

1                   **Exploring the Working Conditions of People in**  
2                   **Construction**

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6                   **Abstract.** The working condition concept is an essential topic in the construction  
7                   industry where management must provide a workplace that is free from hazards  
8                   and risks that might cause accidents. Site management, in particular, must  
9                   maintain working conditions that are safe and healthy for the workforce. This is  
10                  however not the case in reality as injuries and fatalities are often linked to  
11                  working condition factors in construction. This paper thus reports on the factors  
12                  causing poor working conditions on construction sites in the central region of  
13                  South Africa. This study adopted an ethnographic research approach to conduct  
14                  12 semi-structured interviews. From the findings, it was discovered that most of  
15                  the construction workers are exposed to the dangerous working environment,  
16                  which may harm their health, safety and well-being (HSW). The paper further  
17                  highlights the lack of proper housekeeping as an area of serious concern in this  
18                  context. The influence of lack of housekeeping frequently contributes to injuries  
19                  and accidents in the construction sites. Therefore, a measure to improve  
20                  housekeeping and other working condition factors should be deployed on site  
21                  with management tools such as the 5S (Sort, Set, Shine, Standardize, and  
22                  Sustain).

23                  **Keywords:** Construction, housekeeping, working conditions, South Africa.

24                  **1 Introduction**

25                  Safety is an essential element for improving the well-being of people in construction.  
26                  Over the past decades, safety has become a persistent problem for people in  
27                  construction [1]. For example, management pursuit of labour productivity improvement  
28                  at the expense of other performance parameters often increases the complexity of the  
29                  working conditions. The working conditions on construction site are mainly influenced  
30                  by site safety factors such as management commitment, safety rules and procedures,  
31                  housekeeping, safety equipment, and supervisors and co-worker's safety perceptions  
32                  [2]. Failure by management to control and monitor the site working environment could  
33                  result in situations where hazards are activated to become a risk with potentials to injure  
34                  or kill people. Since, people in construction should respect and obey the safety  
35                  regulations and create a friendly working conditions that will eliminate or reduce  
36                  injuries or accidents in the workplace, safe work is critical in the construction industry

37 due to the occupational accidents that could be traced to either the working conditions  
38 or the behavioural characteristics of workers [3].

39 In addition, the outcomes of occupational accidents affect the health, safety and well-  
40 being (HSW) of the workers negatively, just as productivity, profitability and  
41 organisational image also suffers [4]. According to Van Heerdan et al., [4], due to the  
42 high number of accident reports in the industries, most countries worldwide has  
43 compelled the construction professionals to comply with the safety regulations to  
44 improve safety regulations. For example, the Department of Labour of South Africa  
45 enforces the health and safety regulations on sites to create a conducive working  
46 environment [5].

47 According to Guo et al. [6], researchers and practitioners continue to investigate how  
48 to improve safety performance in the construction industry because of pervasive  
49 problems such as poor working conditions. The question that is reported in this paper  
50 is grounded on the basis that the working conditions on the construction sites often  
51 cause risks and hazards that might cause injury or accidents to people in construction.  
52 To solve this reported problem of working conditions, the authors empirically  
53 addressed poor working condition causation factors on construction sites because it is  
54 reported that to solve problems under investigations, one needs to understand the root  
55 causes of the difficulties [7].

## 56 **2 Literature review**

57 The construction industry is regarded as a labour-intensive industry that is dominated  
58 by general workers [8]. The general workers are exposed to high risks factors because  
59 of the nature of the construction works. As highlighted in the previous section, the  
60 construction industry is known as one of the most dangerous sectors due to the high  
61 number of accidents which are experienced worldwide [4]. More so, the outcomes of  
62 the construction safety had reflected negatively on the state of the well-being of a given  
63 society, since occupational accidents would incur various losses to the injured workers  
64 and their families, employers and society [3]. This statement is corroborated by Bowen  
65 and Govender [9] in the South African context where they argued that the lack of safety  
66 compliance has negatively influenced the well-being of the workers in the construction  
67 industry.

68 According to Ghodrati et al., [8], management commitment to improving  
69 productivity on sites affects the HSW targets of construction projects. Hence, it is  
70 argued that safety management in the construction industry is a form of institutional  
71 work and that safety activity is as much as a ritual, routine, and dramatic performance  
72 as it is goal-directed [10]. Therefore, most researchers have investigated the causes of  
73 poor safety performance. Mohammadi et al. [3] discovered the six top safety factors  
74 influencing performance negatively on Indian construction sites. The six safety factors  
75 include maintaining safe working conditions, establishing safety training, educating  
76 workers and ensuring that supervisors have good safety habits, effective control of the  
77 subcontractors' contractor by the main contractors, maintaining close supervision of  
78 the workers, and assignment of responsibility for all levels of management and workers.

