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# **Introduction**

Brook (2017) described industry as a very complex industry which deals with huge amount of money from relevant funding firms to finance proposed projects. The industry, which is a key contributor to development of any nation, involves a large no of participants, who need to work together for the successful delivery of the project. The participants mainly include clients, contractors, sub-contractors, suppliers, professional’s such as Architects, Engineers, Engineers, Quantity Surveyors, Planners etc. Due to the complex nature of the environment under which projects are undertaken, disputes are inevitable and may occur at any stage of the project. from the design stage, construction stage or final account stage (Brook, 2017). Disputes occur between the parties to the contractor, usually, client and the contractor. Arcadis (2016) defines a dispute as a situation in which the parties’ perceptions of their contractual rights differ. Patel and Sujal, 2017) argue that in general, most construction projects are not completed within the same parameters as during the time of contract due to diverse factors that affect the project during its duration, e. g unforeseen problems, fluctuations, variations, increment weather etc. Moreover, the disputes are increasing due the construction industry demand. According to Arcadis (2015, there has been a high increase in the length and value of disputes. Moreover, disputes can be very expensive and very involving to the parties. Therefore, there is need for dispute resolution provision in construction contracts in to address disputes This essay discusses the causes of construction projects disputes, the disputes impact to the project, methods of dispute resolution and strategies of minimizing disputes in construction projects.

# **Analysis**

## **Causes of Disputes in Construction Projects**

Disputes arise when one party to the contract breaches the contract. According to Patel and Sujal, 2017), contracts breach may arise due to number of factors, which include claims, delays, non/late payments, late possession of site, variations, ambiguous contractual provisions etc, Khehale and Futane (2015) further argued that in case the client disagrees with a claim that is raised by the other part, there will be difference in the way both parties interpret the claim, which then becomes a dispute as in Figure 1.

A diagram of conflict and conflict

Description automatically generated

**Figure 1: Conflict, Claim and Dispute continuum model**

**Source: (Khehale and Futane, 2015)**

Cakmak and Cakmak (2014) summarized the common causes of disputes in seven groups according to the mode and occurrence nature, namely: 1) owner related which include variations necessitated by the client, scope change, delayed payments and delayed site possession; 2) contractor related, which include delayed progress of work, extension of time, works quality, contractors financial and technical issues; 3) design related which include design errors, design quality, specifications insufficiency and information unavailability; 4) contract related which include risks, contract documents ambiguity and other problems related to the contract; 5) human behavior related: which include cultural conflicts, communication inadequacy and absence of teamwork; 6) Project related which include unforeseen variations and site conditions; 7) external factors which include inclement weather, force Majeure, economic and legal issues as well as the industry’s fragmentation (Cakmak and Cakmak, 2014)..

In a survey conducted in Malaysia, Khan, Liew and Ghazali (2014) concluded that disputes are caused by client’s failure to settle claims brought by the contractor, failure to give the contractor extension of time when applicable and failure to give the contractor access to site on time. In addition to disputes caused by the client, Nyoni and Bonga, 2017) highlighted that delay in progress payment by the owner, delay in approving shop drawings and sample materials, delay in approving design documents by owner, client suspending works on site and conflicts over joint ownership of project can also be a major cause of disputes in construction projects.

According to Teacher (2023), disputes occur due to the uniqueness and complexity of the construction industry involving many participants in all trends as compared to other industries. The author further explained that due to this, disputes occur easily due to changes in plans and quantities by those participants. Moreover, construction works involve items which are hidden beneath the ground, which may not actually be anticipated. Hence, even with the best intention, plans might not work as expected when applied to the actual site which may end up requiring changes in those plans. Apart from change in plans, some causes of disputes might be inclement weather, delays of material delivery and delays in payments.

