

An Assessment of Workers' Attitudes Towards Safety in the Kwazulu-Natal Province: A Systematic Review

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Abstract

The study examines the organisational, psychological, and environmental factors that affect construction workers' attitudes towards safety in KwaZulu-Natal (KZN) Province of South Africa. The study employed a systematic literature review approach using PRISMA methodology to select 83 publications sourced from Google Scholar, Web of Science, Science Direct, and Scopus databases published between 2019 and 2025 for review. Findings indicated that negative worker attitudes toward safety constitute a complex impediment to effective occupational health and safety performance, rooted in a range of psychological, organisational, cultural, and socio-economic features. Further results implied a critical cluster of causes relates to human factors and external constraints: socio-economic factors affecting compliance, such as low income and job insecurity, often compel workers to prioritise economic necessity over safety adherence. More findings indicated the impact of non-adherence to safety practice to include increased rates of accidents, injuries, and fatalities; reduced adherence to formal safety systems; short-term productivity gains that ultimately result in delays and rework; and resistance to adopting new safety technologies. The findings provide information for stakeholders to improve construction safety in KZN province of South Africa. Emphasis should be placed on strengthening leadership commitment, consistent enforcement of safety regulations, improved worker training, timely provision of personal protective equipment, and inclusive safety communication.

Keywords

Construction safety, worker attitudes, occupational health, safety compliance, KwaZulu-Natal

1. Introduction

The South African construction industry is widely regarded as one of the most hazardous due to its high accident, injury, and fatality rates (Department of Employment and Labour, 2024). In KwaZulu-Natal, a province that is rapidly expanding in its infrastructure, these national safety concerns are reflected. Numerous factors contribute to the region's poor safety performance, such as insufficient safety training, irregular compliance with occupational health and safety (OHS) regulations, and a lack of skills (Ntuli and Allopi, 2014). Employee attitudes towards safety have a big impact on construction site safety outcomes. Research shows that positive safety attitudes can significantly reduce accidents and promote adherence to safety protocols, whereas negative attitudes often result in risk-taking behaviour and non-compliance (Griessel, 2021; Mulenga, Bagraim and Smallwood, 2011). Despite legal frameworks such as the Occupational Health and Safety Act 85 of 1993 and the Construction Regulations of 2014, studies continue to uncover alarming safety incidents, highlighting the continuous challenges of aligning worker behaviour with safety standards (Masimula, 2018; Kunodzia, Bikitsha and Haldenwang, 2024).

The Construction Industry Development Board (CIDB) (2021) claims that the sector usually has unstable working conditions, with workers enduring long hours, inadequate safety equipment, and a lack of communication regarding safety procedures. By undermining investments in worker training and long-term safety behaviour, temporary or casual employment makes these conditions worse. Additionally, the industry continues to struggle with a shortage of

skilled and experienced workers, especially in areas like KwaZulu-Natal province, where workforce development has lagged infrastructure development (Ntuli and Allopi, 2014).

The attitudes of workers towards safety are a persistent problem in the South African construction industry, particularly in KwaZulu-Natal province. Despite the implementation of safety protocols and regulations, several accidents continue to happen because of a combination of systemic and behavioural issues. Uncertain spans of control, inadequate workplace communication, delays in the delivery of personal protective equipment (PPE), and disregard for workers' physical and mental health, including illness, stress, and psychological strain, are known to contribute to unsafe working conditions (CIDB, 2021; Department of Employment and Labour, 2022). The need for improved safety management systems and stricter enforcement of health and safety regulations has been brought to light by recent high-profile structural failures and site accident incidents in KwaZulu-Natal. These incidents not only resulted in deaths and injuries, but they also raised questions about the effectiveness of management and workers' current safety attitudes.

In this case, it is important to know how employees feel about safety. Employee attitudes have an impact on how they perceive risks, follow procedures, and take part in on-site health and safety initiatives. When safety is perceived as a burden or a hindrance to productivity, compliance tends to decrease, and more hazardous work environments arise. However, when workers adopt a positive safety culture and are inspired to take responsibility, safety performance improves (Agumba and Haupt, 2009). The purpose of this study is to examine the safety attitudes of employees in the KwaZulu-Natal province considering the aforementioned.

1.1 Objectives

The specific objectives of the study were: to identify the causes of negative worker attitudes towards safety regulation practices in the KwaZulu-Natal construction industry and to evaluate the impact of workers' resistance to safety practices performance of projects in the KwaZulu-Natal province. This will contribute to the development of safer, more efficient treatments that are suitable for the conditions faced by South African construction workers as well as the provincial environment.

