



## Rethinking Construction Health and Safety Legislation Compliance: Lessons Learnt from COVID-19 – Pilot Study

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### ABSTRACT

Despite numerous attempts to enforce construction health and safety legislation, low levels of compliance with health and safety requirements and high rates of accidents continue to exist in the construction industry. The far-reaching impact of the novel coronavirus has spawned the attention of international and national regulatory bodies and has led to the promulgation of emergency legislations both temporary and permanent. This study aims to identify lessons learnt from the COVID-19 pandemic to rethink the significance of health and safety legislation. The study further identifies how these changes have improved the overall safety landscape on construction sites. A quantitative method of data collection was adopted, and data were analysed using IBM Statistical Package for Social Sciences (SPSS) version 25. Descriptive and inferential statistics were used to analyse the data collected. The sample size for the study was 21 contractors in the region of Kwa-Zulu Natal province in South Africa. This is a pilot study which forms part of an ongoing empirical research. The study reveal that construction companies are conducting COVID-19 risk and mitigation plans, detailing the implementation plans for the safe re-activation of construction sites and the industry. It is incontestable that the pandemic has succeeded in probing the alertness, readiness and commitment of construction stakeholders as they are obliged to protect, respect and fulfil the rights to health of their workers. Although there are challenges regarding the susceptibility of the industry to the consequences of COVID-19 such as contractual obligations, additional provisions, pricing strategies and supply chain changes; the rapid response to the pandemic by construction stakeholders is unprecedented and commendable. It is hoped that after the pandemic, contractors will maintain the level of commitment and compliance with health and safety legislation in pursuing the full realisation of the health and safety of their workers as a do or die situation.

**Keywords:** COVID-19, Compliance, Construction, Health and Safety, Legislation

### INTRODUCTION

The global construction industry is a sector where safety has reached a plateau that still accounts for many accidents, lost working days, and a high fatality injury rate (Health and Safety Executive (HSE), 2019). The fatality rate in South Africa is estimated at 25.5 per 100,000 workers (Construction Industry Development Board (CIDB), 2009). Construction accidents and injuries can be prevented through the development of health and safety legislation (Adeyemo and



Smallwood, 2017). The primary objective of occupational health and safety legislation is to prevent accidents and improve workers wellbeing through effective implementation of proper legislation (CIDB, 2009). The South African construction industry has less than 50% rate of compliance with health and safety requirements with unacceptably high rates of incidents because of poor safety culture (CIDB, 2016).

Despite government and trade union efforts, accidents continue to occur on construction sites due to contractors' lack of adherence to safety (International Labour Organisation (ILO) (2011)). Predominantly, more emphasis has been placed on safety than health when dealing with construction health and safety matters (Raliile and Haupt, 2019). Little to no coherence between compliance and the impact of legislation is seen, as contractors are not implementing all aspects of construction health and safety legislation to improve the health of workers (ibid). Primarily, contractors comply with legislation to satisfy the requirements of the Department of Labour or Department of Public Works (ibid).

The Covid-19 pandemic has presented numerous challenges to the construction industry such as delays; site closures or restrictions; labour issues because of exposure to the virus, illness, and quarantine; new health and safety protocols such as on-site screenings; supply chain issues and subcontractor issues (Giles et al., 2021). In construction, safety considerations pre-Covid-19 were mostly focused on serious incidents (Horsnail and Williams, 2020). However, in response to the pandemic, closure of businesses resulting from the inability to work safely without risk of exposure to the coronavirus, clients and contractors have implemented designs that enable social distancing and regular disinfecting of facilities (ibid).

The Covid-19 pandemic has compelled the construction industry to rethink the health and safety landscape to protect the lives of workers (Stiles et al., 2020; Jones et al., 2020). The pandemic has shown to a degree the impacts of international cooperation working together to curb the spread of Covid-19 by promptly implementing emergency legislation to protect human life (Sekalala et al., 2020). Therefore, this paper seeks to reflect upon the lessons which the construction industry could learn from the pandemic in order to protect workers not only from the pandemic but also from the impending health and safety related issues. The realisation is presented by the early response to adapt emergency legislation and to draft industry specific requirements for the safe reopening of construction activities. Compliance in this regard has been observed as the thread against contracting the virus is a matter of life and death.

