Journal of Engineering and Technology for Industrial Applications

ISSN ONLINE: 2447-0228

ITEGAM-JETIA

Manaus, v.9 n.41, p. 4-14. May/June, 2023

DOI: https://doi.org/10.5935/jetia.v9i41.858

RESEARCH ARTICLE OPEN ACCESS

ASSESSMENT OF CRITICAL CLAIMS AND THEIR IMPACTS ON THE CONSTRUCTION INDUSTRY OF NIGERIA

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ARTICLE INFO

Article History
Received: May 09th, 2023
Accepted: June 27th, 2023
Published: June 30th, 2023

Keywords:
Claims,
Claim Management,
Construction projects,
Impacts,
Disputes.

ABSTRACT

The construction projects are hardly completed on schedule and budget, and poor claims and dispute management are among the factors responsible for this performance issue. Critical claims in construction remain unresolved by negotiation and understanding between the parties but end up in advanced dispute resolution techniques. Quantity Surveyors are experts in contract administrations and are involved in all the stages of the construction projects, have not been given adequate attention in construction claim management studies. This study assesses the perception of Quantity Surveyors on the Critical claims and their impact on construction project delivery in Nigeria. The snow sampling technique was used to administer the structured questionnaire. With a Cronbach's alpha coefficient of over 0.80, the gathered data were analysed using mean score analysis and the Mann-Whitney H test. It was found that the critical claims in construction are payment-related claims (mean=4.92; SD=0.2780), contractual claims (mean=4.55; SD=0.8837), change claims (mean=4.54; SD=0.8423), extra work claims (mean=4.43; SD=0.9974), delay claims (mean=4.36; SD=1.1683), and different site condition claims (mean=4.36; SD=1.0826). Also, the major impacts of claims in construction project delivery are delays in project completion cost overrun, poor quality of work, the adversarial relationship among parties, loss of profits, and loss of job opportunities. Effective contract administration and management are central to claim management and events capable of causing drawbacks to the progress of the work should be avoided by the contracted parties.

I. INTRODUCTION

The construction sector influences and accelerates economic growth and development, and thus, is described as the 'prime mover' and 'mainstay' of countries [1-2]. The construction industry is one of the core economic engine sectors that drive the economy, create jobs, promote new investment, and contribute to GDP and national economies globally [3-5]. However, construction projects globally are hardly completed on schedule and budget because of conflicts arising from the divergent goals and expectations of the clients, consultants, contractors, and subcontractors in the construction business environment [6-7, 3]. Each of these parties attempts to attain their own goals and anticipations to maximise their benefits. Furthermore, construction projects are complex, with multiple stakeholders, documents, and contract conditions. These heighten the possibilities of disputes, contradicting interpretations and opinions about designs and construction, and confrontational attitudes which often lead to delays and disruption a common occurrence in construction [8-9,7,10], and increased claims and disputes.

Claims in construction projects are inevitable in construction because of clients' sophistication and dynamic desires for additions and changes, a complex new standard, and technological advancement [3]. The demand or assertion of a party

for additional payment and/or time due to default in the contract or actions/inactions of a party is known as a construction claim [7]. Due to the high cost and time impact of construction claims on the successful delivery of construction projects, effective claims management is unavoidably critical in construction project management, and this should span the life cycle of the projects if effective claims management is to be achieved [11, 7]. Construction claims and disputes happen in a project sponsored by a private entity as well as those funded by public organisations. It occurs regardless of whether the project has small or large funding, and the experiences of the key stakeholders cannot stop claims from occurring. Thus, no project is shielded from potential claims [3]. Construction claims arise from disagreement from different sources between the client and the contractors, and it could be a claim for delays, acceleration, change order or extra works, site conditions, damages, defects, force majeure, cost overruns, non-payment, loss of labour productivity, among other. How well claims are managed, defines how successful the project will be regarding time, cost, and quality performance [10].

While the approaches to claim management varies from country to country as evident in previous studies. The claims in the construction industry have attracted a lot of attention from researchers and academics both locally and at the international level. For example, internationally, studies such as [12-19] exists. In the Nigerian context, studies such as those [20-24] exist. However, none of these studies has been centred on the views of Quantity Surveyors. Quantity Surveyors are experts in contract administration and are involved in all the stages of construction projects. Their work goes beyond the traditional role of preparing Bills of quantities and has evolved into other socialist areas of construction relevant and beyond. According to [25], the quantity surveyor's role is multi-disciplinary and cannot be confined to a particular role because of the dynamics in the construction industry of today. Certain claims cannot be resolved by mutual understanding and negotiation between the parties involved. These claims evolve into disputes that might only be resolved through advanced dispute resolution methods. Examples of these claims according to [26] are payment-related claims, change claims, contractual claims, and damages, among others. This implies that these categories of claims impact the project baselines the more. Therefore, flowing from this knowledge, this study assesses the perception of Quantity Surveyors on the Critical claims and their impact on construction project delivery in Nigeria.

This study will add to the existing studies on construction claims. It will equip the young and new entrants of Quantity surveyors and their construction experts with the knowledge of the major claims in construction and the consequences of poor management of claims. This will enable strategies towards ensuring that these issues are avoided or minimised in constriction.

II. LITERATURE REVIEW

II.1 CLAIMS IN CONSRUCTION AND THEIR IMPACTS

To avoid delays and the costly impact of disputes that might lead to litigations. Common claims were identified to guide the contractors in understanding commercial claims that evolve from construction contracts. According to [26], most other construction claim types are settled by mutual understanding as well as by negotiation between the parties. However, there are some that are most frequent and hardly get settled. These claims lead to disputes and a resolved through advanced dispute-resolution approaches. These claims are payment-related claims, change claims, delay claims, extra work claims, contractual claims, the difference in pricing and measuring claims, different site condition claims, acceleration claims, damage claims, and contract termination claims.