## **Impacts of Disputes in Construction Projects**

### *General*

According to Arcadis (2016), when construction disputes arise, the parties may find themselves wondering what action to take and argued that disputes damage the relationship between the contractor and the employer. Furthermore, the construction industry in the world is facing the disputes problem and the effects are the consequences that will be faced when disputes take place on the construction projects. The author further argued that disputes have an effect on all stakeholders which may lead to inequitable mode of project delivery. In an ideal world, everything on a construction project would go according to plan, however, that is not what usually happens. Shapi (2023) claims that the impact of construction disputes has led to time overrun, cost overrun, disputes, arbitration and litigation.

Aliento (2020) argued that the main contributing factors to effects of disputes in construction projects are cost and schedule overruns, project delays, affect productivity, impact in contractual business relationships, incorrect designs and incomplete documentation and late authority approvals. Arcadis (2016) emphasized that the global transactional costs for resolving disputes and claims may total $46million or more each year which includes direct and indirect costs to both employers and contractors of the average length of 15.5 months. Moreover, the employer makes a loss by missing out on the potential revenues which he/she might have got from the use of the project and by increased overhead cost for contract administration and the contractor loses as a result of increased overhead costs and lost opportunities for new projects. Delays have significant effect on completion cost and time of building projects (Allen, 2023; Allen, 2016; Arcadis, 2016).

### *Project Delays*

Time delay is a common issue that arises from construction disputes, and which have been studied by few academic researchers (Saif, Rashid and Shakeel, 2014). When there is delay in the delivery of the project, the project is either accelerated or the scheduled time for the completion of the project is extended. The delay will force the completion to be late and claims reimbursement issues between owner and contractor are always tense due to extra cost incurred (Saif et al., 2014). Moreover, the authors argued that construction delays is one of the most commonly known problems in the construction industry and it directly affects the projects’ success in terms of time and quality. According to Kikwasi (2013), the impacts that project delays pose to a construction project as a result of construction disputes are cost overrun of the project and arbitration.

### *Cost and Time Overrun*

The main effect of that may result from a dispute is that the project has the likelihood of suffering from cost and time overrun. The owner may suffer massive loss and worst the project may be abandoned (Thobakgale, Aigbavboa and Thwala, 2014). When a project is completed at a higher cost compared to what was budgeted it has experienced budget overrun (Saif, Rashid and Shakeel, 2014). Moreover, the reason behind cost overrun is overtime cost which a company bears to cover the works undone due to disputes delays When the stipulated contract completion time as agreed by all parties of a project is pushed forward resulting in late delivery because of raised disputes. Cost overruns prevent increase in property and service production from taking place (Mukuka, Aigbavboa and Thwala, 2015).

Alaryan, Elshahat and Dawood (2014) found out that disputes increase the cost of the project both directly and indirectly. These project costs include every cost incurred during the process of resolving disputes as every cost incurred at that process was never included in the project estimate at the first place (Nyoni and Bonga, 2017). Moreover, Alaryan et al. (2014) emphasised that all these extra costs will be added to an already existing estimate, which is regarded as affecting the project cost negatively.

### *Loss of Company Reputation*

Allen (2016) emphasized that incidents happen that can damage the goodwill of an organization and even financially. Furthermore, stakeholder’s trust to the contractor plays a positive role as the contractor will be motivated and execute all works needed to make the success of the project. Due to unresolved disputes stakeholders can terminate contract with their contractor and use a lot money to engage new contractor that will find it hard to be able to continue where the previous ones left. In addition, contractors can suffer because of the project disputes whereby the company will be recommended as poor to other stakeholders (Arar, et al., 2023; Allen, 2016).

### *Diminution of Respect between Parties*

Dispute in the project brings breakdown of relationships between project participants. Thobakgale et al. (2014) believes that disputes in the contruction industry can cause long term damage to the commercial relationship of parties. Disrepectful behaviors affects communication, undermines staff morale, increases staff resignations, absenteesim, creates unhealthy work environment (Thobakgale et al., 2014; Ross, 2011).

