

Financial Implications of Construction Accidents on Building Projects: A Case Study of Ondo State

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Abstract

The construction sector is recognized as one of the most high-risk industries worldwide, where accidents often result in considerable financial and organizational setbacks. This research investigates the financial implications of construction accidents on building projects in Ondo State, Nigeria. A total of eighty-seven structured questionnaires were distributed to construction professionals, and seventy were properly completed and returned for analysis. The study adopted a quantitative survey method, with data analyzed through descriptive statistics and mean ranking techniques. Findings reveal that the most significant financial implications are project cost escalation, cost overruns, and bankruptcy risks, while additional impacts include legal penalties, equipment damage, reputational losses, and higher insurance premiums. The results highlight that construction accidents compromise both project performance and the financial sustainability of firms, especially small and medium-sized enterprises. It is recommended that regulatory enforcement, risk management practices, worker training, and comprehensive insurance strategies be prioritised to mitigate these financial burdens.

Keywords: *Construction accidents, financial impacts, project costs, safety management,*

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1.0 Introduction

The construction industry is a critical driver of infrastructure development, employment, and economic growth. However, it is also consistently recognized as one of the most accident-prone industries worldwide (International Labour Organization [ILO], 2010). Accidents on construction sites result not only in injuries and fatalities but also in significant financial consequences such as delays, cost overruns, and project abandonment. Globally, accident-related losses are estimated to represent nearly four

percent of the world's gross domestic product (Somavia, 2005).

In Nigeria, weak enforcement of occupational safety standards, inadequate regulatory structures, and low compliance levels among contractors exacerbate the risks of construction accidents (Makinde, 2014). Studies have shown that accidents often result in cost escalations, reduced productivity, and financial insolvency of firms (Okoye, Okolie, & Ngwu, 2017). These financial implications weaken the resilience of construction organizations and undermine public trust in the

industry. Against this backdrop, this study investigates the financial costs of construction accidents in Ondo State, providing insights into their economic implications and potential mitigation strategies.

2.0 Literature Review

The financial costs of construction accidents are typically classified into direct and indirect categories. Direct costs involve measurable expenses such as medical bills, compensation payments, equipment repairs, and replacement of damaged materials (Hinze, 2006). Indirect costs, however, are more complex and often underestimated. These include project delays, productivity losses, legal settlements, reputational damage, and reduced competitiveness in securing contracts (Oloke, 2010).

Global data suggest that over 60,000 fatal construction accidents occur annually, with developing countries bearing the greatest financial strain due to weak safety frameworks (ILO, 2010). Fewings (2010) noted that beyond immediate fatalities and injuries, accidents lead to the loss of thousands of workdays, which significantly hampers project performance and escalates costs.

Cost overruns are among the most prominent financial consequences of construction accidents. Arditi, Nayak, and Damci (2017) highlighted that delays triggered by accidents contribute directly to budget inflation. Similarly, Kumar (2016) found that accidents often lead to compressed schedules, reducing quality and increasing costs. In the Nigerian context, Okoye et al. (2017) observed that accident-related costs frequently cause insolvency and project abandonment, particularly for smaller firms with limited financial reserves.

Legal and reputational costs further compound financial impacts. Contractors who fail to comply with safety requirements face fines, litigation, and diminished market competitiveness (Charehzehi

& Ahankoob, 2012). Arunkumar and Gunasekaran (2018) emphasized that lawsuits and compensation claims magnify these burdens, threatening the survival of firms. These findings affirm that construction accidents extend far beyond immediate project disruption, affecting the long-term financial viability of contractors.

3.0 Methodology

This study adopted a quantitative research design, using structured questionnaires administered to construction professionals in Ondo State, including engineers, quantity surveyors, project managers, and builders. A purposive sampling technique was applied to ensure the selection of respondents with relevant professional experience. In total, eighty-seven questionnaires were distributed, of which seventy were duly completed and returned for analysis.

The survey was designed to capture perceptions of the financial impacts of construction accidents, such as project cost escalation, cost overruns, equipment damage, legal penalties, bankruptcy risks, and reputational losses. Data were analyzed with the Statistical Package for the Social Sciences (SPSS), employing descriptive statistics, mean ranking, and frequency distribution to determine the most significant financial implications of accidents.

4.0 Findings and Discussion

This section provides the background information, demographic details of respondents, and the results of data analysis based on the administered questionnaires. Responses were obtained from professionals including quantity surveyors, architects, civil engineers, builders, contractors, as well as skilled and unskilled labours. A total of eighty-seven questionnaires were distributed, and seventy were successfully retrieved for analysis, as presented in Table 1.

Table 1: Distribution of questionnaires

Type of response	Frequency	Percentage
Number distributed	87	100
Number completed and returned	70	80
Number not returned	17	20

Demographic data of the respondents

The data in Table 2 show that fifty-eight respondents (82.86 percent) were male, while twelve respondents (17.14 percent) were female. This indicates that men constitute the majority of participants, reflecting the male-dominated nature of the construction sector.

Table 2: Shows frequency distribution of respondents' gender

Gender	Frequency	Percent
Male	58	82.86
Female	12	17.14
Total	70	100.0

As presented in Table 3, forty-eight respondents (68.57 percent) had between one and five years of professional experience. Sixteen respondents (22.86 percent) reported six to ten years, five respondents (7.14 percent) had eleven to twenty years, and only one respondent (1.43 percent) possessed more than twenty years of experience. The predominance of those with one to five years of experience suggests that most participants had recent, practical exposure to construction projects and were well positioned to provide relevant insights.