2. Literature Review

Overview of the importance of safety in the construction industry

Literature has affirmed essentiality of the construction industry as a foundation for economic advancement (Olatunde et al, 2025) still the industry is often regarded as one of the most hazardous industries. Khalid, Sagoo, and Benachir (2021) explain that accidents in construction often do not result only in injury or death but will directly affect the progress of the project in terms of time and budget and ultimately decrease the productivity levels of projects. Khalid, Sagoo and Benachir (2021) argue that a sound Safety Management System (SMS) is crucial in considering and managing identified critical factors that influence health and safety performances. Fei et al. (2021) take this to the next level and discuss construction safety as it can impact upon the United Nations' Sustainable Development Goals; they argue that constructing is safe and lifting safety standards in construction reflects creating/constructing and delivering projects that are socially and environmentally responsible and indicates a commitment to improving people's well-being. Stiles, Golightly, and Ryan (2021) express that unanticipated event, preceded by COVID-19, have not only confirmed construction safety vulnerabilities but also added new health risks, disrupted the way work is undertaken, and increased the amount of adaptability companies need concerning safety policies. Wang et al. (2024) mention that a shift from Industry 4.0 to Construction 4.0 can provide advantages for improving safety; however, there are barriers, specifically resistance to change and a lack of technical capacity. The discussion at global and national levels has indicated the need for strong safety systems, but converting these ideas into practical actions is not as straightforward locally, given local-specific economics, operations, and cultural requirements.

Background of the KwaZulu-Natal construction sector and the safety issues it faces

Extant literature posited that accidents that result in fatalities and serious injuries are still a major issue in South Africa's construction industry. Data from 2022 indicates 6,157 accidents, 48 fatalities, and 581 permanent disabilities, according to the Federated Employers Mutual Assurance Company (FEM) report. "Struck-by", in which a worker is hit by an object or a moving vehicle, accounted for 32.3% of all incidents reported during the same period. There are still falls from height, which were 10% of the accidents and 14% of the fatalities recorded between 2015 and 2024, according to reports from Master Builders KwaZulu-Natal.

The contextual factors also influence how safety procedures are carried out in KwaZulu-Natal, among others, ongoing safety risks and the challenges of accidents in the environmental limits. Mall and Aiyetan (2021) identify various risks of work-related incidents, including the accumulation of dust and noise, poor safety controls, and the handling of machinery; each can continually damage the health of workers. Olatunji and Chijindu (2021) note the direct link between vast project delays and complications, resulting in machine-related accidents. This shows the impacts of safety failures on an operational basis. Emerging contractors in this area face a range of challenges complying with occupational health and safety due to limited resources (Amoah and Mlenzana, 2021). Rantsatsi, Musonda, and Agumba (2023) stress that collaboration among health and safety agents plays a decisive role in improving safety performance, yet such collaboration is often inconsistent in practice. At the same time, Ndlela (2022) notes that many small and medium-sized consulting firms in KwaZulu-Natal face dynamic challenges, such as financial constraints and limited capacity, which indirectly weaken safety compliance. Ammad et al. (2021) further point out that even when safety equipment is available, personal protective equipment (PPE) usage is often inconsistent due to behavioural and enforcement issues. These interrelated hazards, capacity constraints, and behavioural patterns suggest that improving safety in the province is not solely a technical or procedural matter. It also requires a deeper understanding of the human factors, particularly the attitudes of workers toward safety protocols that influence behaviour on site.

Rationale for focusing on worker attitudes

Addressing worker attitudes is critical because safety performance is shaped not only by systems and regulations but also by the perceptions, motivations, and behaviours of those working on-site. Basahel (2021) shows that safety leadership directly influences workers' safety attitudes, knowledge, and motivation, which in turn determines their compliance with safety protocols. Shepherd et al. (2021) provide further insight into how vulnerable groups, such as migrant workers, face unique barriers, including language, cultural differences, and job insecurity, that shape their views and practices regarding safety.

Haider and colleagues (2023) show that leadership styles that enhance knowledge-sharing and innovation may indirectly enhance safety attitudes, resulting in an increased likelihood that workers will be more active in safety-related activities. Li et al. (2023) provides further insight into this as they demonstrate that attitudinal components, subjective norms, and perceived behavioural control can work together to influence organisational behaviour, and although their focus was on green development, their findings have important parallels for safety compliance. Overall, both studies emphasise that without addressing a worker's underlying beliefs and motivations, no amount of design effort in a safety system will achieve natural compliance and ongoing improvements in safety performance.

While the reviewed studies provide substantial empirical insights into the factors influencing workers' safety attitudes, stronger theoretical integration is necessary to explain how these factors interact in shape behaviour. This study therefore synthesises literature through three complementary theoretical lenses: behavioural, organisational, and socio-economic perspectives. From a behavioural standpoint, the findings align closely with the Theory of Planned Behaviour (TPB), which explains how attitudes, social norms, and perceived behavioural control influence individual actions. Evidence from the reviewed studies shows that workers' negative attitudes toward safety are often linked to perceived inconvenience and time constraints (Basahel, 2021; Tong et al., 2023), while peer pressure and workplace norms reinforce unsafe practices (Meng et al., 2021; Mohajeri et al., 2023). Additionally, inadequate training and limited access to resources reduce workers perceived control over safe behaviour (Enshassi et al., 2021; Gamil and Abd Rahman, 2023). Collectively, these factors demonstrate that safety compliance is not solely a matter of awareness but is shaped by intention, social influence, and the ability to act safely in practice.

