

Impact of Barriers to Implementing Health and Safety Practices for Construction Workers' Productivity in SMMEs

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Abstract

Health and safety (H&S) practices play a crucial role in improving efficiency, reducing costs, and ensuring the success of construction projects. However, small, medium, and micro enterprises (SMMEs) often experience low worker productivity, partly due to barriers to implementing H&S practices. This study investigates the barriers to the implementation of H&S practices affecting workers' productivity in construction SMMEs, addressing a research gap in construction management. A quantitative research approach was adopted, employing a structured questionnaire distributed to 530 Construction Industry Development Board (CIDB) contractors registered from grades 1-6 as general building contractors and civil engineering contractors in Gauteng Province. Descriptive statistics were applied for data analysis and interpretation. The findings indicate that barriers to implementing H&S practices are not widely perceived as major factors affecting workers' productivity in the study area. This challenges the prevailing assumption that such barriers significantly impact workers' productivity. The study highlights the need for policymakers and industry stakeholders in the study area to explore additional H&S barriers and their implications for worker productivity. This research provides new insights and lays the foundation for further investigation into broader barriers to H&S implementation and their potential effects on construction workers' productivity.

Keywords: Construction sector, contractors, health and safety practices, SMMEs, workers' productivity

1. Introduction

The construction industry is a critical sector in South Africa, employing over 536,000 workers as of March 2022, with small, medium, and micro enterprises (SMMEs) playing an essential role (Stats SA, 2022). The National Development Plan (NDP) 2030 underscores the importance of infrastructure investment to stimulate economic growth (National Planning Commission, 2013). Given the labour-intensive nature of the construction industry and the significant role of SMMEs, workers' productivity is crucial for the sustainability of construction businesses (Adebawale & Smallwood, 2020). Existing literature highlights the importance of health and safety (H&S) practices in enhancing workers' productivity in SMMEs (Agumba & Haupt, 2018). However, construction SMMEs often face significant barriers in implementing effective H&S practices, which reportedly hinder productivity (Agumba, 2013). Non-compliance with the Occupational Health and Safety Act (OHSA) 85 of 1993 and the Construction Regulations of 2014 can result in legal penalties, project delays, and operational inefficiencies (Mashwama *et al.*, 2018).

While some studies emphasise the benefits of H&S practices, others suggest that financial constraints, technological limitations, and worker attitudes are major factors influencing their successful implementation (Choudhry, 2017; Setiani & Abd Majid, 2019). This study examines the barriers to implementing H&S practices that affect workers'

productivity in South African construction SMMEs. The primary objective is to identify the barriers to H&S practices implementation through a literature review and to determine their significance for workers' productivity using primary research data. A limitation of the study is the narrow scope of barriers identified in the existing literature. A more comprehensive literature review is required to explore a broader range of barriers to implementing H&S practices that may influence workers' productivity. The findings contribute to the ongoing discourse on improving H&S practices and productivity in SMMEs, offering potential benefits for policymakers, industry professionals, and construction SMMEs.

2. Literature Review

Health and safety practices present significant challenges for many SMMEs, particularly in the construction sector. The International Labour Organisation (ILO, 2020) highlights that SMMEs constitute most businesses worldwide, with many operating under informal conditions characterised by weak occupational safety and health (OSH) standards. These conditions increase workplace hazards, raising the risk of accidents and injuries. The extent to which SMMEs face barriers in implementing H&S practices varies based on financial resources, managerial commitment, and regulatory awareness. For many, limited financial capacity and knowledge hinder their ability to establish safer working environments (ILO, 2020). In some cases, SMMEs do not perceive H&S

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compliance as a primary concern, leading to inconsistent safety practices. However, inadequate H&S measures can directly impact worker productivity by increasing absenteeism, accident rates, and workflow disruptions (Tremblay & Badri, 2018).

Agumba and Haupt (2018) argue that construction SMMEs often underperform in H&S compliance due to financial and managerial limitations, weakening their safety culture and regulatory adherence. This negligence has direct consequences on worker productivity, as accidents lead to downtime, reduced morale, and skill shortages due to employee turnover (Ammad et al., 2021). While some studies emphasise that neglecting safety results in workplace incidents and regulatory penalties (Tremblay & Badri, 2018), others suggest that SMMEs may not always recognise the productivity benefits of H&S compliance. For instance, some construction firms perceive H&S regulations as bureaucratic and financially burdensome rather than necessary, leading to varying levels of commitment (Mashwama et al., 2018). This lack of commitment contributes to unsafe working conditions, reducing workers' efficiency and increasing operational disruptions (Kaynak et al., 2016).

