero work-related illnesses from exposure to occupational hazards in 2024 [35].

4. Discussion

This study identified the regulatory organisation, enforcement, and reporting practices of occupational health programmes in South Africa. The study reviewed the health regulations, company sustainability and/or ESG, and integrated annual reports.

4.1. Regulatory Organisation of Occupational Health Programmes

Occupational hygiene monitoring across the Noise-Induced Hearing Loss Regulations, Regulations for Hazardous Chemical Agents, Lead Regulations, and the Asbestos Abatement Regulations was clearly outlined, ensuring standardisation across industry. The benefit of standardised occupational hygiene monitoring modalities ensures traceability of results obtained from such monitoring and increases confidence in the compliance status of monitored workplaces. However, OH programme aspects relating to training, risk assessments, and biological monitoring, which were ambiguously outlined across all the evaluated health regulations, create interpretation tension for all affected stakeholders in that these aspects are neither restrictive nor permissive [30]. This regulatory ambiguity is likely to result in inter- and intra-company variances in the implementation of such programme aspects. This weakness is also likely to potentially hinder labour inspectors in using workplace inspections as an information-sharing event, which assists industry in achieving legal compliance [24]. This can also give credence to claims that enforcement can be perceived as unreasonable due to such regulatory vagueness, which undermines industry compliance with OHS regulation [23]. Furthermore, the regulated industry and employees often lack the technical and legal knowledge for interpreting complex and vague legislation [24]. However, the regulated industry can use the current situation to devise creative solutions to further minimise ODs through OH programmes [64].

Although these health regulations have not fully eliminated workplace hazards since enactment, amidst the cited regulatory vagueness in some aspects, their implementation by the regulated industry and enforcement by the Labour Inspectorate have reduced OD incidence to an extent [47,65]. As an example, the Oceana Group [35] has reported declining trends in OD incidence. This highlights the importance and the need for a strong labour inspection system in ensuring high levels of health and safety at work [66]. Policy makers should thus have a clear understanding of the drivers of compliance behaviour when establishing and designing compliance policies [33]. On this point, Liu [67] posits that the

effectiveness of legislation can be enhanced by outlining, in detail, all required compliance aspects. This can also assist in preventing legislation from becoming superficial and being reduced to a paper tiger.

4.2. Occupational Health Programme Regulatory Framework

The chosen regulatory framework for each programme aspect, whether by design or otherwise, influences variances in OH programme implementation, as highlighted in Appendix A Table A1. The cited health regulations contained OH programme aspects enforceable through a combination of both prescriptive and performance-based regulation types. In general, medical surveillance (including biological monitoring) had the most prescriptive aspects, whereas training, risk assessments, and occupational hygiene monitoring were enforced using a combination of both the prescriptive and self-regulatory approaches, in general. A report by the Department of Employment and Labour highlighted the fragmented nature of OHS legislation in South Africa [68], which can also be interpreted as the use of different regulatory enforcement systems. The impact of both the prescriptive and self-regulatory (performance-based) frameworks, based on the extent of OH programme implementation by the regulated industry, remains unknown in South Africa and represents a future research topic. However, the 21 companies that reported the specific implementation of OH programmes, and to some extent a portion of the 99 companies that reported generic OHS programmes, highlight the advantage of the prescriptive regulatory framework. Although the performance-based regulatory system ensures internalisation of accountability for compliance by industry, this should be complemented by setting higher moral compliance standards [22]. A self-regulatory-based regulation system should, however, also not be a substitute for state enforcement, as this has the potential to diminish the effectiveness of conducted inspections [66]. This can result from situations wherein sporadic enforcement is conducted by the Labour Inspectorate [69]. The Health and Safety Executive in the United Kingdom, which uses the performance-based regulation type, has reported a decreasing trend in OD incidence over the years. This strategy, however, was complemented by targeted enforcement and regulation through the development of sector strategies [70], a strategy that the South African Labour Inspectorate can explore. Further research is required to link the causal relation of OD incidence and the contribution of regulatory ambiguity. The importance of comprehensively written legislation ties with the justification of expended compliance costs, such as those required for OH programme aspects [68]. The regulatory vacuum created by non-prescriptive OH programme aspects has opened a business opportunity for professional associations and private individuals whose services inadvertently increase avoidable compliance costs for the regulated industry [64]. These professional services can prove costly for the industry as it requires the establishment of in-house, outsourced, or external and walk-in facility OH programme models [68]. In some instances, the non-prescriptive OH programme aspects may be ignored as unimportant by industry in the absence of regulatory guidance given by the Labour Inspectorate. Industry managers should, however, be cautioned against using self-regulation to promote noncompliance, which is a bad business practice [39].