### *Reduced Profits*

Ikechukwu, Emoh and Kelvin (2017) argued that the existence of disputes means increasing cost overruns to the contractor which implies loss of profit for non-completion and defamation that could jeopardize their chances of winning further jobs if at fault. Furthermore, increased managerial and administration cost to the client due to disputes means that there are added costs over those which were initially agreed upon, hence less returns on investment. In addition, reover, Miri and Khaksefidi, (2015) provided that the contractor suffers the damage of being kept on a project longer than anticipate due to delays caused by disputes, thereby losing other opportunities of earning profits on other projects.

### *Total Project Abandonment*

Mukuka et al. (2016) argued that disputes in construction projects are likely to lead to the project’s total abandonment, especially where issues are not timeously resolved. They reported that large construction projects are abondoned temporarily and/or permanently due to financial crisis and disputes.

## **Methods of Dispute Resolution in Construction Projects**

### *General*

According to Teacher (2013), the construction industry has made enormous progress in developing more effective means of dispute prevention and resolution over the last two decades, as problems should not be allowed to fester and must be addressed immediately. Alaloul, Hasaniyah and Tayeh (2023) provided that disputes resolution methods are classified into traditional methods and alternative Dispute resolution methods. The author provided the traditional method as litigation (lawsuit action) whereas the Alternative Dispute Resolution (ADR) methods as negotiation, mediation, Conciliation, arbitration, adjudication, and Dispute review Boards (DRB).

On the other hand, Whitfield (2012) cited dispute resolution strategies as either formal and informal, with negotiation, conciliation, mediation and mmediation being the informal dispute resolution strategies, whereas aarbitration and llitigation are the formal dispute resolution techniques. The author further argued that informal dispute resolution strategies strive to bring the parties together to discover a mutually acceptable joint solution, whereas formal dispute resolution techniques just endeavour to find the best solution, regardless of whether it suits the parties. Maiketso and Maritz (2012) emphasized that ADR been adopted as better methods to the litigation due to; use of a facilitator with expert knowledge, more economical in terms of cost, shorter time, flexibility, convenience, privacy, informality and ability for the parties to tailor-make the resolution process.

### *Negotiation*

Whitfield (2012) defines negotiation as the direct or indirect interaction of parties whose interests are different and who cooperate together in order to resolve a dispute between them.According to Towey (2012), negotiation is the most common conflict resolution strategy that does not include a neutral party because it is the first step in the process where parties are urged to resolve their disputes on their own. Furthermore, negotiation is a low-cost procedure that begins at the earliest stages of disputes and is ideal when both parties want to maintain a long-term business relationship because the parties and their negotiators deal face to face in a way that promotes the parties' interests while maintaining the parties' relationship. There should be no fighting or violence during the process.

Towey (2012) argued that negotiation is regarded to be quick and saves both parties money and time because it does not require them to spend more on third-party services; however, if this technique fails to resolve the dispute at hand, it may lead to the use of an Alternative Dispute Resolution method, which involves the use of a third-party As a result, when parties try to settle a dispute through negotiation, there is no guarantee that the process will end in a resolution. Furthermore, the parties and their negotiators reach a resolution of the issue based on the parties' interests in a successful negotiation (Towey, 2012).

### *Mediation*

When negotiation fails, a mediator guides and reviews a dispute that may occur from negotiation or directly if the parties bypass a round of discussion, and it is generally adopted by standard forms of contract when negotiation fails (Towey, 2012). Moreover, mediation helps the parties to solve disputes in a confidential and informal way with the aid of a trained mediator who is neutral. Furthermore, the purpose of this procedure is for the parties to examine the impact of an unresolved conflict on their future business relationship, as well as reflect on the dispute and recognize the harm it has caused. The mediator guides the process by first learning each party's side of the story (position), then presenting them with their differences in an attempt to clearly define the conflict and reach an agreeable conclusion through reconciliation (Towey, 2012).