At the organisational level, the findings can be interpreted through Safety Climate Theory, which emphasises the role of management commitment, enforcement, and communication in shaping safety behaviour. The literature consistently highlights that weak enforcement of regulations (Boadu et al., 2021; Goodluck et al., 2025), lack of visible leadership commitment (Tang, 2025), and inconsistent provision of PPE (Ammad et al., 2021) contribute to a poor safety climate. In such environments, workers perceive safety as a low organisational priority, leading to normalisation of unsafe practices. This supports the argument that workers' attitudes are significantly influenced by the signals and expectations embedded within the organisational system.

In addition, the dominance of socio-economic factors in the findings necessitates a broader structural perspective. The frequent identification of job insecurity, low income, and economic pressures (Alqahtani et al., 2024; Ibrahim et al., 2021; Khan et al., 2022) suggests that workers often make rational trade-offs between safety and livelihood. This

aligns with socio-economic constraint perspectives, where unsafe behaviour is not merely attitudinal but a response to structural vulnerabilities. Workers operating under precarious employment conditions may prioritise productivity and job retention over compliance with safety procedures, even when they are aware of the risks. Integrating these perspectives reveals that workers' safety attitudes are shaped by multi-level interactions. Behavioural intentions (TPB) are influenced by organisational conditions (safety climate), while both are constrained by broader socio-economic realities. For instance, a worker experiencing job insecurity (structural level) within a poorly enforced safety environment (organisational level) is more likely to conform to unsafe peer norms (behavioural level). This interconnected dynamic explains why negative safety attitudes persist despite the presence of regulatory frameworks such as the Occupational Health and Safety Act

Therefore, rather than viewing the identified factors in isolation, this study synthesises them into a coherent explanatory framework where psychological, organisational, and socio-economic drivers interact to shape safety behaviour. This integrated perspective provides a deeper understanding of the root causes of unsafe practices in the KwaZulu-Natal construction industry and highlights the need for holistic interventions that address not only individual behaviour but also organisational systems and structural conditions

3. Methods

This study's research methodology was a systematic literature review (SLR). Using an SLR aims to collect, evaluate, and synthesise recent research on the safety attitudes of construction workers, with a focus on studies pertinent to the South African context, specifically KwaZulu-Natal province. Researching complex topics like behavioural influences on construction site safety is made reliable and transparent by a systematic review, which enables the researcher to meticulously identify key themes, gaps, and patterns in the literature (Booth et al., 2016). The evaluation process began with the formulation of a specific research question that complemented the study's goal of investigating the organisational, psychological, and environmental elements influencing safety attitudes in KwaZulu-Natal's construction sector. Academic databases, including Scopus, ScienceDirect, Google Scholar, and institutional repositories, were searched to find pertinent literature. Using inclusion criteria, books, government reports, peer-reviewed journal articles, and credible trade publications that discuss worker conduct, safety compliance, and construction safety in developing nations, particularly South Africa, were found between 2009 and 2024. Finding sources, vetting titles and abstracts, assessing full texts, and extracting and synthesising data according to predetermined topics were all part of the review's planned methodology. Qualitative data from the literature was assessed using thematic analysis, which involved coding and grouping data into recurring themes like organisational culture, communication, leadership influence, attitudes towards safety training, and risk perception (Terry et al., 2017). The use of frequency analysis in this study is intended to identify recurring themes across the literature and does not imply statistical weighting or empirical prioritisation of factors. The PRISMA framework is used to ensure transparency when identifying, filtering, and including or excluding sources.

The exploratory nature of the study and the need to integrate disparate data from several investigations make this approach appropriate. It also preserves reproducibility, transparency, and academic rigour. Evidence-based recommendations and research gaps for upcoming studies aimed at enhancing safety performance in the KwaZulu-Natal construction industry are anticipated outcomes of the systematic literature review (Figure 1).