In the Kingdom of Bahrain, [27] found that the topmost important types of construction claims are delay claims, claims from changes and extra works, fluctuation claims on construction materials prices, claims resulting from differences in site conditions, contract ambiguity claims and claims due to acceleration. Variations, delays by contractors and poor site investigation prior to bidding are the main cause of claims in construction projects in the UAE [28]. In Bangladesh and India, payment delays were recognised as the critical cause of claims in construction projects [26, 29]. Similarly, [30] absence of finance and untimely payments cause delays to construction projects, and this gives rise to claims in Iran. claims such as contract ambiguity claims, delay claims, acceleration claims, change claims, extra work and variation claims, price acceleration claims, change of work order claims, differing site conditions claims, damage claims, loss of profit claims, and wrongful withholding of deposits claims; are regarded as counterclaim as they are prepared by the opposing party to counter claimant claims [31]. According to [26], these claims cannot be resolved by mutual understanding and negotiation between the parties, they most time end in advanced disputes resolution approaches.

Change of work: request for change in work is a common claim in the construction sector. A request for change could lead to disagreement between the contractor and the clients n what constitutes the scope of the contract or not. Once a project has started, a change of work constitutes extra that must be claimed by the contractor [26, 32-33].

Damage claim: construction activities can lead to construction claims where damage is made to the commercial site or adjacent property, which results in the client suffering some property damage. The client can claim damage from the contractor [26, 32-33].

Injuries: In a construction site, the accident is one of the common occurrences which give rise to claims. The argument for a claim is the non-adherence to safety standards. The impact of the accident could be on the project's progress as well as on the workers or bystanders [32].

Acceleration of schedule: this type of claim emerges when the contractors are demanded to proceed with the work above the agreed budget at the bidding stage, to stay on schedule. A disagreement on what the extra cost covers is the source of this type of claim [26, 32-33].

Change in site conditions: There are statements of the site conditions covered in the contract at the time of bidding. If they are substantially different from the actual conditions on site, it might have an impact on the difficulty level of the work execution, and this can cause delays and extra costs and other resources. Sometimes, the actual conditions may not be encountered on the construction site. These situations give rise to claims of site conditions by either the contractor or the client [32-33, 26].

Construction defects: defects identified after the works have been completed are sources for a claim by the client. Errors from work not properly executed can cause damage to the building or property, and the client must claim for the cost implications from the contractor claim [32].

Delay claims: When a project is completed after its planned scheduled completion date, such a project is said to be delayed. This is a common situation in construction contacts [10]. Delays lead to financial and productivity losses, and they can result from situations that are beyond the control of the contractors or even the

clients or their agents. Earthquakes, tsunamis, and the Covid-19 pandemic are typical situations outside the contractors' control that delayed a lot of projects globally [32-33].

Contractual Claims: These are claims that arise from the contract itself, and they include disagreement over responsibilities and/or liability is omitted from the contract. Poorly written contracts have been blamed for contractual claims [26, 33].

The difference in Pricing and Measuring Claims: at the end of the construction stage, measurements are taken on-site and if there is disagreement regarding this, disputes might arise. Sometimes, the difference in the prices of some materials between the contractors and clients might give rise to pricing and measuring claims. Extra work and changes are known to create some discrepancies in pricing [26].

Contract ambiguity claims: In the preparation of contract documents and bid offers, mistakes and errors are common [33]. These mistakes can take diverse forms ranging from computational errors, written errors, assumption mistakes, poor concept understanding and dual interpretations. Errors emanating from contractors' viewpoints in bidding and setting such as errors in the estimation of project completion time, materials, workforce, and equipment. Ignoring legal matters or facts and other essential contract requirements would naturally give way to legal consequences [34].

Contract termination: termination of the contract prior to the start of work on site is a ground for claims for loss of profit by the contractors. A claim can also be made for the difference between the anticipated cost of the work and the contract price. If termination occurs after work has started, the contractor is entitled to recover losses as well. The full contract price is claimed where the work is completed in line with the contract provisions before termination occurred. However, recovery and liability under a terminated contract vary [26].

Claims in the construction industry have been blamed for a lot of issues among which are disruption of the progress of work and delays in project completion, cost overrun, diversion of resources, adversarial relationships, among parties strained relationships, loss of control over outcomes, among others [31]. [23] and [35] posit that contractual claims have led to losses of better project performance regarding time and cost. These have triggered the call for effective claim management in the construction sector. Claims from change orders cause delays in the project schedule, cost increases, loss, and reduction in productivity of labour, and poor quality of work. Furthermore, delayed claims can cause the need for an extension of equipment cost, idle equipment and labour, wastage, and resource escalations, increase in supervision and overheads, loss of profits and loss of job opportunities [31].

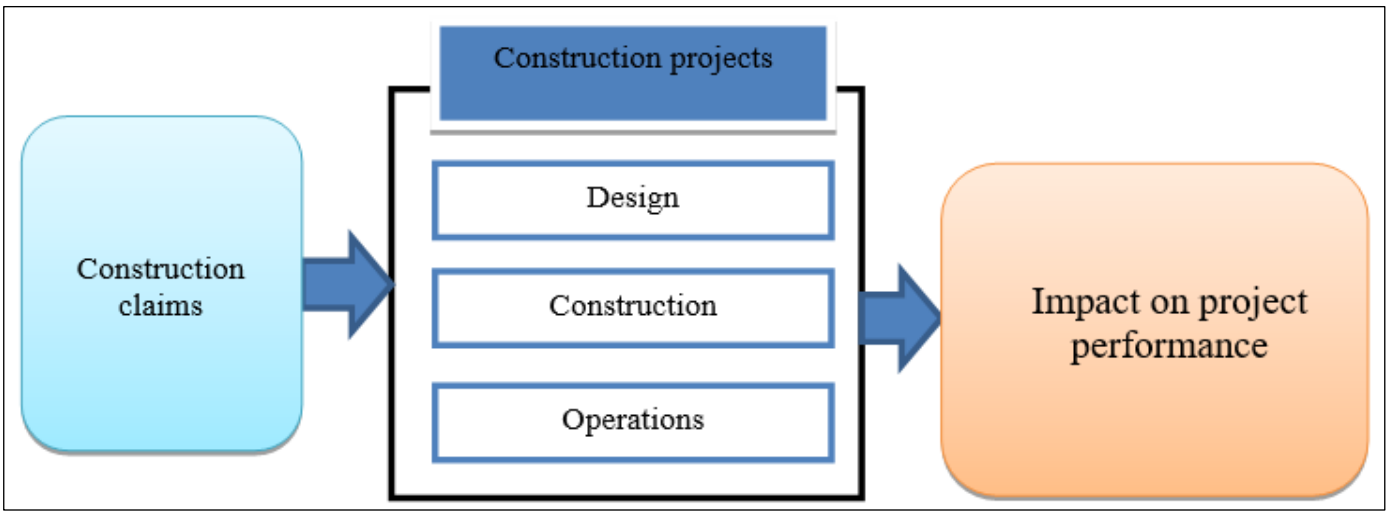

Figure 1: Relationhsip between construction claims and impact on projects.
Source: Authors, (2023).