The current enforcement framework of the health regulations in South Africa, in general, promotes the notion of “substantial regulatory compliance” rather than “full regulatory compliance” [71]. However, the regulatory ambiguity noted in this study renders the measurement of compliance by either the Labour Inspectorate or the regulated industry cumbersome. The measurement of regulatory compliance, from a regulatory compliance science perspective, employs nominal scales with the implication that “either a facility is in or out of compliance with specific rules” [71], which currently does not exist or has not been made public in South Africa, is a possible regulatory gap. This suggests that enforcement

of OH programme aspects is currently performed using inspector discretion, coupled with bargaining and non-enforcement [72]. The non-enforcement, in particular, might be related to the current socioeconomic considerations in the country [33]. Relatedly, Patrick and Jacquelynn [73], as an example, have argued that the OSHA regulatory framework in the United States “as a regime of permission of state–corporate crime”, as it allows industry to expose employees to the risk of ODs. Regardless of the regulatory system used, the future success of workplace health and safety relies on government, employer, and employee commitment [65]. This then calls for the enhancement and reform of legislation prescribing OH programmes [74].

4.3. Company OH Programme Implementation, Uptake and Reporting Practices

The basis for OHS reporting by the case companies, though varied, discloses the extent of implemented systems directed towards compliance with relevant regulatory and voluntary commitments [75,76]. The reporting also highlights the extent of industry attempts at corporate self-regulation [77]. The lesser reporting of the OH programme by the case companies compared to the OHS programmes was also noted by Koskela [78] in a study conducted on three Finnish companies. The preference of OHS reporting is historically tied to pressure exerted on companies by workers, shareholders, and governments who demand transparency on these aspects. The overreliance on OHS programme measurement by certain companies hides the true extent of OH programme implementation and practice in the industrial, consumer goods, and consumer services sectors. These sectors are known for the high prevalence of occupational health hazards and resultant exposure.

4.4. Recommendations

To assist the labour inspectorate and companies to improve OH programme implementation, performance, and enforcement, the following recommendations are proposed:

- (i) The regulatory authorities in South Africa should design an overarching model OH programme that defines the minimum programme components for each health regulation.
- (ii) Align the minimum monitoring frequencies for all OH programme activities to assist both the inspectorate and companies in order to improve internal efficiencies.
- (iii) The labour inspectorate should actively participate in the invited comments on the JSE Sustainability, Climate and Disclosure Guideline draft document to ensure that companies correctly and transparently report relevant matters on annual reports, sustainability, and/or ESG disclosures.
- (iv) Pilot-targeted inspector training and sector strategies to improve efficiencies.

This study had limitations. The OHS programmes reported by some companies that used lagging indicators as performance measures may have included OD incidence directly linked to an OH programme. This disambiguation limits the determination of the true extent of OH programme implementation by the case companies. The inferred OH programmes were interpreted through a single reviewer using expert knowledge and practical experience. The single-review screening approach employed in this study is a limitation (Section 2.4); however, the well-defined search and exclusion criteria enhance the dependability and transferability of the results. The study relied on information available from public reports and had no control over the reporting practices of companies. Furthermore, corporate reporting does not equal programme efficacy. On this point, future studies including multi-reviewer coding could address programme efficiency at the company level through surveys and site audits.

The results in this study are not transferable and generalisable to the South African mining industry due to the different legislative provisions used.

5. Conclusions

In conclusion, the mismatch of the regulatory framework and ambiguity (Tables 2–5) of certain OH programme aspects, such as those inferred in training programmes, risk assessments, and occupational hygiene monitoring, complicates compliance and regulatory enforcement. To align and increase the efficacy of health regulations and their impact, Section 4.4 proposes specific recommendations alluding to the need for a general overhaul of the budgetary provisions, staffing levels, prescriptive regulations, and sanctions. As stated by Patrick and Jacquelynn [73], employees continue suffering significant consequences at work, as political powers fail to implement the administrative changes required. This review lays the foundation for future field studies that will incorporate multi-reviewer coding to address programme efficiency at the company level through surveys and site audits. The proposed studies can also investigate the contribution of noted variances in the OH programme efficacy.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Research Ethics Committee of the Tshwane University of Technology (HREC2025=07=001 (SCI); 15 September 2025).