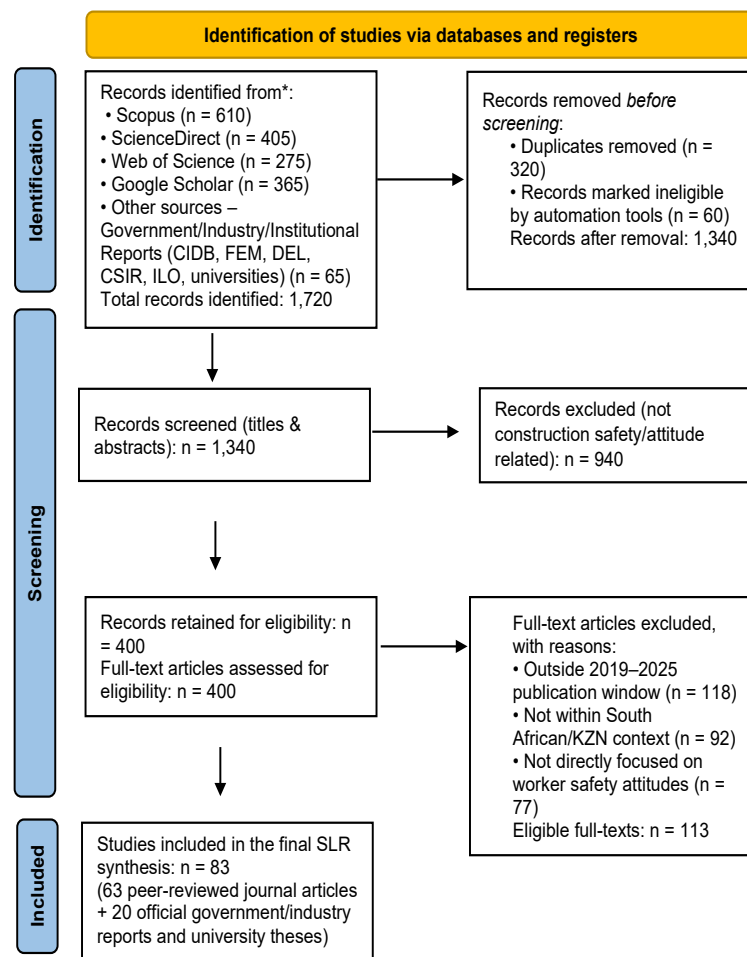


Figure 1. PRISMA 2020 flow diagram for literature search

4. Results and Discussion

Table 1 outlines the distribution of the 83 unique sources referenced throughout the literature review, reflecting a well-rounded and diverse foundation for the study. The majority of citations approximately 79.5% are drawn from peer-reviewed academic journals, with Safety Science contributing the highest number of articles, followed by the International Journal of Environmental Research and Public Health, International Journal of Construction Management, and Engineering, Construction and Architectural Management. These top journals alone account for more than one-third of all references, underscoring the literature review's strong emphasis on empirical research and theoretical grounding in construction safety and worker behaviour. Government and industry reports, including those from the Department of Employment and Labour (DoEL), Federated Employers Mutual Assurance Company (FEM), and the Construction Industry Development Board (CIDB), represent 8.4% of the sources and provide essential local data and policy context. Additional contributions come from university theses (2.4%), conference proceedings (4.8%), and local media outlets (4.8%), which enrich the review with practical insights and real-world relevance. This balanced mix of scholarly, institutional, and contextual sources ensures that the literature review is both academically rigorous and locally grounded, particularly in addressing safety attitudes within the KwaZulu-Natal construction sector.

Table 1. Frequency of Database Sources used in this study

Database/Sources	Number of publications
Safety Science	12
International Journal of Environmental Research and Public Health	5
International Journal of Construction Management	5
Engineering, Construction and Architectural Management	5
Department of Employment and Labour (DoEL)	4
Local Media and Industry Attributions (SABC, IOL, COSATU, MBU)	4
Sustainability	3
Journal of Construction Engineering and Management	3
International Journal of Occupational Safety and Ergonomics	3
Advanced Engineering Informatics	2
International Journal of Building Pathology and Adaptation	2
Safety and Health at Work	2
Buildings	2
Journal of Construction in Developing Countries	2
Planning Malaysia Journal	2
Federated Employers Mutual Assurance Company (FEM)	2
Others (one each)	1
Total	83

This literature review was guided by three primary objectives and supported by 83 distinct sources. Of these, 26 publications (31%) contributed to the first objective, which examined the psychological, behavioural, and socio-economic influences on construction workers' attitudes toward safety. The second objective, focused on identifying the specific safety risks and operational challenges within the KwaZulu-Natal construction sector, was informed by 21 sources (25%). A further 18 sources (22%) supported the third objective, which explored how organisational culture, leadership, and regulatory enforcement shape safety compliance and performance (this objective is not reported here due to space constraint). Several sources were relevant to more than one objective, highlighting the interconnected nature of these themes.

The remaining 18 publications (22%) provided broader context, including global safety trends, technological innovations, and comparative insights from other developing regions. These helped situate the South African experience within a wider international framework and revealed both challenges and opportunities for improving safety culture. A deeper analysis of the literature showed recurring emphasis on factors such as leadership commitment, peer influence, risk perception, and access to personal protective equipment (PPE), all of which play a critical role in shaping workers' safety attitudes and behaviours. A deeper examination reveals how often each factor is represented across the reviewed literature.