### **Literature Review**

Numerous studies have reported the urgent need to accelerate problem solving with regards to the challenges presented by Covid-19 (Marsh et al., 2021). Quick learning and the adoption of new operation protocols under the pandemic presents vast opportunities to gain new insight from shared learning and this experience could further influence shortcomings in construction health and safety (ibid). There is consensus among industry stakeholders that the Covid-19 crisis has enabled sustainable practices within construction industry, and this should be used as a catalyst towards positive change (Megahed and Ghomien, 2021). It has also been demonstrated that fewer safety incidents have been report, although this may be attributed to fewer workers on site and the notion that workers have to think more cautiously about activities which were



second in nature previously (Caminsky, 2021). Some contractors have issued new safety controls on all their sites which engages all works actively in the consideration of safety (Marsh et al., 2021).

Americas (2021) reported that with safety as a basic principle, emerging workplace trends could enable a resilient workplace post-COVID-19. Furthermore, the authors contend that when evaluating the reopening of sites, contractors should consider under safety and health; the requirements which must be put in place to protect workers and visitors against major risks, the necessary steps needed to support and promote healthy sites and workers lifestyle, and also, to ensure that workers' safety is paramount and that the "new normal" will encompass the development and implementation of comprehensive and cost-efficient workplaces that keep workers healthy (ibid).

Construction sites had to adhere to Covid-19 protocols such as for example, social distancing, implementing new hygiene and personal protective equipment (PPE) methods, and accommodating working from home for non-essential front-line workers (Stiles et al., 2020). The importance of hygiene, health and safety has never been clearer (ibid). In support of this view, since COVID-19, there has been a rapid and general change of construction site safety, health, and hygiene, relying on management to issue clear instructions and resources, as well as ensuring that the necessary protocols during COVID-19 are observed on all construction sites (ibid). Therefore, it is thought that the nature of the pandemic, which has affected the society, has helped to push through change in management perception, acceptance, and implementation of new measures at a faster rate than is normally experienced with other construction health and safety initiatives (ibid).

In response to the Covid-19 pandemic, the South African Department of Employment and Labour issued guidelines on how to deal with the pandemic at workplaces (C19 OHS, 2020). The guidelines were issued on the 17<sup>th</sup> of March 2020 shortly after the first Covid-19 case was reported on 5<sup>th</sup> of March 2020 (ibid). Under the new guidelines, the Department of Employment and Labour appealed to employers to use the recommendation of the Occupational Health and Safety Act 83 of 1993 (C19 OHS, 2020; OHS, 1993) in particular the Hazardous Biological Agents Regulations governing workplaces in relation to Coronavirus Disease 2019 caused by the SARS-CoV-2 virus. Although OHS necessitates employers to evaluate and update risk assessments regularly, the new threat presented by COVID-19 is undoubtedly recognisable and the primary measures to minimise the risk are now well known. The objective of conducting risk assessments in relation to COVID-19 is to deliver specific focus on COVID-19 and apply the measures mandated by the Directive to specific working environments considering the Risk Assessment Guides published the National Department of Health (C19 OHS, 2020).

The construction industry is a highly regulated environment and the key legislation governing the industry in South Africa are Occupational Health and Safety Act no 85 of 1993 (OHS) and the Construction Regulations (CR) 2014 (OHS, 1993; CR, 2014). Moreover, several employer federations have their own occupational health and safety committees constantly advising members on health and safety related matters. In addition, contractors employ permanent Health and Safety Officers on construction sites to monitor compliance with regulations on site



and when entering the sites. The Construction COVID-19 Rapid Response Task Team (CC19RRTT) was convened on the 18<sup>th</sup> of April 2020 with a specific mandate to put additional measures in relation to reopening of sites during the pandemic such as the entire value chain covering suppliers, manufacturers, built environment professionals and contractors to ensure the health and safety of workers on site (CC19RRTT, 2020). The necessity for this kind of response has never been more desperate. The damage to firms caused by Covid-19, together with the threat to close non-compliant companies has left a desperate need for better health and safety management on construction sites (ibid).