II.2 CLAIM MANAGEMENT PRACTICES

In the construction industry, no construction contract is claim-proof [32], however, some measures of precaution can be taken either at pre- or post-construction stages to minimise the impact claim on project baselines. In a commercial contract, construction claims can be avoided by well-written contracts, good record-keeping, and better construction safety practices [32]. [36] identified the need to be careful and realistic in bid pricing and negotiations. Negotiating a contract requires careful management of the contract language with regards to claims, having sound knowledge of the contract and how they are managed, and not allowing claims to linger till the end of the project, these are the main claims management practices for better project performance and working relationships in the construction sector.

Well-written contracts: the most issue that emanates in construction are hidden in the terms and conditions of a contract. Clear contract terms and conditions are helps to protect parties from legal claims. Therefore, communication is a key to resolving issues in construction businesses efficiently. A good contract is an embodiment of good communication and should be fair in the allocation of risks across all the contracting parties. This help to reduce the risks and emergence of disputes. Construction claim consultants are essential in designing a contract that protects from all forms of adverse situations. Claims experts would include vita clauses that would protect the contractors or clients from unanticipated legal issues [32].

***Be realistic in your bid*:** the high level of competition and the need to secure a contract every business year is one of the driving forces for low bid submission [36]. The traditional systems also made this worse in that projects are awarded based on the lowest bid award. Unrealistic own bids for jobs would have an impact on the success of the project, as the eve of uncertainties and shoddy work to make profits will be high. This breed disputes and

claims at the end or as the work progresses. The contractors should be realistic with their pricing to improve contractual outcomes will less pressure from claims. Unforeseen events like Majeure and other unknown hazards may give ground for genuine claims, and the client might be open to comprise with the contractor in resolving any claims that aroused. Reasonable contact price and contingency can help minimise the effect of claims on a construction site [32].

***Good Project Record Keeping*:** construction project is complicated in that so many activities and tasks are executed simultaneously. There are even the tendencies to be distracted and confused during construction because of the high volume of activities and different data and information that are created. This leads to a lot of information and data being generated that need to be recorded and managed properly. Proper recording and keeping of construction site activities mean that communication can be effective, and dispute resolution can be made easier [32].

Construction Safety Practices: is the contractors' primary responsibility to protect workers from danger and the property from damage during construction delivery. Having a sound safety programme in place is vital to keep safety-related issues down and minimised the high level of injuries and fatalities inherent in construction [32].

[36] posit that the success of a construction project is dependent on how well cooperated parties such as the consultants, contractors and clients managed their relationships. A major impact of disputes in project implementation is on costs and time. Disputes and problems evolve from conflicting opinions among stakeholders that border on surrounding project design and construction. Without an efficient dispute and claims management process, disputes will be in continuous occurrence.

[37] argued that construction projects can still be successful with regards to the objectives of being within cost, time, quality, safety, better environmental performance, and stakeholders' satisfaction, and still be subjected to claims during the delivery period. The central thing is the management of claims processes which are (i) proper identification, (ii) notification of claim events, documentation and/or quantifications, presentation and resolutions as shown in figure 2.

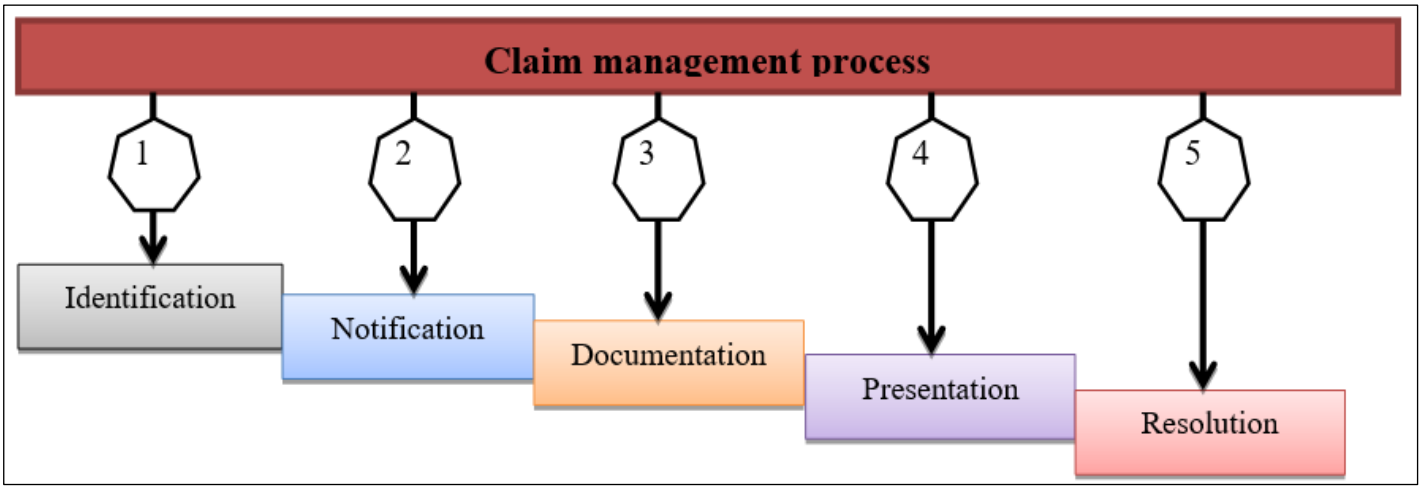

Figure 2: Claim management process.
Source: Modified from [37].