Tremblay and Badri (2018) state that SMMEs' occupational health and safety (OHS) standards fall short of those of larger companies and that SMME enterprises have up to 50% more non-fatal injuries and up to eight times as many fatal accidents. Tremblay and Badri (2018) identify financial and human resource limitations, lack of OSH expertise, and negative perceptions of compliance as key barriers to adopting comprehensive H&S measures. These barriers have direct implications for worker productivity (Mashwama et al., 2018). Unsafe conditions can cause frequent work stoppages due to incidents, illnesses, or injuries, affecting overall project timelines and efficiency (Choudhry, 2017). SMMEs that lack access to external safety programs often struggle with maintaining safety standards, leading to increased absenteeism and higher employee turnover (Mashwama et al., 2018). The lack of proper H&S training exacerbates these challenges, as workers may fail to recognise hazards, resulting in more workplace accidents that reduce productivity levels (Adebawale & Smallwood, 2020).

Training and awareness gaps among employees further hinder the effective implementation of H&S practices, directly impacting productivity (Setiani & Abd Majid, 2019). Many construction SMMEs fail to provide comprehensive H&S training, leaving workers with limited knowledge of safety protocols (Ammad et al., 2021). Insufficient training leads to increased workplace accidents, prolonged recovery times, and diminished worker efficiency (Mashwama et al., 2018). Without proper training, employees may be unaware of best practices, leading to higher rates of non-

compliance and reduced overall workflow efficiency (Al Mawli et al., 2021).

In many SMMEs, only a few individuals handle H&S responsibilities, making it difficult to enforce safety measures across all operations (Mashwama et al., 2018). The shortage of dedicated H&S personnel means that risk assessments, incident reporting, and compliance monitoring may be overlooked, further increasing workplace hazards and productivity losses (Kaynak et al., 2016). Advances in technology may close the accessibility gaps regarding quality H&S training. According to Xu et al. (2023), the prevalence of technology has led to advances in digital learning platforms to the extent that workers can be trained on demand using mobile devices without the limitation of time and location. The efficacy of such training in H&S is yet to be proven, given the need for practice-based training to ensure that learning results are achieved.

Employee attitudes also play a crucial role in determining the success of H&S implementation and its effect on productivity. Some workers perceive H&S measures as time-consuming or unnecessary, leading to resistance to training programs and non-compliance with safety procedures (Tremblay & Badri, 2018). A lack of worker engagement in H&S initiatives weakens the integration of safety practices into daily operations, increasing the likelihood of accidents that disrupt productivity. When employees are not actively involved in safety decision-making, there is often a disconnect between management policies and on-site practices, reducing the overall effectiveness of H&S programs (Choudhry, 2017). Conversely, firms that foster strong safety cultures tend to experience improved productivity, as workers feel more secure and motivated, leading to higher efficiency levels and reduced absenteeism (ILO, 2020).

Financial constraints further impede the implementation of effective H&S practices and, by extension, productivity (Tremblay & Badri, 2018). Many construction firms operate on tight budgets and view safety investments as non-essential expenditures with no immediate returns (Setiani & Abd Majid, 2019). The cost of training programs, personal protective equipment (PPE), and compliance measures discourages many SMMEs from prioritising H&S initiatives. However, this short-term cost-cutting approach often leads to long-term productivity losses due to increased workplace accidents, reduced worker morale, and operational inefficiencies (Mashwama et al., 2018).

The rapid pace of technological advancements in the construction industry further complicates safety compliance. Many SMMEs struggle to keep pace with evolving safety standards and digital tools designed to enhance workplace safety, leading to inconsistent safety enforcement and decreased productivity levels

(ILO, 2020). Ultimately, existing literature indicates that the barriers to implementing H&S practices in construction SMEs not only impact compliance but also significantly affect worker productivity.

3. Research Methodology

This study adopted a quantitative approach, analysing numerical data to achieve its objectives. The study population was 22,429, which comprised CIDB-registered SMEs (Grades 1-6) in the General Building and Civil Engineering Class of Works in the Gauteng Province. Respondents included construction site foremen, supervisors, labourers, and H&S officials, selected based on their knowledge of workplace H&S management and productivity. A structured questionnaire was distributed electronically to 530 respondents via Google Forms, with hard copies provided to those unfamiliar with digital platforms using a simple random sampling technique. A pilot study involving 10 respondents was conducted, which guided the refinement of the questionnaire.