79 The above mentioned factors implies that a proper HSW planning is essential for the  
 80 construction professionals to enforce regulations that workers must obey on sites [11]  
 81 because the HSW related problems such as stress, diseases, injuries, and fatalities target  
 82 for eradication in the construction industry [12]. The unsafe working conditions are  
 83 described as hazardous physical conditions or circumstances that have the potential to  
 84 cause injury or death to an individual's [13]. As indicated, the working conditions are  
 85 one of the most concerned issues in construction, and it is caused by a lack of  
 86 housekeeping, among other factors. This is because of most of the workers in the  
 87 construction industry neglect or ignores housekeeping practice [14]. Effective  
 88 housekeeping on sites is a very critical aspect of workplace safety, and it helps to  
 89 prevent or reduces workplace hazards [15]. Poor housekeeping practice creates unsafe  
 90 conditions, which cause accidents in the workplace [13].

### 91 **3 Research methodology**

92 To answer the research question, ‘what are the factors contributing to poor working  
 93 conditions in construction?’ The authors used an ethnographic research approach on  
 94 construction sites [16]. Ethnographic research is defined as a systematic approach  
 95 designed to investigate the social and cultural life of communities, institution or a  
 96 specific group of people [16]. The adoption of an ethnographic research approach  
 97 helped the research to collect qualitative data by interacting and sharing knowledge  
 98 with the interviewees about their working conditions as illustrated by Fife [17]. The  
 99 participants in the study are construction professionals working on construction sites in  
 100 Bloemfontein, South Africa. The data were collected between August and September  
 101 2018. The qualitative data were collected through semi-structured interviews conducted  
 102 with 12 construction professionals (Table 1). The interviewees were visited on their  
 103 construction sites and were approached to do this exploratory study about working  
 104 conditions. An open-ended question was designed and used as a guideline to help the  
 105 researcher to structure face-to-face interviews. The researchers ensured that the  
 106 interviewees covered all relevant topic areas during the interview sessions. The benefit  
 107 of the qualitative approach is that the interviewees could express their opinions and  
 108 lived experiences on the issues around working conditions. After that, the data were  
 109 analysed thematically. The purpose of the thematical analysis is to help the researcher  
 110 to summarise the key features of an extensive data set to produce a clear and organised  
 111 final report of the collected data [18].

112 **Table 1.** Profile of interviewees.

Code	Interviewees	Number	Percentage (%)
1	Site agent	1	8.0
2	Site engineer	1	8.0
3	Site foreman's	3	25.0
4	Student supervisors	2	17.0

5	Artisans (bricklayers)	5	42.0
<b>Total</b>		<b>12</b>	<b>100.0</b>

113

114 **4 Results and discussions**

115 It is discovered that construction workers are exposed to poor working conditions that  
 116 might influence their HSW negatively on various visited construction sites. Therefore,  
 117 it can be concluded that indeed HSW is very critical in the construction industry due to  
 118 working conditions that could harm people [3]. It is also reported by some interviewees  
 119 (1, 2 and 4) that the general workers are the one who is exposed to high level of noise  
 120 created by machines or plants in operations. They are also exposed to the dust generated  
 121 by moving vehicles and the wind. This negatively affects the HSW of the workers, and  
 122 they are infected, in certain circumstances, with diseases such as tuberculosis (TB).  
 123 More so, some interviewees (5) comment on the well-being of the workers on  
 124 construction sites by saying:

125 *“The construction industry must ask questions such as why are the*  
 126 *construction workers, especially the labourer and artisans being the*  
 127 *victims of poor health conditions than professional engineers and*  
 128 *managers who are working on the site.”*

129 *“This is because most of the time the professional engineers and*  
 130 *management are spending most of the time in their site offices and are*  
 131 *not exposed to hazards which might put their health in danger.”*

132 Therefore, it can be argued that the construction organisations must protect the  
 133 workers and promote a safe working environment for the workers. Some interviewees  
 134 report that most of the construction organisations are excelling in improving the HSW  
 135 of the workers. This is because most of the construction organisations have adopted a  
 136 safety standard to provide full personal protective equipment (PPE) to the workers  
 137 working on sites. Also, site visitors are compelled to undergo a site induction before  
 138 they can be permitted to enter the site work.