III. MATERIALS AND METHODS

The well-structured questionnaire was adopted for this study as the tool for data collection from Quantity Surveying organisations in Imo state, Nigeria. The questionnaire is suitable for this study as it is easy and simple to use and provided quantifiable data at a relatively shorter duration [39]. The use of a questionnaire in this study followed the approach of previous related studies [39, 24, 10]. The questionnaire was developed following a critical review of extant studies. The instruments for data collection (e.g., questionnaire) are formed after relevant literature that borders on the main subject of a study are reviewed [5]. Quantity Surveyors (QSs) are critical in the delivery of construction projects; this is because they are involved across the entire production and supply chains of the projects. According to [40], "*Quantity surveyors are involved in all phases of a facility's lifecycle such as feasibility, design, construction, extension, refurbishment, maintenance, and demolition".* The QS has accumulated lots of information and experience to be a better contract administrator and claim expert. Quantity surveyors engaged by private and public organisations were considered in the study.

The questionnaire was designed into three sections. The first section gathered data on the background information of the participants as well as their level of involvement in claim management processes. The second section garnered responses on the critical claims in construction, and the lastly, the third section collected data on the impact of claims in the construction industry. The questions in the second and third sections were based on a 5-point Likert scale, where 5 is the highest scale, while 1 is the lowest. To be considered for the study, the participants must have at least 5 years of working experience, be engaged by either private or public organisations, experienced contract administration, and lastly, must be working within the study area as at the time of this survey. It was, however, impracticable to obtain the database of QSs who met these sample section criteria, this informed the use of the snowball sampling technique. The snowball sampling technique is '*respondents-driven'* [5], as it is dependent on referrals and has the capability to increase the sample size [41]. The study adopted both hardcopy and Google form questionnaires. The electronic administration of the questionnaire was initiated to

enable qualified audiences who are 'difficult-to-reach' to participate [5, 42], and to reduce the impact of hardcopy papers on our forest, as it is an eco-friendly means of survey [42-43].

After the survey period of thirteen weeks, 84 usable questionnaires (hardcopy = (28)33.33% & softcopy= 56(66.67%)) were obtained, and these were adjudged satisfactory for the analysis. The data gathered on the background information of the participants and their level of involvement in claim management processes were analysed using frequencies and percentages. While those collected on critical claims in construction, and impact of claims in the construction industry were analysed using the mean score and Mann-Whitney U test. The mean score was used to rank the variables based on their relative mean weights. Mann-Whitney U test was used to determine the significant difference in the opinion of the participants from different organisational groups and the variables in which their views differ. Prior to these analyses, the research instrument reliability was established using Cronbach's alpha test which returned an alpha value greater than 0.80 as seen in Table 1 below. This shows good quality and high reliability of data.

Table 1: Reliability Evaluation.

Cases		N	%	Cronbach's Alpha	N of Items
Case 1: Critical claims in construction	Valid	84	100	0.894	14
	Excluded[a]	0	0		
	Total	84	100		
Case 2: Impact of claims on the construction industry	Valid	84	100	0.807	15
	Excluded[a]	0	0		
	Total	84	100		

Source: Authors, (2023).

IV. ANALYSIS, RESULTS AND DISCUSSIONS

IV.1 BACKGROUND INFORMATION OF RESPONDENTS

The general information of the respondents is shown in fig. 3(a) to 3(e) below. About 63.10% of the sampled respondents work in private sector organisations and 36.9% are employees of the public sector organisations (fig. 3a). In terms of the responsibilities/position in the organisations, 27.38% are procurement managers, 22.62% are project managers, 15.48% are Principal/Managing partners of their firms, and the least among the participants are senior estimators (9.52%) (fig. 3b). The distribution of the years of the experience of the participants show that those that have spent 11-15years are more (34.52%), followed by those within the range 5-10years, then 15-20years (20.24%) and 16.67% of them have spent about year 21years and above (fig. 3c). The educational information shown that those with HND are 17.86%, PGD (16.67%), B.Sc/B.Tech (36.90%), MSc./M.Tech. (27.38%), and PhD (1.19%) (fig. 3d). Finally, from (fig. 3e), the participants are chattered quantity surveyors, as they are corporate members of the Nigerian Institute of Quantity Surveyors (NIQS).

From the background information of the participants, it can be drawn that they have the requisite experience and knowledge to aid this study. This is premised on the fact that they come from a different organisational background, are middle to top management in rank, have considerable experiences in practice, are educated and have the professional qualification to contribute meaningfully to issues bordering on claims and claims management in construction.

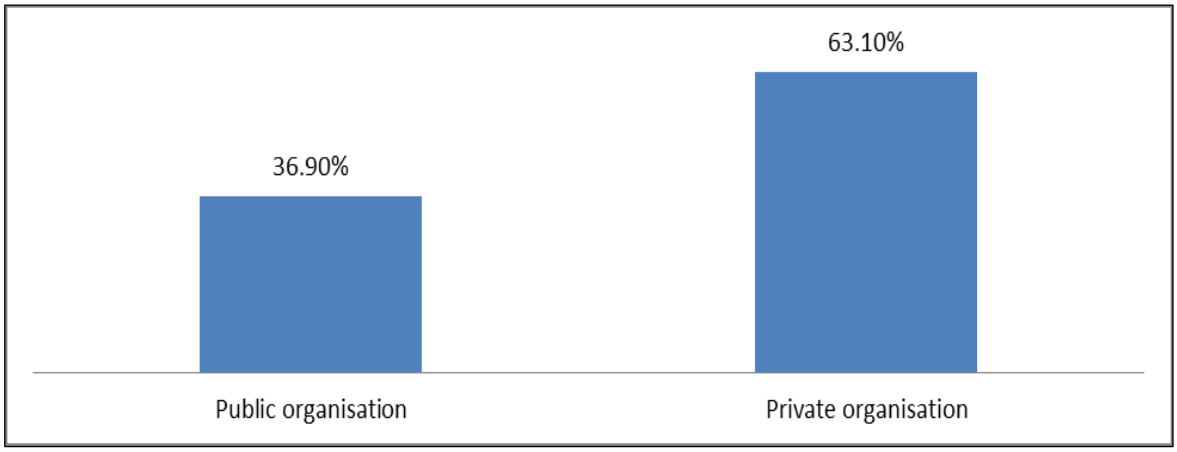

Figure 3 (a): Ownership of organisations.
Source: Authors, (2023).