Informed Consent Statement: Not applicable.

Data Availability Statement: The list of the 125 JSE-listed companies included in this study can be downloaded at <https://www.listcorp.com/jse/> (accessed 30 October 2025 and verified on 10 November 2025). The original contributions presented in this study are included in the article. Further inquiries can be directed to the corresponding author.

Conflicts of Interest: The author declares no conflicts of interest.

Abbreviations

The following abbreviations are used in this manuscript:

OH	Occupational health
OHS	Occupational health and safety
ESG	Environment, Social, and Governance
SANS	South African National Standard
HSG	Health and Safety Guidance
OESSM	Occupational exposure sampling strategy manual
HIRA	Hazard identification and risk assessment
OSHA	Occupational Safety and Health Administration

Appendix A

Table A1. Overview of reported occupational health and safety, and occupational health programmes per company.

Company	Occupational Safety Programme	Occupational Health Programme	Specific OH Programme Reported						
			Hearing Conservation Programme	Hazardous Chemical Agents Programme	Lead Programme	Asbestos Programme	Ergonomics Programme	Environmental Regulations for Workplaces Programme	Hazardous Biological Agents Programme
Telecommunications									
Blue label Telecoms ^	✓	✓	-	-	-	-	-	-	-
Vodacom Group Limited *	✓	✓	-	-	-	-	-	-	-
Huge Group Limited	-	-	-	-	-	-	-	-	-
Telemasters Holdings Limited	-	-	-	-	-	-	-	-	-
Telkom SA Limited ^	✓	-	-	-	-	-	-	-	-
MTN Group Limited *	✓	-	-	-	-	-	-	-	-

Table A1. Cont.