In the United Kingdom (UK) the emergence of the pandemic has made it vital to urgently develop viable occupational health system essential for the construction industry to be compliant and operate under the new normal (Jones et al., 2019). The rapid response to health and safety-related changes has demonstrated to both management and front-line workers what is achievable when priority is given to health and safety (ibid). Therefore, the lessons learned could benefit health and safety improvement in the future. Health and hygiene have often been overlooked in construction; however, Covid-19 presented an opportunity to accentuate the importance of general hygiene practices therefore, giving impetus to more consideration for behavioural changes in relation to health post-pandemic (Jones et al., 2020; C19 OHS, 2020). It is thought that Covid-19 has also spawned some ad-hoc behaviours that are developed by the workers.

Reports from studies conducted in the UK identified Covid-19 risks on all construction sites were well managed and that workers felt safe; workers were more comfortable to return to work, and thankful about the efforts made to keep them safe (Jones et al., 2020). On the contrary, some respondents attested that COVID-19 risk management was poor in some parts of the construction industry and that there was little evidence of changed risk, compared to pre-COVID-19 (ibid). However, the reasons identified by most respondents as to why risk might have been lower were cited; earlier and more detailed planning, fewer workers on sites, better housekeeping, less overlap of trades in workspaces, clearer and better marked walkways, and one-way systems as well as the heightened awareness of occupational health and safety (ibid).

Hanan (2020) contends that focus on health and safety should not be a competitive gain. Therefore, putting rivalries aside and partnering with others who may be facing the same challenges could reinforce safety and keep workers safe. Strengthening safety methods should be regarded as a continuous process involving all parties with the same standard (ibid). Covid-19 has highlighted the benefits of clear messaging and consistency (Hanan, 2020; Damrose, 2020). Furthermore, Covid-19 has highlighted the importance for constant reminders, consistency, encouragement, and reinvigoration of safety and health messaging so that new behaviours are entrenched as habits (ibid). In addition, Covid-19 illustrated the benefits for new design changes over and above behavioural change to improve the wellbeing of workers.

## **METHODOLOGY**

An extensive review of literature on the top was conducted from online databases, books, articles, and technical reports. A quantitative study was further employed, and data were analysed using IBM Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics



was adopted for the data analysis and further interpreted using inferential statistics. The total sample size for this study was 21 participants representing 21 construction companies in the Kwa-Zulu Natal province in South Africa. The construction companies were conveniently sampled based on proximity and familiarity with the researcher. Further justification of the method was because most construction sites were not open and/or were operating under restricted conditions during the lock down making it even more difficult to obtain results. This study is a pilot study forming part of an ongoing empirical research across South Africa in relation to the topic.

### Profile of the Respondents

The median age of the respondents was 37 years ranging from a minimum of 26 years to a maximum of 69 years. The median years of experience were 11.5 years ranging from a minimum of 1 year to a maximum of 40 years. Most respondents were Health and Safety Managers/Officers (33.33%) followed by Civil Engineers and Artisans (23.80% each) and Construction Managers and Quantity Surveyors (9.52% each). The respondents level of education ranged from secondary/high-school to university education.

### FINDINGS

The data range interpretations for the study were based on percentages, the 4-point Likert scales and 5-point Likert scales. The group interval coefficient value for the 4-point Likert scale was calculated as  $(4) / 3 = 1.33$  and for the 5-point Likert scale was calculated as  $(5) / 3 = 1.67$ . The range interpretations for the 4-point Likert scale were used in Table 1 and for the 5-point Likert scale were used in Tables 5. For further ease of interpretation, the mean values for the 4-point Likert scale and 5-point Likert scale were interpreted as; high, medium and low.