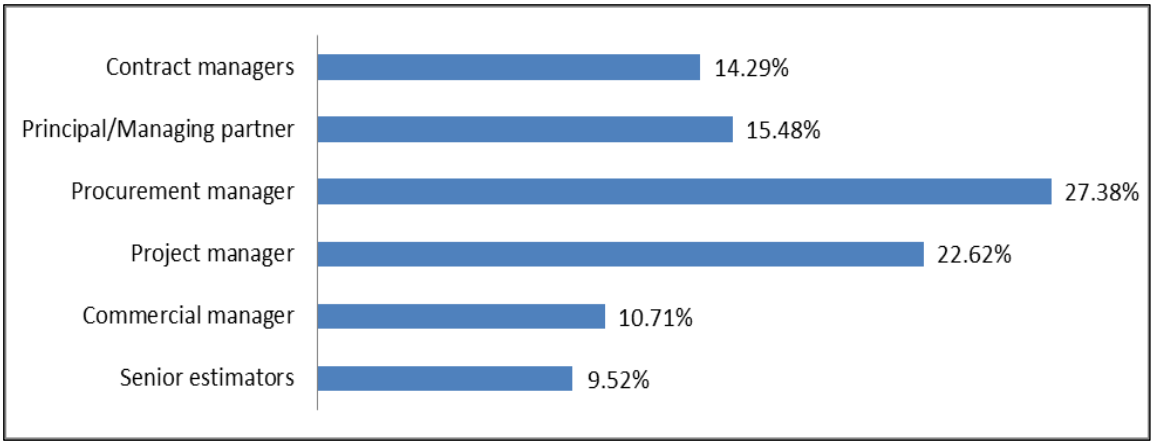

Figure 3 (b): Ranks/Responsibility.
Source: Authors, (2023).

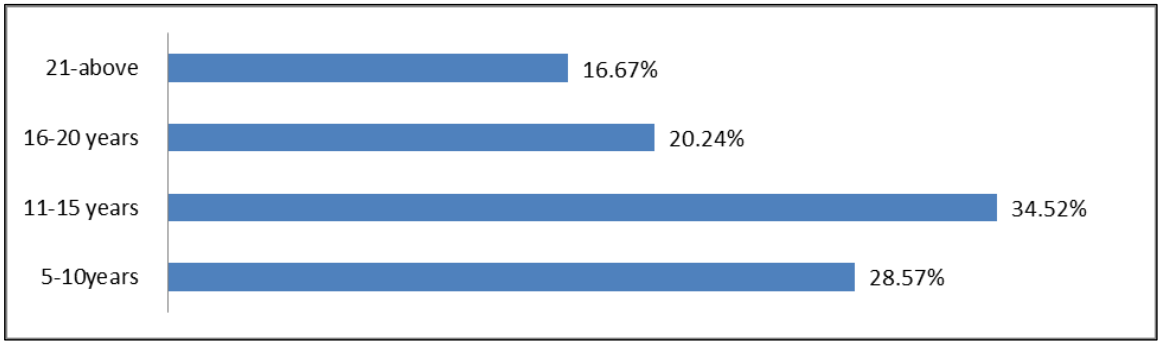

Figure 3 (c): Years of experience.
Source: Authors, (2023).

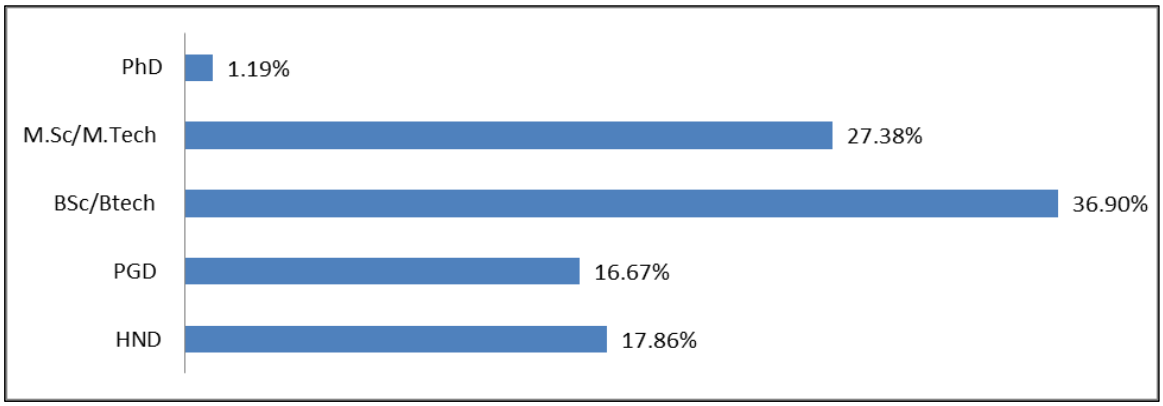

Figure 3 (d): Education qualification.
Source: Authors, (2023).

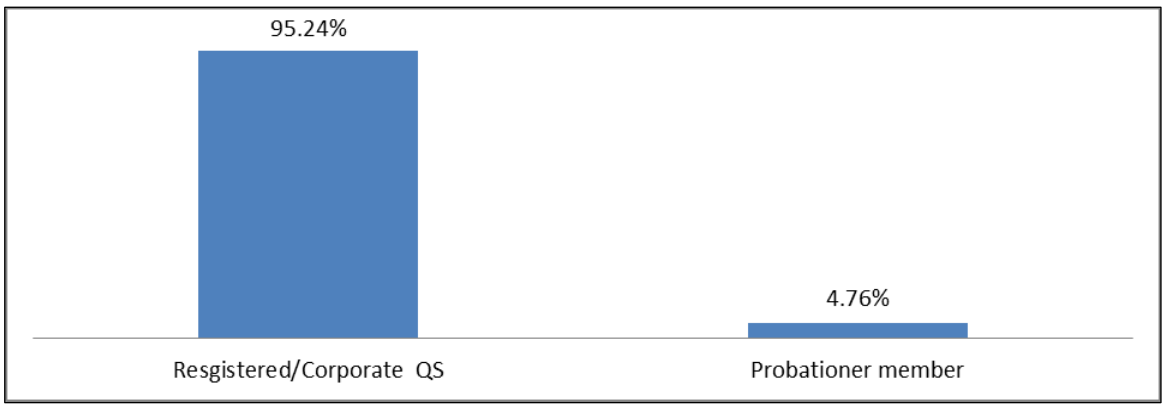

Figure 3 (e): Professional cadre.
Source: Authors, (2023).