Company	Occupational Safety Programme	Occupational Health Programme	Specific OH Programme Reported						
			Hearing Conservation Programme	Hazardous Chemical Agents Programme	Lead Programme	Asbestos Programme	Ergonomics Programme	Environmental Regulations for Workplaces Programme	Hazardous Biological Agents Programme
Healthcare									
Aspen Pharmacare Holdings Limited *	✓	-	-	-	-	-	✓	-	-
Adcock Ingram Holdings *	✓	-	-	-	-	-	-	-	-
Netcare Limited *	✓	-	-	✓	-	-	✓	-	-
Life Healthcare Group *	✓	-	-	-	-	-	-	-	-
Ascendis Health Limited	-	-	-	-	-	-	-	-	-
Afrocentric Investment Corp	-	-	-	-	-	-	-	-	-
Go Life International Ltd.	-	-	-	-	-	-	-	-	-
Consumer goods									
Compagnie Financiere Richemont SA ^	✓	✓	-	-	-	-	-	-	-
Anheuser-Busch Inbev ^	✓	-	-	-	-	-	-	-	-
British American Tobacco *	✓	-	-	-	-	-	-	-	-
Tiger brands Limited *	✓	✓	-	-	-	-	✓	-	-
Astral Foods Limited ^	✓	-	-	-	-	-	-	-	-
Premier Group Limited ^	✓	-	-	-	-	-	-	-	-
AVI Limited *	✓	-	-	-	-	-	-	-	-
Oceana Group Limited *	✓	✓	✓	✓	-	-	✓	-	✓
Nu-world Holdings Limited ^	✓	-	-	-	-	-	-	-	-
Crookes Brothers Limited ^	✓	-	-	-	-	-	-	-	-
Quantum Foods Holdings ^	✓	✓	✓	✓	✓	✓	✓	✓	✓
RFG Holdings Limited *	✓	-	-	-	-	-	-	-	-
Zeda Limited ^	✓	-	-	-	-	-	-	-	-
RCL Foods Limited *	✓	✓	✓	✓	-	-	✓	✓	-
Sea Harvest Group Limited *	✓	-	-	-	-	-	-	-	-
Metair Investments Limited ^	✓	✓	-	✓	✓	-	-	-	-
Libstar Holdings Limited ^	✓	-	-	-	-	-	-	-	-
Rainbow Chicken Limited ^	✓	-	-	-	-	-	-	-	-
Tongaat Hulett Limited	-	-	-	-	-	-	-	-	-
AH-Vest Limited *	✓	-	-	-	-	-	-	-	-
Consumer services									
Bid Corporation Limited *	✓	-	-	-	-	-	-	-	-
Clicks Group Limited *	✓	✓	-	-	-	-	-	-	-
Shoprite Holdings Limited *	✓	-	-	-	-	-	-	-	-
Mr Price Group *	✓	✓	-	-	-	-	-	-	-
Cashbuild Limited *	✓	-	-	-	-	-	-	-	-
Multichoice Group *	✓	-	-	-	-	-	-	-	-
The Foschini Group ^	✓	-	-	-	-	-	-	-	-
Motus Holdings Limited *	✓	-	-	-	-	-	-	-	-
Spar Group Limited *	✓	-	-	-	-	-	-	-	-
Lewis Group Limited *	✓	-	-	-	-	-	-	-	-
Truworths International Limited *	✓	-	-	-	-	-	-	-	-
Famous brands Limited ^	✓	-	-	-	-	-	-	-	-
Woolworths Holdings Limited *	✓	-	-	-	-	-	✓	-	-
Kaap Agri Limited	-	-	-	-	-	-	-	-	-
Sun International Limited *	✓	✓	✓	-	-	-	-	-	-
Africa Media Entertainment	-	-	-	-	-	-	-	-	-
Home Choice International plc ^	✓	-	-	-	-	-	-	-	-
ADvTECH Limited *	✓	✓	-	-	-	-	-	-	-
Spur Corporation Limited ^	✓	-	-	-	-	-	-	-	-
Combined Motor Holdings ^	✓	-	-	-	-	-	-	-	-
Dis-chem Pharmacies Limited ^	✓	-	-	-	-	-	-	-	-
Pick n Pay Stores Limited *	✓	-	-	-	-	-	-	-	-
Pepkor Holdings Limited *	✓	-	-	-	-	-	-	-	-
African and Overseas Entertainment ^	✓	-	-	-	-	-	-	-	-
Caxton and CTP Publishers and Printers Limited ^	✓	-	-	-	-	-	-	-	-
Rex Trueform Group ^	✓	-	-	-	-	-	-	-	-
Curro Holdings Limited ^	✓	-	-	-	-	-	-	-	-

Table A1. Cont.