Respondents were asked to rate their level of agreement with the barriers to implementing H&S practices for improving worker productivity using a 5-point Likert scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. Data analysis involved descriptive statistics, including mean, frequency, and standard deviation. The construct validity was achieved using factor loading, and the internal reliability was assessed using Cronbach's alpha. SPSS Version 29 was used for statistical analysis. For result interpretation, the mean score value range was calculated as follows: $5 - 1 = 4$; $4 \div 5 = 0.8$. Thus, responses were categorised as follows: strongly disagree (>1.00 to ≤ 1.80); disagree (>1.80 to ≤ 2.60); neutral (>2.60 to ≤ 3.40); agree (>3.40 to ≤ 4.20); strongly agree (>4.20 to 5.00).

4. Findings and Discussion

4.1. Findings

Table 1 presents the significance of barriers to implementing H&S practices for construction workers' productivity in SMEs, ranked by their perceived severity. However, before the ranking of the variables, the validity and the reliability of the data were determined. The results indicate the construct was valid and reliable. The factor loadings of the variables were greater than 0.4, suggesting the validity of the data (Yong & Pearce, 2013). In addition, the Cronbach alpha was 0.95, indicating strong reliability, which is greater than the acceptable value of 0.70 (Nunnally, 1978). In achieving the reliability and the validity of the construct, the mean values were interpreted.

The cost of H&S programs achieved a mean score of 2.31, categorising it as disagree. This is closely followed by rapid technological changes (mean = 2.30),

which also fall within the disagree category. The failure to involve employees in H&S policy implementation ranks next (mean = 2.17), supporting the disagree classification. Other notable barriers include inadequate staffing for H&S responsibilities (mean = 2.00) and negative employee attitudes towards safety measures (mean = 1.96), both of which remain within the disagree category. A lack of understanding of H&S matters (mean = 1.77), inadequate training on H&S issues (mean = 1.75), and the perception that H&S programs are a waste of time and money (mean = 1.60) are categorised under strongly disagree. The standard deviation values indicate varying levels of agreement among respondents, with higher values suggesting greater dispersion in responses.

4.2. Discussion

This study aimed to determine the perceived significance of barriers to implementing H&S practices for construction workers' productivity in SMEs in Gauteng Province. The findings challenge prevailing assumptions, as all identified barriers fell within the "disagree" or "strongly disagree" categories. This suggests that respondents do not perceive these factors as significant obstacles to worker productivity, diverging from prior research that has highlighted these barriers as critical challenges. However, while respondents downplayed these barriers, literature suggests that when such challenges exist, they can have detrimental effects on worker productivity by increasing accident rates, reducing worker morale, and causing workflow disruptions (Lingard & Rowlinson, 2005; Tam *et al.*, 2004).

For instance, the "cost of H&S programs" (mean = 2.31), while ranked relatively higher, remains within the "disagree" range. This contradicts studies by Agumba and Haupt (2018) and Tremblay and Badri (2018), which emphasise financial limitations as a key constraint for SMEs in establishing safer working environments. Studies have shown that inadequate H&S investment can lead to higher accident rates, increased absenteeism, and decreased worker efficiency (Zhou *et al.*, 2015). The findings suggest that SMEs in Gauteng may have developed adaptive strategies, such as leveraging cost-effective safety measures, integrating H&S into existing workflows, or accessing external support mechanisms. Alternatively, there may be a reluctance to acknowledge financial constraints due to social desirability bias or concerns about regulatory scrutiny.