IV.2 INVOLVEMENT IN CLAIM MANAGEMENT PROCESS

It can be seen from figure 4, that the participants have been involved in one claim management activity or the other. Interestingly, over 50% of them (i.e., 43(51.19%)) have been involved in the 5 claim management processes. 11(13.10%) of them have been involved in claim presentations, 10 (11.90%) have equally been involved in Documentation and Resolution, and 5(5.95%) have participated in the identification and notification of claims.

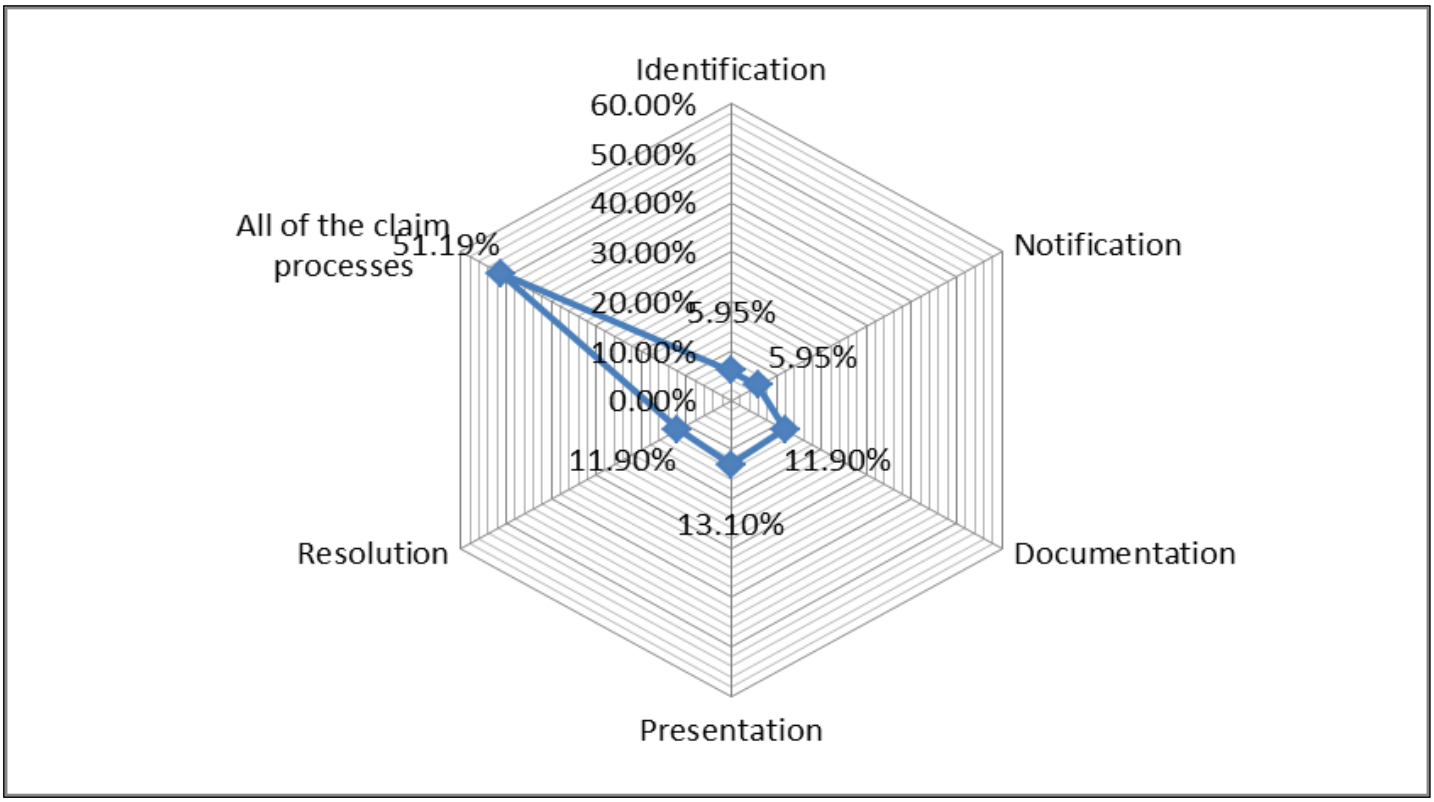

Figure 4: Involvement in claim management processes.
Source: Authors, (2023).

IV.3 CRITICAL CLAIM IN CONSTRUCTION

The results obtained from the analysis of the data collected on major claim types are shown in Table 2. From the table, the most critical claims in construction are payment related claims (mean=4.92; SD=0.2780), contractual claims (mean=4.55; SD=0.8837), change claims (mean=4.54; SD=0.8423), extra work claims (mean=4.43; SD=0.9974), delay claims (mean=4.36; SD=1.1683), and different site condition claims (mean=4.36; SD=1.0826). While the least ranked claims in construction are; loss of profit claims (mean=4.00; SD=1.5288), contract ambiguity claims (4.00; SD=1.4889), and fluctuation claims on construction materials prices (mean=3.94; SD=1.3385).

The assessed claims are all critical in construction regardless of the relative mean weighting of these claim types. This is based on the weight of the maximum mean of 4.92 (98.33%), the minimum mean score of 3.94 (78.81%), and the average mean score of 4.33 (86.50%). The result obtained in this section is in support what have been reported in previous studies [26-28, 29-31]. Delay in payment is the leading cause of claims and disputes in construction projects [30, 26]. Claims related to extras, changes and disparity inside conditions were found to be among the critical claims in construction [31, 27]. These claims, according to [26], are less likely to get resolved by mutual agreement and negotiation; they usually end up in court.

To establish if a significant difference exists between the participants from the public organisations and those from the private organisations, The Mann-Whitney U test was performed, and the significant p-value obtained is greater than the 5% significant level in 12(85.71%) of the variables. This implies the convergence of opinion and ranking patterns of the variables by the respondents. Therefore, no significant difference exists between the participants from the public organisations and those from the private organisations regarding the critical claims in construction. However, 2(14.29%) of the assessed variables show a significant statistical difference as the p-value obtained is less than the 0.05 level of significance. Thus, this implies that the participants' view differs in the way these variables were ranked. The variables are contract termination claims (Z=-4.462; P-value=0.000) and loss of profit claims (Z=-5.228; P-value= 0.000). This divergent view observed could be attributed to the different levels of experience of the participants, and the level of care exercised by the organisations in handling certain types of claims. However, there is need for a further reflection on the contract termination claims and loss of profit claims.