The Cause of Negative Worker Attitudes Toward Safety regulation practices in the KwaZulu-Natal Construction Industry

Negative worker attitudes toward safety constitute a complex impediment to effective Occupational Health and Safety (OHS) performance, rooted in a range of psychological, organisational, cultural, and socio-economic features. A primary set of causes stems from organisational priorities and systemic enforcement failures, including productivity and cost-driven pressures that force workers to internalise the prioritisation of speed over safety, especially in resource-constrained contexts like SMEs. This is compounded by the perceived inconvenience and time constraints of safety practices, which encourages shortcutting behaviour. Furthermore, insufficient oversight contributes significantly, specifically poor enforcement and inconsistent application of safety regulations, often paired with inconsistent enforcement of disciplinary measures, leading workers to believe that compliance is optional. A lack of visible leadership and management commitment and resource provision diminish trust, resulting in a weak organisational safety climate where risky behaviours are normalised.

A second critical cluster of causes relates to human factors and external constraints: socio-economic factors affecting compliance, such as low income and job insecurity, often compel workers to prioritise economic necessity over safety

adherence. These pressures amplify psychological stress and fatigue stemming from unstable jobs and long workdays, which impair hazard awareness. Cultural issues also play a role, as cultural beliefs and fatalism may lead some workers to believe accidents are inevitable, reducing motivation for preventive action. This fatalism is reinforced by work habits and complacency, where risks are undervalued due to past unscathed experiences. In the social environment, the influence of peer pressure and workplace norms can normalise unsafe behaviour, often circumventing formal safety rules when productivity is prioritised.

Finally, barriers in communication, training, and logistical fairness solidify negative perceptions: inadequate training and lack of awareness lead to apathy because workers do not fully understand the necessity of safety actions. Communication breakdowns, often exacerbated by language and literacy barriers on diverse sites, cause confusion and frustration concerning safety roles. Workers' trust is further eroded by a lack of fairness and perceived injustice in rule enforcement, as well as delays in the provision of PPE, which signals management indifference to worker safety. Additionally, organisational structures, such as the increasing influence of subcontracting and informal labour and negative subcontractor-main contractor dynamics, undermine consistent safety application, fostering scepticism. This scepticism is intensified by a lack of trust in safety inspections, which are often seen as bureaucratic checklists, and a poor accident reporting culture driven by fear of blame. Overall, addressing these 25 contributing factors requires interventions that acknowledge workers' socio-economic realities and implement a multi-faceted approach combining better training, consistent enforcement, and a favourable workplace culture.

It is important to clarify that the frequency values reported in Tables 2 and 3 represent the prominence of themes within the reviewed literature, rather than their empirical magnitude, statistical significance, or causal impact. Specifically, frequency indicates how often a particular factor or outcome is discussed across the 83 selected sources, thereby reflecting the level of attention and emphasis it has received in existing research. As this study is based on a systematic literature review, the frequency counts should not be interpreted as a quantitative measure of effect size or real-world severity. Instead, they serve as a descriptive synthesis tool to highlight recurring issues and patterns in the literature. For instance, a factor identified in multiple studies (e.g., socio-economic pressures or weak enforcement) suggests strong scholarly consensus or widespread recognition but does not necessarily imply that it has a greater practical impact than less frequently cited factors. Therefore, the ranking of factors based on frequency should be understood as an indication of research prominence and thematic recurrence, rather than a hierarchy of actual influence on safety performance. This distinction is essential to avoid overgeneralisation and to maintain the interpretive integrity of the findings.

Table 2 outlines the primary factors that contribute to negative safety attitudes among construction workers. It reflects how often each issue is identified and examined across the reviewed literature, offering insight into the most discussed challenges. This evaluation is based on an analysis of 83 scholarly sources cited in the literature review, with each factor supported by one or more references. The frequency column indicates how regularly each factor appears, helping to rank their significance and prevalence, particularly within the context of safety practices in KwaZulu-Natal's construction industry.

Table 2. Causes of Negative Worker Attitudes Toward Safety Performance

S/N	Causes of Negative Worker Attitudes	References	Frequency	Rank
1	Socio-economic factors affecting compliance (e.g., job insecurity, low income, economic pragmatism overriding safety)	Alqahtani et al. (2024); Ibrahim et al. (2021); Khan et al. (2022); Kyarikaki et al. (2021).	4	1
2	Poor enforcement and inconsistent application of safety regulations (Lack of compliance monitoring and diminished enforcement)	Goodluck et al. (2025); Boadu et al. (2021); Ajayi et al. (2024).	3	2
3	Influence of peer pressure and workplace norms (Normalisation of unsafe behaviours by peers and senior colleagues)	Meng et al. (2021); Mohajeri et al. (2023); Liu et al. (2021)	3	2
4	Perceived inconvenience and time constraints of safety practices (Belief that safety processes hinder productivity and take too much time)	Basahel (2021); Tong et al. (2023).	2	3