### Knowledge of Covid-19

Using a 4-point Likert scale the respondents were asked to rate their knowledge of Covid-19 where 1=no knowledge, 2=limited knowledge, 3=average knowledge and 4=excellent knowledge:

**Table 24**

| Statement             | Mean | Int. |
|-----------------------|------|------|
| Knowledge of Covid-19 | 3,62 | H    |

It is apparent from the findings in Table 1 that most respondents had a very good knowledge of Covid-19. This is indicated by a mean value of 3.62 where 4.00 represented excellent knowledge.

### Compliance with the general Covid-19 regulations at work

In Table 2, the respondents were asked to indicate whether the following procedures were followed in their workplaces:



**Table 25**

| <b>Statement</b>                                 | <b>Percentage</b> |
|--|-------------------|
| <b>I have been screened for COVID-19 at work</b> | <b>100%</b>       |
| <b>I have been tested for COVID-19 at work</b>   | <b>0%</b>         |

It was evident from the responses that all sites conducted screening of employees upon entry on sites. However, respondents were not tested, and this may be attributed to the fact that it is not a prerequisite to test for Covid-19 unless one is presented with such symptoms.

Furthermore, the respondents were asked whether the facilities listed under Table-3 were available at work:

**Table 26**

| <b>Facility</b>       | <b>Percentage</b> |
|-----------------------|-------------------|
| <b>Own clinic</b>     | <b>0%</b>         |
| <b>Testing room</b>   | <b>0%</b>         |
| <b>Isolation room</b> | <b>42,86%</b>     |

All sites did not have own clinics and testing rooms, however, 42.86% of the respondents reported that their sites had isolation rooms. It may be inferred that most contractors were less compliant in this regard. There is a need for further investigation.

As shown in Table 4, the respondents were asked to indicate whether in response to Covid-19, their organisations conducted health and safety risk assessment consistent with medical, scientific and government guidelines, and indicating the companies' duties to provide a safe working environment:

**Table 27**

|            |             |
|------------|-------------|
| <b>Yes</b> | <b>100%</b> |
| <b>No</b>  | <b>0%</b>   |

All respondents agreed that health and safety risk assessments were conducted in response to the pandemic.

In Table-5 respondents were asked on a scale of 1 to 5 where 1=never, 2=seldom, 3=often and 5=always, to indicate how frequently the organizations practiced the following:



Table 28

| Statements   | Mean | Int. |
|--|------|------|
| <b>The company provides Information and Support</b>  | 4,42 | H    |
| <b>We must adhere to social distancing in the workplace</b>  | 4,71 | H    |
| <b>The company conducts a continuous health monitoring system to ensure personal hygiene</b>   | 4,48 | H    |
| <b>The company provides strict training to ensure understanding of disease, prevention, control and compliance with the Covid-19 regulations</b> | 4,57 | H    |
| <b>Our adherence to social distancing is continuously monitored</b>  | 4,67 | H    |
| <b>There are signs in the workplace reminding us to keep our distance from the next worker</b>   | 4,71 | H    |
| <b>The distance we are supposed to keep from other workers in the workplace or on site is marked with tape, stickers or paint</b>                | 3,90 | H    |
| <b>Company provides Masks</b>  | 5,00 | H    |
| <b>Company provides Gloves</b>   | 4,00 | H    |
| <b>Company provides Sanitizers</b>   | 4,81 | H    |
| <b>Company provides Showers</b>  | 1,14 | L    |
| <b>Company provides Laundry rooms</b>  | 2,71 | M    |
| <b>Company provides clean Running Water</b>  | 4,67 | H    |
| <b>Company provides Paper Towels</b>   | 4,52 | H    |
| <b>Company provides soap</b>   | 4,76 | H    |

The high level of agreement in Table 5 for most of the requirements indicated that most companies complied with the basic requirement for the safe execution of activities under the new regulations. Most companies adhered to social distancing which can be challenging in construction and also monitored if it was observed (mean = 4,71 and 4,67). There was strict training to ensure understanding of Covid-19 and also, companies provided information and support with regards to Covid-19 (mean = 4,57 and 4,42). All companies provided masks for the workers, most had sanitizers, soap and clean running water (mean = 5,00, 4,81, 4,76 and 4,67). However, most companies did not have showers, and few had laundry rooms (mean = 1,14 and 2,71).