Table 2: Critical claims in construction.

S/N	Major Claims in Construction	Mean	SD	SEM	Rank	Mann-Whitney Test		
						Z	P-value	Decision
1	Payment related Claims	4.92	0.2780	0.0303	1st	-0.778	0.441	Accept
2	Change Claims	4.54	0.8423	0.0919	3rd	-0.696	0.487	Accept
3	Delay Claims	4.36	1.1683	0.1275	5th	-0.984	0.344	Accept
4	Extra work Claims	4.43	0.9974	0.1088	4th	-1.065	0.283	Accept
5	Contractual Claims	4.55	0.8837	0.0964	2nd	-1.718	0.086	Accept
6	The difference in pricing and measuring Claims	4.23	1.1858	0.1294	11th	-0.218	0.827	Accept
7	Different site condition Claims	4.36	1.0826	0.1181	5th	-1.879	0.060	Accept
8	Acceleration Claims	4.33	1.1651	0.1271	8th	-1.208	0.227	Accept
9	Damage Claims	4.32	0.7940	0.0866	9th	-1.006	0.314	Accept
10	Contract termination Claims	4.35	1.0354	0.1130	7th	-4.462	0.000*	Reject
11	Loss of profit Claims	4.00	1.5288	0.1668	12th	-5.228	0.000*	Reject
12	Wrongful Withholding of Deposits Claims	4.24	1.2952	0.1413	10th	-1.610	0.107	Accept
13	Contract ambiguity claims	4.00	1.4889	0.1625	12th	-1.360	0.174	Accept
14	Fluctuation claims on construction materials prices	3.94	1.3385	0.1460	14th	-0.769	0.442	Accept

*p-value (Sig.) <0.05; SEM= standard error mean; SD = standard deviation.

Source: Authors, (2023).

Furthermore, the overall Mann-Whitney U test in Table 3 shows that there is no significant statistical difference between the perception of the quantity surveyors from the public sector organisations and those from the private sector organisations. This is premised on the p-value of 0.219 which is greater than 0.05.

Table 3: Mann-Whitney U Test.

		N	Mean Rank	Sum of Ranks	Z	P-value
Respondents Group	Public organisation	31	32.69	1013.50	-1.518	0.219
	Private organisation	53	48.24	2556.50		
	Total	84				

Source: Authors, (2023).

IV.4 IMPACT OF CONSTRUCTION CLAIMS ON PROJECT DELIVERY

Claims in construction impact the performance of the projects, the data collected on these were analysed and shown in Table 4. The top 5 major impacts of claims in construction project delivery are; delays in project completion (mean=4.93; SD=0.4044), cost overrun (mean=4.73; SD=0.9982), poor quality of work (mean=4.58; SD=0.7947), adversarial relationships among parties (mean=4.44; SD=0.8829), loss of profits (mean=4.42; SD=1.0204), and loss of job opportunities (mean=4.42; SD=1.0437). While the least ranked impact of claims on construction projects are diversion resources (mean=4.11; SD=1.2802), strained relationships (mean=4.11; SD=1.1925), loss and reduction in productivity of labour (mean=4.11; SD=1.3445), wastage and resources escalations (mean=4.11; SD=1.3445) and increase in in supervision and overheads (mean=4.02; SD=1.4477)

Notwithstanding the relative mean scores of these variables, they are a significant impact on claims in construction project delivery. This is premised on the maximum mean score of 4.93 (98.57%) obtained, the minimum mean score of 4.02 (80.48%), and the average mean score of 4.33 (86.68%). The finding in this section support what has been reported in previous studies [26, 31, 35, 23]. The impact of the claim cut across and goes beyond the parties and the projects, their companies suffer too. The project suffers from injurious delays as key deliverables would not meet their planned delivery dates, the entire project will be delayed, and the entire project will experience budget overrun. A larger proportion of the project profits will be lost, the relationship between the parties would be disrupted and derailed, and contractors may not be engaged by the client in future projects [31, 35].

The Mann-Whitney U test carried out to determine whether a significant difference exists between the participants from the

public organisations and those from the private organisations, shows that all the 15 variables have their p-value to be greater than 0.05. This implies that the respondent opinion converged in 100% of the assessed variables. Thus, it can be concluded that there is no significant difference between the perception of the participants from the public organisations and those from the private organisations regarding the impacts of claims in construction.

Table 4: Impact of construction claims on project delivery.

S/N	Impact of construction claims	Mean score	SD	SEM	Rank	Mann-Whitney Test		
						Z	P-value	Decision
1	disruption of the progress of work	4.38	0.9682	0.1056	7th	-1.171	0.242	Accept
2	delays in project completion	4.93	0.4044	0.0441	1st	-1.341	0.180	Accept
3	cost overrun	4.73	0.9982	0.1089	2nd	-0.678	0.431	Accept
4	diversion resources	4.11	1.2802	0.1397	11th	-0.468	0.640	Accept
5	adversarial relationship among parties	4.44	0.8829	0.0963	4th	-1.109	0.275	Accept
6	strained relationships	4.11	1.1925	0.1301	11th	-1.521	0.128	Accept
7	loss of control over the outcome	4.26	1.1629	0.1269	8th	-0.175	0.861	Accept
8	loss and reduction in productivity of labour	4.11	1.3445	0.1467	11th	-0.193	0.847	Accept
9	poor quality of work	4.58	0.7947	0.0867	3rd	-0.810	0.406	Accept
10	loss of profits	4.42	1.0204	0.1113	5th	-1.061	0.277	Accept
11	loss of job opportunities	4.42	1.0437	0.1139	5th	-1.688	0.113	Accept
12	idle equipment and labour	4.21	1.1727	0.1280	9th	-0.592	0.554	Accept
13	wastage and resources escalations	4.11	1.3445	0.1467	11th	-0.193	0.847	Accept
14	extension of equipment cost	4.19	1.1562	0.1262	10th	-1.302	0.193	Accept
15	increase in supervision and overhead	4.02	1.4477	0.1580	15th	-1.361	0.173	Accept

Source: Authors, (2023).