5	Inadequate training and lack of awareness (Limited or lack of practical training, leading to apathy or carelessness)	Enshassi et al. (2021); Gamil and Abd Rahman (2023).	2	3
6	Leadership and management commitment (Lack of visible management commitment, resource provision, or setting an example of safe behaviour)	Basahel (2021); Tang (2025).	2	3
7	Psychological stress and fatigue (High demands, long hours, and unstable contracts impairing focus and hazard awareness)	Meng et al. (2021); Saleem et al. (2022).	2	3
8	Productivity and cost-driven pressures (Organisational pressure to meet deadlines and reduce costs, leading workers to internalise prioritisation of speed over safety)	Ajmal et al. (2022); Liu et al. (2022).	2	3

Table 2: Causes of Negative Worker Attitudes Toward Safety Performance

Figure 2 provides a visual summary of the main factors influencing negative worker attitudes toward safety performance, based on the frequency data outlined in Table 2. The figure reflects how often each issue was cited across the 83 sources reviewed in the literature. The most frequently mentioned factor, socio-economic pressures affecting compliance, was identified in 4 sources, representing 4.8% of the total. This includes challenges such as low wages, job insecurity, and the tendency for workers to prioritize financial survival over safety adherence.

Two other prominent factors poor enforcement of safety regulations and peer pressure within workplace norms were each cited in 3 sources (3.6%), highlighting the impact of weak accountability and social influence on safety behavior. A group of mid-frequency factors, each appearing in 2 sources (2.4%), include operational and human-related challenges such as time constraints, productivity pressures, inadequate training, limited leadership commitment, psychological stress, subcontracting issues, technological limitations, and weak safety culture.

The largest portion of factors (14 out of 25) were cited only once (1.2%), pointing to a wide range of specific or emerging concerns. These include communication gaps, delayed PPE provision, cultural beliefs, perceived injustice, and lack of trust in inspections. While individually less frequently, these issues collectively highlight the complex and layered nature of safety attitudes in construction settings.

Overall, the distribution suggests that negative safety attitudes are primarily driven by structural and economic vulnerabilities, as well as inconsistencies in organisational and regulatory practices. Addressing these challenges requires a comprehensive strategy that integrates stronger enforcement, leadership engagement, inclusive safety planning, and support for workers' socio-economic conditions.