Table 3: Years in the construction industry

Variable	Frequency	Percent
1-5 Years	48	68.57
6-10 Years	16	22.86
11-20 Years	5	7.14
above 20 years	1	1.43
Total	70	100.0

Table 4 indicates that fourteen respondents (20 percent) held National Diplomas, twenty-eight respondents (40 percent) possessed Higher

National Diplomas, and twenty-one respondents (30 percent) had Bachelor of Science degrees. In addition, two respondents (3 percent) were Postgraduate Diploma holders, four respondents (6 percent) had Master's degrees, and one respondent (1 percent) held a Doctorate. The largest proportion of participants were Higher National Diploma holders, followed by those with Bachelor of Science and National Diploma qualifications.

Table 4: Respondent's highest academic qualification

Variable	Frequency	Percent
National Diploma	14	20.0
Higher National Diploma	28	40.0
Bachelor of Science	21	30.0
Post Graduate Diploma	2	3.0
Master of Science	4	6.0
Doctorate Degree	1	1.0
Total	70	100.0

Table 5 reveals that twenty-eight respondents (40 percent) were construction professionals such as quantity surveyors, architects, civil engineers, and builders. Another twenty-eight respondents (40 percent) were categorized as skilled laborers. In addition, eight respondents (11 percent) were unskilled laborers, while six respondents (9 percent) represented other groups, including contractors and consultants. This distribution suggests that construction professionals and skilled laborers formed the majority of the sample, highlighting their significant exposure to the impacts of accidents within the construction industry.

Table 5: Area of specialization in construction works

Variable	Frequency	Percent
Professionals	28	40
Skilled labour	28	40
Unskilled labour	8	11
Others	6	9
Total	70	100.0

Table 6 shows that thirty-nine respondents (56 percent) were involved in building projects, while thirteen respondents (19 percent) worked on civil engineering projects. In addition, eight respondents (11 percent) were engaged in architectural projects, and ten respondents (14 percent) participated in other categories such as heavy engineering and commercial projects. This indicates that building projects constituted the majority of the works undertaken by the respondents.

Table 6: Type of public building project

Variable	Frequency	Percent
Building project	39	56.0
Civil Engineering project	13	19.0
Architectural project	8	11.0
Others	10	14.0
Total	70	100.0

Table 7 indicates the financial consequences of construction accidents based on their mean impact scores. The analysis shows that escalation of project costs ($M = 2.87$) and cost overruns ($M = 2.76$) are the most severe outcomes. This finding supports previous studies (Arditi et al., 2017; Kumar, 2016), which noted that accidents typically extend project timelines and inflate budgets. Bankruptcy risk ($M = 2.53$) also ranked highly, highlighting the vulnerability of firms with limited financial buffers, particularly small and medium-sized enterprises (Okoye et al., 2017).

Moderately ranked consequences include reduced transparency and accountability ($M = 2.51$) and negative effects on company valuation ($M = 2.35$), both reflecting concerns about trust and market perception. Direct financial burdens such as damage to equipment and materials ($M = 2.19$) and losses through penalties ($M = 2.22$) were also identified but considered less critical compared to immediate cost escalations.

The least severe outcomes include loss of business opportunities ($M = 2.12$), regulatory

finances, litigation expenses, and increased bonding or surety costs ($M = 1.56$). Although rated lower, these issues still add financial pressure. This agrees with Arunkumar and Gunasekaran (2018), who argued that disputes and compensation settlements further strain financial stability. Reputational impacts, while not ranked among the top concerns, were acknowledged as important since weak safety records can reduce competitiveness, consistent with the observations of Charehzehi and Ahankoob (2012).

Overall, the results reveal that direct financial disruptions such as cost escalation, overruns, and bankruptcy risks are viewed as the most pressing issues. Indirect consequences like reputational damage, legal fees, or insurance-related costs, while relevant, are seen as secondary. These findings demonstrate that accidents compromise both operational efficiency and financial sustainability, underscoring the importance of regulatory improvements, proactive risk management, and sound financial planning to minimize their long-term impact.

Table 7: Financial Implications of Construction Accidents on Building Projects in Nigeria

Variable	MeanRank
Increased project cost	2.87 1 st
Cost overruns	2.76 2 nd
Increased risk of bankruptcy	2.53 3 rd
Decreased transparency and accountability	2.51 4 th
Negative impact on company valuation	2.35 5 th
Damaged to equipment and materials	2.19 6 th
Loss of business opportunities	2.12 7 th
Financial losses and penalties	2.22 8 th
Damage to company's credit	2.18 9 th
Increased risk of project cancellation	2.11 10 th
Increased tasks and fees	2.09 11 th
Regulation damage	1.89 12 th
Regulatory fines and penalties	1.87 13 th
Legal fees and settlement	1.84 14 th
Increased bonding and surety costs	1.56 15 th

5. Conclusion

This study concludes that construction accidents impose substantial financial burdens on building projects in Ondo State. The most significant consequences include project cost escalation, budget overruns, and bankruptcy risks. Additional financial pressures such as penalties, litigation expenses, insurance premiums, reputational losses, and equipment damage exacerbate the strain on firms. These outcomes show that construction accidents compromise both immediate project delivery and the long-term sustainability of Nigeria's construction sector.

6. Recommendations

To reduce the financial costs of construction accidents, regulatory agencies should strengthen the enforcement of occupational health and safety standards through regular inspections and penalties for non-compliance. Contractors need to adopt proactive risk management measures, including safety planning, audits, and hazard identification. Firms should also institutionalize continuous training programs to improve safety awareness and integrate comprehensive insurance policies into project planning. Cultivating a culture of safety within the construction industry will protect workers, minimize financial losses, and enhance the overall resilience of building projects in Nigeria.

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