Company	Occupational Safety Programme	Occupational Health Programme	Specific OH Programme Reported						
			Hearing Conservation Programme	Hazardous Chemical Agents Programme	Lead Programme	Asbestos Programme	Ergonomics Programme	Environmental Regulations for Workplaces Programme	Hazardous Biological Agents Programme
STADIO Holdings Limited ^	✓	-	-	-	-	-	-	-	-
Italtile Limited ^	✓	-	-	-	-	-	-	-	-
Tsogo Sun Gaming ^	✓	-	-	-	-	-	-	-	-
City Lodge Hotels Limited ^	✓	-	-	-	-	-	-	-	-
Hosken Passenger Logistics and Rail Limited	-	-	-	-	-	-	-	-	-
EMedia Holdings ^	✓	-	-	-	-	-	-	-	-
Choppies Enterprises Limited ^	✓	-	-	-	-	-	-	-	-
Nictus Limited ^	✓	-	-	-	-	-	-	-	-
Industrials									
Nampak Limited *	✓	-	-	-	-	-	-	-	-
Bidvest Group *	✓	-	-	-	-	-	-	-	-
Hudaco Industries Limited ^	✓	✓	-	-	-	-	-	-	-
Wilson Bayly Holmes-Ovcon Limited *	✓	-	-	-	-	-	-	-	-
Barloworld Limited *	✓	-	-	-	-	-	-	-	-
Net 1 UEPS Technologies Inc	-	-	-	-	-	-	-	-	-
Reunert Limited ^	✓	✓	-	-	-	-	-	-	✓
Raubex Group Limited *	✓	-	-	-	-	-	-	-	-
Afrimat Limited *	✓	✓	-	-	-	-	-	-	✓
Bell Equipment Limited *	✓	-	-	-	-	-	-	-	-
Invicta Holdings Limited ^	✓	-	-	-	-	-	-	-	-
Transpaco Limited ^	✓	-	-	-	-	-	-	-	-
Argent Industrial Limited ^	✓	-	-	-	-	-	-	-	-
Marshall Monteagle PLC	-	-	-	-	-	-	-	-	-
Mpact Limited *	✓	-	-	-	-	-	-	-	-
CA Sales Holdings Limited ^	✓	-	-	-	-	-	-	-	-
Master Drilling Group Limited ^	✓	-	-	-	-	-	-	-	-
Grindrod Limited ^	✓	-	-	-	-	-	-	-	-
Super Group Limited ^	✓	-	-	-	-	-	-	-	-
Bowler Metcalf Limited ^	✓	-	-	-	-	-	-	-	-
Santova Limited *	✓	-	-	-	-	-	-	-	-
Novus Holdings Limited *	✓	-	-	-	-	-	-	-	-
Adcorp Holdings Limited ^	✓	-	-	-	-	-	-	-	-
PPC Limited *	✓	✓	-	✓	-	-	-	-	-
Calgro M3 Holdings Limited *	✓	-	-	-	-	-	-	-	-
Aveng Group Limited *	✓	-	-	-	-	-	-	-	-
Stefanutti Stocks Holdings Limited *	✓	✓	✓	-	-	-	-	-	✓
EnX Group Limited ^	✓	-	-	-	-	-	-	-	-
CAFCA Limited ^	✓	-	-	-	-	-	-	-	-
Metrofile Holdings Limited ^	✓	-	-	-	-	-	-	-	-
Primeserv Group Limited ^	✓	-	-	-	-	-	-	-	-
Trellidor Holdings Limited ^	✓	-	-	-	-	-	-	-	-
KAP Limited ^	✓	✓	-	-	-	-	-	-	-
Sephaku Holdings Limited ^	✓	-	-	-	-	-	-	-	-
South Ocean Holdings ^	✓	-	✓	-	-	-	-	-	-
Murray and Roberts Holdings Limited *	✓	✓	✓	✓	-	-	✓	✓	✓
Brikor Limited *	✓	✓	-	✓	-	-	-	-	-
PSV Holdings Limited	-	-	-	-	-	-	-	-	-
Labat Africa Limited ^	✓	-	-	-	-	-	-	-	-
Mine restoration Investments Limited	-	-	-	-	-	-	-	-	-
Trencor Limited *	✓	-	-	-	-	-	-	-	-
Oil and gas									
Regergen Limited	-	-	-	-	-	-	-	-	-
Oando PLC	-	-	-	-	-	-	-	-	-
Efori Energy Limited	-	-	-	-	-	-	-	-	-

Table A1. Cont.

Company	Occupational Safety Programme	Occupational Health Programme	Specific OH Programme Reported						
			Hearing Conservation Programme	Hazardous Chemical Agents Programme	Lead Programme	Asbestos Programme	Ergonomics Programme	Environmental Regulations for Workplaces Programme	Hazardous Biological Agents Programme
Technology									
Prosus N.V. *	-	-	-	-	-	-	-	-	
Naspers Limited *	-	-	-	-	-	-	-	-	
Karooooo Ltd. ^	-	-	-	-	-	-	-	-	
Bytes Technology Group ^	-	-	-	-	-	-	-	-	
We Buy Cars Holdings Limited ^	-	-	-	-	-	-	-	-	
Datatec Limited ^	-	-	-	-	-	-	-	-	
Allied Electronics Corporation ^	✓	-	-	-	-	-	-	-	
Mustek Limited *	✓	✓	-	-	-	-	-	-	
PBT Group Limited ^	-	-	-	-	-	-	-	-	
ISA Holdings Limited ^	-	-	-	-	-	-	-	-	
Sebata Holdings Limited ^	-	-	-	-	-	-	-	-	
Capital Appreciation Limited ^	-	-	-	-	-	-	-	-	
EOH Holdings *	✓	-	-	-	-	-	-	-	

^ Annual/integrated annual report; * ESG/sustainability report; ✓ Programme implemented.

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