Similarly, the "rapid change of technology" (mean = 2.30) was not perceived as a significant barrier, contradicting concerns raised by the ILO (2020) regarding the difficulties SMEs face in keeping pace with evolving safety standards. In contrast, previous research suggests that failure to adopt new safety technologies can lead to inefficient work practices, increased exposure to hazards, and reduced overall

Table 1: Barriers Hindering H&S Practices to enhance workers' productivity

Cronbach alpha=0.95										
Item		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Factor loading	Mean	SD	Rank
C-2	H&S programmes are expensive, and our company cannot implement them due to a lack of funds.	26%	45%	12%	7%	11%	0.85	2.31	1.24	1
C-7	Rapid change of technology.	11%	66%	10%	10%	4%	0.83	2.30	0.93	2
C-8	Failure to involve employees in the implementation of the H&S policy.	35%	41%	7%	8%	10%	0.80	2.17	1.26	3
C-3	Our company has a few staff members responsible for H&S matters, which affects our performance in this area.	39%	45%	3%	5%	9%	0.93	2.00	1.19	4
C-6	Employees in our company have a negative attitude towards H&S practices.	48%	31%	8%	5%	9%	0.87	1.96	1.24	5
C-5	Very few people understand H&S in our company.	52%	33%	4%	7%	4%	0.93	1.77	1.07	6
C-4	Our staff are not properly trained on H&S matters.	55%	30%	4%	6%	5%	0.95	1.75	1.10	7
C-1	H&S programmes in our company are seen as a waste of time and money because they are viewed as yielding no results.	71%	14%	6%	4%	6%	0.83	1.60	1.14	8
Average								1.98	1.15	

(Source: Authors' field data, 2024)

worker output (Haslam *et al.*, 2005). The results may indicate that SMMEs in Gauteng are gradually integrating new technologies without perceiving them as disruptive, or that the rate of technological change in their specific industry segment is manageable.

Other barriers, including "failure to involve employees in H&S policy implementation" (mean = 2.17), "inadequate staffing for H&S responsibilities" (mean = 2.00), "negative employee attitudes" (mean = 1.96), "lack of understanding of H&S" (mean = 1.77), "inadequate training" (mean = 1.75), and "H&S programs as a waste of time" (mean = 1.60), also fell within the "disagree" or "strongly disagree" categories. These findings diverge from Setiani and Abd Majid (2019), Ammad *et al.* (2021), and Mashwama *et al.* (2018), who emphasise training gaps, attitudinal barriers, and resource limitations as critical impediments. Studies indicate that inadequate H&S training and lack of worker involvement in H&S policies can contribute to poor hazard awareness, increased accident rates, and reduced productivity (Gibb *et al.*, 2014). The strong disagreement with these factors may indicate that SMMEs in Gauteng have effective internal practices, a well-established safety culture, or industry-specific H&S interventions that mitigate these concerns. However, it is also possible that respondents, influenced by social desirability bias, may have downplayed these issues.

The variability in responses, as indicated by standard deviation values, suggests that while the general trend is toward disagreement, perceptions are not uniform across all SMMEs. Differences in company size, industry sector, and management practices likely contribute to these variations. Furthermore, the study's reliance on a predefined set of barriers means that other potential impediments, such as regulatory enforcement challenges or industry-specific risks, were not explored. Future research should expand the range of examined barriers and employ mixed-method approaches, including qualitative investigations, to gain deeper insights into why SMMEs in Gauteng perceive these challenges differently from those in other contexts.

These findings have practical implications for policymakers and industry stakeholders. If cost and training are not perceived as significant barriers, safety initiatives should focus on reinforcing existing positive practices rather than solely addressing assumed deficiencies. However, literature suggests that even when SMMEs believe barriers are minimal, ongoing H&S improvements can enhance worker productivity by reducing downtime due to injuries, improving worker morale, and fostering a more efficient work environment (Hinze, 2002; Fernández-Muñiz *et al.*, 2007). Additionally, the findings suggest that targeted interventions may be more effective than broad, one-

size-fits-all safety policies, given the heterogeneity in perceptions among SMMEs.

5. Conclusion and Further Research

The findings of this study indicate that the identified barriers to implementing H&S practices are not perceived as significant impediments to construction workers' productivity in SMMEs. While some respondents acknowledged the existence of these barriers, the overall mean scores suggest that they do not substantially hinder work progress on construction sites. This challenges assumptions in existing literature that such barriers necessarily obstruct productivity. Instead, the results highlight the need for a better understanding of workplace safety dynamics, recognising that while barriers may influence worker productivity in some projects and regions, their impact varies across different organisational and regional contexts.

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- Generally, the findings suggest that the investigated barriers do not significantly affect construction workers' productivity in SMMEs. To build on this study, future research should explore additional barriers to implementing H&S practices, employing more advanced inferential statistical analyses to determine whether these barriers have a measurable impact on construction workers' productivity. A broader methodological approach, incorporating qualitative insights and case studies, could further enhance the understanding of this research area.
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