### Discussion and Conclusion

The findings in this study are consistent with the findings from previous literature. Unlike general health and safety regulations and requirements, there is an overall awareness of Covid-19 by everyone involved in the construction processes. These can be noted for the study as the level of





education ranged from Secondary High School to University and regardless of the workers' positions, there was awareness from both bottom line workers and managers. The realisation of Covid-19 by everyone is an important lesson for how health and safety should be administered in construction. Clear messaging with constant reminders to observe restrictions, timely response for adopting new measures and the heightened safety culture have proven effective for everyone to change their attitude and value human life. Previous studies on knowledge and compliance of health and safety regulations in South Africa pre-Covid-19 did not indicate any improvements as accidents happened at alarming rates. However, Covid-19 regulations and requirements received attention despite being less than a year old. Moreover, the construction industry put additional measures in place to ensure workers health and safety. An important message emerging from this study signifies that the construction industry ought to rethink health and safety compliance. It has been noted for a long time that the industry is slow to adopt change. However, this popular belief is now being confronted by the practical experience during the pandemic.

This study identified some of the lessons learned from the Covid-19 pandemic. The study reviewed literature on the topic and, primary data was further collected to investigate the lessons learned from the pandemic. The important findings to emerge from this study indicate that after all there is still hope that the construction industry can rethink health and safety, and this can be done almost immediately contrary to popular belief that the industry is resistant to change. There is hope for critical thinking of livelihoods and collaboration of industry stakeholders and international bodies that workers' lives can matter more than the construction processes. However, several limitations need to be acknowledged. This is a pilot study that forms part of an ongoing empirical study and was conducted under strict lockdown (level 4 and level 3) in South Africa. Therefore, the response rate was low with most contractors responding after a long time because of minimum capacity and tight working schedules. The scope of the study was limited to compliance with the general Covid-19 regulations/legislation in South Africa. Furthermore, although respondents were asked to rate their knowledge of COVID-19, it is worth noting that there are a wide-ranging biases and opinions associated with the perceptions around COVID-19. Future research could be conducted on knowledge, attitudes and perceptions related to COVID-19 in the construction industry and to validate these constructs.

## REFERENCES

- Adeyemo, O. and Smallwood, J., (2017) Impact of Occupational Health and Safety Legislation on Performance Improvement in the Nigerian Construction Industry. *Procedia Engineering*, [e-journal] 196, pp.785-91. <https://doi.org/10.1016/j.proeng.2017.08>.
- Americas, E., (2021). How will organizations rethink their workplaces post-COVID-19? [online] Available at: <[https://www.ey.com/en\\_us/consulting/how-will-organizations-rethink-their-workplaces-post-covid-19](https://www.ey.com/en_us/consulting/how-will-organizations-rethink-their-workplaces-post-covid-19)>.
- C19 OHS, (2020). COVID-19 OCCUPATIONAL HEALTH AND SAFETY MEASURES IN WORKPLACES COVID-19 (C19 OHS), 2020. [online] Gov.za. Available at: <[https://www.gov.za/sites/default/files/gcis\\_document/202004/43257gon479.pdf](https://www.gov.za/sites/default/files/gcis_document/202004/43257gon479.pdf)>.