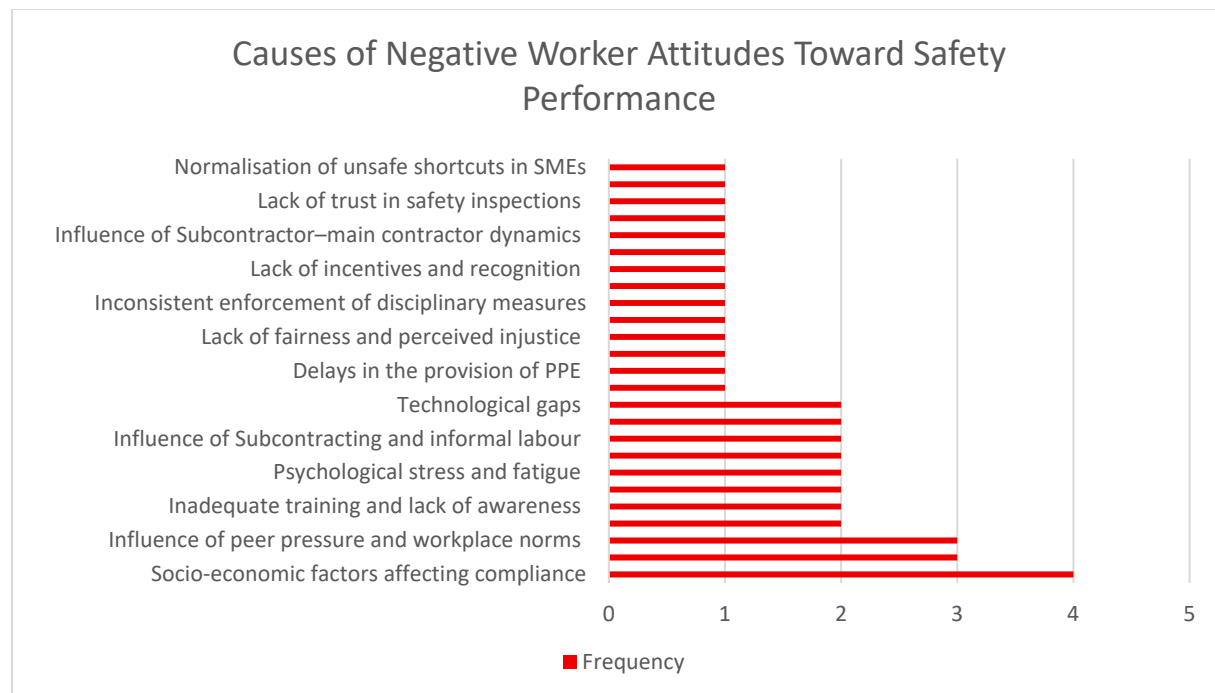


Figure 2. Frequency of Causes of Negative Safety Attitudes

The Impact of Worker’s Resistance to Safety Practices Performance of Projects

Table 3 outlines the various consequences that arise when workers resist safety practices on construction sites. The most frequently reported impacts each appearing in three sources (3.6% of the 83 reviewed) include increased rates of accidents, injuries, and fatalities; reduced adherence to formal safety systems; short-term productivity gains that ultimately result in delays and rework; and resistance to adopting new safety technologies. These outcomes point to deep-rooted systemic issues that compromise both worker wellbeing and project efficiency.

Several other impacts were cited in two sources (2.4%), such as diminished hazard awareness, financial losses from accidents and insurance claims, weakened planning and risk management, psychological strain among workers, and increased risks across subcontractor networks. These findings suggest that negative safety attitudes affect not only individual behavior but also broader organisational and industry-level performance.

Less frequently mentioned consequences (1.2%) include reduced morale and workforce retention, reputational damage, legal penalties, compromised construction quality, and the breakdown of safety leadership. Although these were cited less often, they highlight the long-term cultural and operational risks associated with poor safety attitudes. Overall, the literature indicates that resistance to safety practices has far-reaching implications impacting not just immediate safety outcomes but also project delivery, innovation, regulatory compliance, and industry reputation. Addressing these issues requires a coordinated approach that strengthens leadership, improves enforcement, and fosters a culture of safety across all levels of the construction sector.

Table 3. Impact of Negative Worker Attitudes Toward Safety Performance

S/N	Impact of Worker's Resistance to Safety Practices on Project Performance	References	Frequency	Rank
1	Higher accident, injury and fatality rates (Resistance leads to avoidance of PPE and procedures, increasing severe incidents)	Neal & Griffin (2006); Alruqi, Hallowell & Techera (2018); COSATU (2024).	3	1
2	Lower compliance with safety systems and standards (Apathy causes formal Safety Management Systems to fail in practice)	Hinze, Thurman, and Wehle (2013); Imam, Sahi, & Farasat (2023); CIDB (2021).	3	1
3	Productivity paradox: Short-Term Gains, Long-Term Losses (Shortcuts yield temporary speed but lead to costly delays, accidents, and rework)	Ajmal et al. (2022); Tong et al. (2023); Masimula (2018).	3	1
4	Reduced innovation adoption (Technology and Methods) (Skeptical workers oppose new tools like mobile safety reporting, hindering systemic risk reduction)	Hwang, Ngo, & Teo (2022); Simeon (2024); CIDB (2021).	3	1
5	Reduced hazard recognition and slower learning from near-misses (Fear of blame or mistrust prevents reporting, resulting in lost learning opportunities)	Probst & Estrada (2010); SABC News (2018).	2	2
6	Direct financial impacts: Costs, delays and insurance exposure (Accidents lead to work stoppages, compensation claims, increased operating costs, and penalties)	Liu, Zhang, & Wang (2022); IOL (2025).	2	2
7	Impaired planning and risk management capability (Project teams remain reactive when workers reject risk assessments and hazard controls)	Hinze et al. (2013); IOL (2025).	2	2
8	Diminished psychosocial wellbeing and hidden health costs (Unsafe environments cause chronic stress, anxiety, and despair among workers and survivors)	Meng et al. (2021); Saleem et al. (2022).	2	2

Resource: Researcher's construct (2025)

Table 3: Impact of Negative Worker Attitudes Toward Safety Performance

Figure 3 presents a breakdown of 15 distinct impacts resulting from worker resistance to safety practices, as identified in the literature. These impacts are grouped by frequency to show how often each consequence appears across the 83 reviewed sources.

The most frequently reported effects (appearing in 3 sources each, or 26.7% of the total) include serious safety and operational failures. These are higher rates of accidents and fatalities, reduced compliance with safety systems, short-term productivity gains that lead to long-term setbacks, and limited adoption of safety-enhancing technologies. These findings highlight how negative attitudes directly compromise both worker protection and project outcomes.

A larger portion of the impacts (40%) fall into the medium-frequency category, each cited in 2 sources. These reflect broader organisational and planning challenges, such as financial losses, weakened risk management, poor hazard recognition, and limited learning across the sector. Other consequences include psychological strain on workers and increased vulnerability within subcontractor networks, showing how resistance affects both individual wellbeing and systemic stability.

The remaining impacts (26.7%) were each mentioned once, pointing to specific business and regulatory risks. These include reputational harm, legal penalties, low workforce morale and retention, and declining construction quality. One final impact, the erosion of safety leadership and organisational culture, was contextually referenced and accounts for 6.6% of the total.