IV.5 RESPONDENTS BACKGROUND DETAILS

Drawing from the major claims described above and the top impacts of claims in construction, figure was developed. It is obvious that the occurrence of claims in construction projects whether it occurred at the design stage, construction stage and/or the operation and maintenance stage, and they harm the success of the projects and the organisations or parties involved. Furthermore, these claims are the major claims in construction that are difficult to resolve, they end up going through more advanced dispute resolution techniques before they are resolved. These impact project performances concerning time, cost, quality, relationships, profits, and jobs as indicated in figure 5.

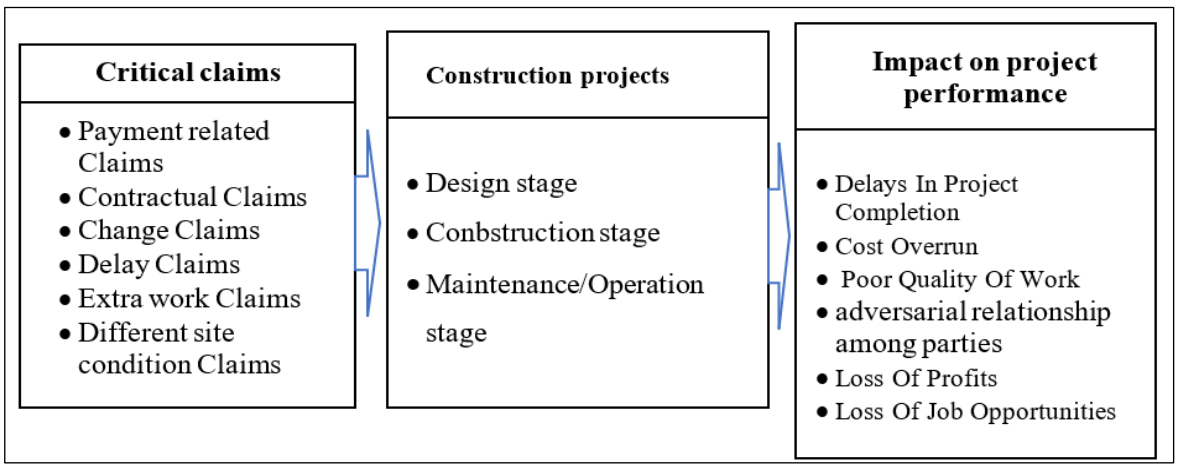

Figure 5: Impact of claims on construction Project.
Source: Authors, (2023).

V. CONCLUSIONS

This study set out to assess the perception of Quantity Surveyors on Critical claims and their impact on construction project delivery in Nigeria. The study utilised a structured questionnaire which was administered by the researchers in the study area using a snow sampling technique. The gathered data were analysed using mean score analysis and the Mann-Whitney U test, results were presented, discussed and a conclusion drawn.

The study found that the critical claims in construction that most times remained unresolved by mere negotiation and understanding between the parties, but most times end up in advance dispute resolution techniques are payment-related claims, contractual claims, change claims, extra work claims, delay claims, and different site condition claims. Also, the major impacts of claims in construction project delivery are delay in project completion, cost overrun, poor quality of work, adversarial relationships among parties, loss of profits, and loss of job opportunities. The perception of the participants from the public and private sector organisations was found to be in convergence, as there was no statistical difference in the view regarding the subject of this study. This was based on the outcome of the Mann-Whitney test.

Payment-related claims such as delay in payments, delay in the approval of payment due, and non-released of retentions, among others, have been blamed for many disputes and crises in the construction sector. Contractual claims, claims for authorised changes and other critical claim types are among the greatest cause of disputes between clients and contractors, and these have been the subject of a lot of litigation cases because they are oftentimes not resolved by the parties using the less expensive means of disputes resolutions. These claims end up being resolved using advanced techniques such as litigations, among others, which are time-consuming, expensive, and even disrupt the relationship that exists between the parties.

Normally, when such claims end in the courtrooms, resolutions or court orders are awarded to the winner and the loser is compelled to obey the order or awards. This could lead to strained and adversarial relationships. Another critical impact of claims in construction are that will delay the completion time of the project. This is true as most times the work would be put on hold while the case is ongoing. Ultimately, more costs will be incurred by the parties, leading to cost overruns. The contractors as well as the client will lose profits because of the extra and unplanned expenses. Workers might be sacked, leading to more job losses. Even the contractors will not get jobs from the clients again. Even when the work continues, quality might be affected, as the contractor struggles to cope with a shortage of funds, among other things.

Effective contract administration and management are all-encompassing. Every item or event that can cause drawbacks to the progress of the work should be avoided. It is the responsibility of the clients and their consultants to ensure that payment certificates, and valuations, among other payment-related matters, are attended to within the time stipulated in the contracts. Sanctioned extras works and changes should be paid for once they are discharged satisfactorily. This is to avoid claims related to changes and extras. Clients engaged-third parties should discharge their work diligently to avoid delays to the main contractor's work. Every source of delay should be avoided and if impossible, should be minimised. This will bring down the number of delay claims. Effective, details and adequate site surveys should be carried out to ensure that site conditions are properly documented and recorded for use by the parties. Quantity Surveyors have as one of their responsibilities to be called upon as expert witnesses in construction disputes; therefore, they should be trained on and be involved in the claim management activities and processes in the construction industry.

The implication of this study is that Contractors would be better informed on the difficult-to-resolved claims that have the most impacts on the project successes, his/her relationships, and organisations. This will enable him to engage experienced and well-equipped construction experts to help manage the projects to ensure that claims events are not traced to contractors' team ineffectiveness. The client should ensure that his representatives are doing their job effectively and efficiently to avoid defaults that will delay the projects and increase his expenses beyond what was planned for at the inception. Clients and their agents have a big role to play if a claim-free construction project is to be achieved. Furthermore, this study adds to the existing body of knowledge on construction claims in developing nations and Nigerian in particular. This study is, however, limited by certain factors such as geographical boundaries, sample size, sampling approach, and analytical method. These imply that care should be taken in generalising the findings. Future work should consider more states, and regions in Nigeria or even other emerging countries. The study should consider the use of interviews, and focus groups, in the coaction of data. This would provide robust data to compare results.

VI. AUTHOR'S CONTRIBUTION

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