- Caminsky, I., (2021). Why Covid-19 is an opportunity to rethink wellbeing within construction - Personnel Today. [online] Personnel Today. Available at: <<https://www.personneltoday.com/hr/why-covid-19-is-an-opportunity-to-rethink-wellbeing-within-construction/>>.
- CC19RRTT, (2020). Construction Sector Short Term Plans for Immediate Reactivation of Construction Work & Pre-Construction Phase Work During Covid-19 Lockdown. [online] Cdn.ymaws.com. Available at: <[https://cdn.ymaws.com/www.asaqs.co.za/resource/resmgr/news\\_items/news\\_items\\_2020/cc19rrtt\\_short\\_term\\_plan\\_sub.pdf](https://cdn.ymaws.com/www.asaqs.co.za/resource/resmgr/news_items/news_items_2020/cc19rrtt_short_term_plan_sub.pdf)>.
- CIDB (2009). Construction Health & Safety in South Africa Status & Recommendations. [online] Available at: <http://www.cidb.org.za/publications/Documents/Construction%20Health%20and%20Safety%20in%20South%20Africa.pdf> [Accessed 3 Aug. 2018].
- CIDB (2016). ANNUAL REPORT. [online] Available at: <http://www.cidb.org.za/publications/Documents/Annual%20Report%202016-2017.pdf> [Accessed 21 Aug. 2018].
- Damrose, C., (2021). COVID-19 Awareness Training & Certification | General Building Contractors Association. [online] General Building Contractors Association. Available at: <<https://gbca.com/covid-19-awareness-training/>>.
- Giles, N., Mills, C. and Ward, T., (2021). Construction Claims in the COVID Era: Lessons Learned and Best Practices | JD Supra. [online] JD Supra. Available at: <<https://www.jdsupra.com/legalnews/construction-claims-in-the-covid-era-8696382/>>.
- Hanan, L., (2021). COVID-19 Safety Protocols that Work: Lessons from Philadelphia's Commercial Construction Industry. [online] General Building Contractors Association. Available at: <<https://gbca.com/hard-hat-chat/covid-19-safety-protocols-that-work-lessons-from-philadelphias-commercial-construction-industry/>>.
- Health and Safety Executive (HSE). (2019). Construction statistics in Great Britain, 2019. <https://www.hse.gov.uk/Statistics/industry/construction.pdf>
- Horsnail, J. and Williams, C., (2020). INSIGHT: Construction Industry Outlook—Post-Covid Legal Trends. [online] News.bloomberglaw.com. Available at: <<https://news.bloomberglaw.com/daily-labor-report/insight-construction-industry-outlook-post-covid-legal-trends>>.
- International Labour Organisation (2011). Construction OS&H Safe & healthy working environment. ILO.
- Jones, W., Chow, V. and Gibb, A., (2020). [online] Balfourbeatty.com. Available at: <<https://www.balfourbeatty.com/media/318555/covid19-and-construction-early-lessons-for-a-new-normal.pdf>>.
- Marsh et al., D., (2021). Lessons from Lockdown: Construction and Covid-19 | Major Projects Association. [online] Major Projects Association. Available at: <<https://majorprojects.org/blog/lessons-from-lockdown-construction-and-covid-19/>>.



- Megahed, N. and Ghoneim, E., (2021). Indoor Air Quality: Rethinking rules of building design strategies in post-pandemic architecture. *Environmental Research*, 193, p.110471.
- Raliile M.T. and Haupt T.C., (2019) "The Construction Health and Safety Regulation 2014 Impact on Construction Workers Well-Being", MSc Dissertation, School of Engineering, University of Kwa-Zulu Natal South Africa.
- RSA (Republic of South Africa). 2014. Construction Regulations. Regulation R. 84 in terms of the Occupational Health and Safety Act (Act 85 of 1993). Pretoria: Government Printer.
- Sekalala S., Forman L., Habibi R., et al (2020) Health and human rights are inextricably linked in the COVID-19 response *BMJ Global Health* 2020; 5: e003359.
- Stiles S., Golightly D. and Ryan B., (2020) Impact of COVID-19 on health and safety in the construction sector. *Hum Factors Man.* <https://doi.org/10.1002/hfm.20882>