In summary, the chart demonstrates that resistance to safety practices has wide-ranging effects, from immediate physical harm to long-term financial, cultural, and operational damage. Addressing these issues requires a coordinated strategy that strengthens leadership, improves enforcement, and fosters a culture of safety throughout the construction sector.

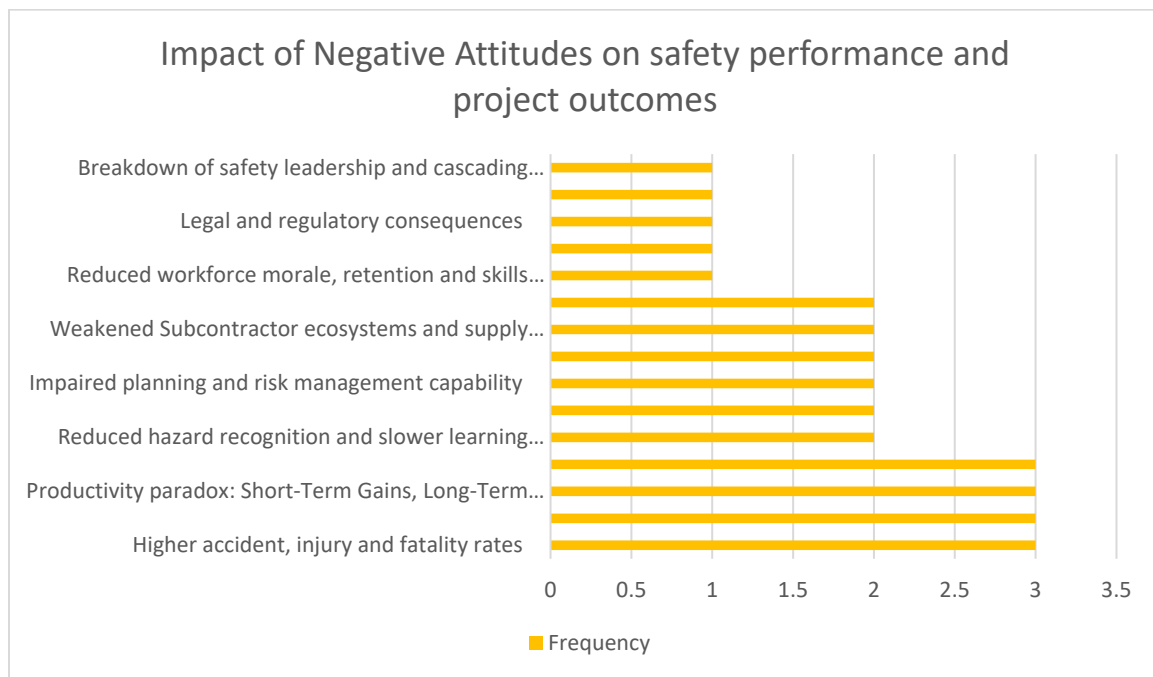


Figure 3. Frequency of Reported Impacts of Negative Attitudes on Safety Performance

5. Conclusion

The study employed a systematic literature review to examine workers' attitudes toward safety in the KwaZulu-Natal province, South Africa. The findings reveal that negative safety attitudes are shaped by interconnected organisational, psychological, socio-economic, and cultural factors. Key drivers include job insecurity, weak regulatory enforcement, productivity pressures, inadequate training, and limited leadership commitment. These factors contribute to increased accidents, reduced compliance with safety systems, resistance to safety innovations, and long-term inefficiencies in project delivery. The study therefore confirms that construction safety is not solely a technical or regulatory issue but a behavioural and systemic challenge requiring integrated interventions.

To enhance practical relevance, the following recommendations were suggested for the short time interventions; strengthen enforcement of safety regulations through regular, unannounced site inspections and consistent application of penalties for non-compliance, ensure timely provision and mandatory use of PPE, supported by routine supervision and accountability mechanisms and implement targeted safety induction and refresher training, focusing on high-risk activities and practical, site-specific scenarios. The recommended medium-term organisational intervention were; enhance leadership commitment and visibility, with managers actively demonstrating safe practices and reinforcing safety as a core project priority, establish structured safety communication systems, including toolbox talks, multilingual signage, and feedback channels to address language and literacy barriers and introduce incentive-based safety programmes that reward compliance and proactive safety behaviour among workers and subcontractors. The study further proposed a long-term strategic and policy Interventions to include; address socio-economic vulnerabilities by promoting more stable employment conditions and fair labour practices, particularly for subcontracted and informal workers, strengthen collaboration between regulatory bodies and industry stakeholders to

ensure consistent enforcement and shared accountability and promote adoption of safety-enhancing technologies alongside training and change management strategies to reduce resistance and improve long-term safety performance. The finding of the study was limited to the information extracted from extant literature without authors own validation. Future interventions should focus on building a supportive safety culture that balances productivity with worker wellbeing across all project scales.

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