139 Regarding housekeeping, Interviewee 1 had a similar response to one of the  
 140 interviewees three where they argued that housekeeping is the responsibility of  
 141 everyone working on sites, not only for the workers. They contend that if management  
 142 does not promote good housekeeping, the worker will also not support good  
 143 housekeeping. The effect of poor housekeeping can lead to slips, trips or fall in the  
 144 walkway. This explains the statement of Sui et al. [15] that housekeeping in the  
 145 construction industry is a very critical aspect of workplace safety and it helps to prevent  
 146 or reduces the causes of accidents.

147 For the research to analyse housekeeping perceptions, the 12 interviewees were  
 148 asked to indicate how they observe and practice housekeeping in construction. Table 2  
 149 shows the opinions of the participants on housekeeping. The participants were asked to  
 150 answer with either a ‘Yes’ or ‘No’. Table 2 indicates that only four interviewees agreed  
 151 that they always practice housekeeping, then five of them responded that they often

152 practice housekeeping, and while three of them disagreed that they do not practice  
153 housekeeping.

154 Some of the interviewees' comments on housekeeping include:

155 *'Yes, my team always practice housekeeping. This is because our*  
156 *experience has taught us that poor housekeeping can cause injuries and*  
157 *accidents to our workers. So, good housekeeping helps out*  
158 *organisations to prevent hazards which might cause injury and*  
159 *accidents to our workers.'*

160 *'Yes, my team often practice housekeeping. This is because after every*  
161 *three weeks we are audited by the safety managers. Good housekeeping*  
162 *put our books in good standing and our organisations will not be*  
163 *penalised for poor housekeeping by the safety manager.'*

164 *'No, my team do not always practice housekeeping. This is because*  
165 *housekeeping practice makes my team lose production target and we as*  
166 *a subcontractor are getting paid based on the work we deliver to the*  
167 *main contractor.'*

168 **Table 2.** Perceptions of the participants on housekeeping in construction sites.

<b>The perceptions of housekeeping</b>	<b>Yes</b>	<b>No</b>
My team always practice housekeeping	4	-
My team often practice housekeeping depending on how busy the team is working on their activities	5	-
My team do not still practice housekeeping	-	3

169

170 From the findings, it was discovered that it is difficult to eliminate all injuries and  
171 accidents on construction sites without paying attention to housekeeping matters. As it  
172 is highlighted by Bowen and Govender [9], South African construction constitute a  
173 high-risk working environment. Several interviewees stated that it is difficult to  
174 eliminate accidents on construction sites due to natural factors which cannot be  
175 controlled by a human being. For example, it is difficult for people in construction to  
176 monitor the effects of natural weather (heavy rain, winds and hot suns) that could  
177 produce a poor working environment. More so, an interviewee 2 and 4 argued that  
178 during the summer period, workers are exposed to work in extremely hot weather.  
179 Because of the warm weather, workers are forced to drink lots of water, which makes  
180 them not as productive as expected. Such a situation leads to the decision to take  
181 shortcuts to meet production targets. This illustration by the interviewees suggests that  
182 injuries and accidents should be blamed on the unsafe acts created by the workers. For  
183 instance, management may enforce regulations consistently on a site, yet one would  
184 still find workers who are ignorant of the HSW regulations because of their actions and  
185 decisions when working on the site. Therefore, it can be concluded that people in  
186 construction must understand that safety work is institutional work that serves a purpose  
187 beyond achieving operational safety [10].

## 188 **5 Conclusions**

189 As highlighted in the introduction, the research addressed poor working conditions and  
 190 the effect of the lack of proper housekeeping on construction sites. The face-to-face  
 191 interviews used to elicit the perceptions of workers based on lived experiences suggest  
 192 that most of the construction workers are exposed to work in a competitive working  
 193 environment, which might cause harm to their HSW. For example, some of the  
 194 interviewees argued that the general workers are the one who is exposed to high level  
 195 of noise created by machines or plants and the dust generated by moving vehicles and  
 196 the wind. This negatively affects the HSW of the workers, and they might be infected  
 197 with diseases such as tuberculosis (TB) due to the dust they are breathing while  
 198 working. It was also discovered that a lack of housekeeping is a problem that is causing  
 199 an unfriendly working environment. Most of the workers in the construction industry  
 200 ignore the importance of housekeeping practice. Effective housekeeping is essential  
 201 since it helps to prevent or reduces workplace hazards. The 5S tool is recognised as  
 202 effective in tackling the challenge. It is recommended that site management begin to  
 203 implement the tool, which means Sort, Set, Shine, Standardize, and Sustain. Therefore,  
 204 it can be concluded that it is the responsibility of both management and the workers to  
 205 improve the working conditions. This can be achieved by complying with the safety  
 206 regulations designed to govern the construction sites.

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