According to Teacher (2013), even though the mediator does not have the authority to bind the parties, mediation is still preferable to other methods because it is less expensive, allows for discussion in a friendly environment, and allows both parties to try to meet their individual needs without conducting lengthy investigations, thus saving time. To summarize these two non-binding conflict resolution approaches, "negotiation" and "mediation," they are non-binding processes that resolve problems only if the parties agree to a settlement and still wish to maintain a long-term commercial connection (Teacher, 2013).

### *Conciliation*

This technique is comparable to mediation, according to Towey (2012), except that the conciliator directing the procedure is more coercive than a mediator and will present opinions for the parties to consider. This method has been designed in such a way that the personality of the person working as a conciliator has no bearing on the outcome, as it is what distinguishes the parties. Moreover, the parties attempt to resolve their dispute with the help of a third part, the conciliator. The conciliator should be impartial. The process s preferred because it is flexible, confidential, voluntary, and less time consuming (Towey, 2012).

### *Adjudication*

According to Maiketso and Maritz, 2012), an adjudicator is a person appointed by the parties to hear the issues and make a decision. The decision needs to be made as fast as possible so that construction work is not disrupted. It therefore, comes as better than arbitration which disrupts the works continuation. It is economical and shorter than most other methods. It suits disputes involving interim payments, work delay and disruptions.

### *Dispute Review Board (DRB)*

Patel, S. and Patel, A, 2017) provide that the use of DRB is common in the construction industry. It involves the establishment of a Board, at the beginning of the contract, that will handle disputes in case they arise. The board comprise three impartial members, who are respected, who address any dispute that may arise during the execution of the contract. Each party appoints one member and teach party must approve the other party’s choice of member. The boards duties, responsibility and powers are spelt out before the commencement of the contract. The method is informal and generally less expensive and does not disrupt the workflow. Th process, therefore, is cost and time saving and reduces legal fees. The client can ask for a hearing of a dispute to the DRB as soon as the issue in not resolved amicably.

Teacher (2023) argued that, because it is impossible to complete a large construction project without a dispute arising between the parties, it is recommended that a DRB be created not only help resolve disputes, but also to prevent them from arising in the first place. The author argues that, for many years, the construction sector has used Dispute Resolution Boards.

### *Arbitration*

According to Whitfield (2012), arbitration is the earliest type of Alternative Dispute Resolution (ADR), and it occurs when willing parties agree to have a third-party (neutral) decide a dispute with a binding resolution. Arcadis (2016) defines arbitation as the submission of a disputed matter for decision to an impartial person, referred to as “the arbitrator”. Finsen (2016) defined arbitration as a free and willing procedure in which the parties agree to submit their disagreement to the unbiased judgment of a third party (an arbitrator) of their choice rather than litigating it in court. When choosing an arbitrator, a party needs to sure that the arbitrator is completely impartial, with no vested interest in the issues or in either party (Whitfield, 2012). Parties are generally encouraged to choose someone over the age of 18, who is knowledgeable about the technical aspects of the dispute and thus understands the issues and can be trusted to make an informed decision (Finsen, 2016).

Arbitration has various advantages over litigation since the process is highly flexible and may be tailored to the specific needs of the circumstance and the parties' convenience (Finsen, 2016). Finsen (2016) went on to say that arbitration is less expensive and that it is a private matter, thus there is no negative media attention resulting from the processes (Finsen, 2016).

### *Litigation*

Ashworth, Hogg, and Higgs (2013) defined litigation as a conflict resolution mechanism that takes place in the courts and involves third parties who are skilled in the law, typically solicitors and barristers, as well as a judge chosen by the courts. Finsen (2016) argued that litigation process occurs when two contracting parties have a disagreement and are unable to resolve it between themselves, so they turn to the court for help. Furthermore, the party that believes they have a claim against the other issues a summons to the other through a court of relevant jurisdiction to compel the other to appear in court and defend themselves against the first party's claim. The author further provided that the court will then determine if the claim is legal, and if so, it will issue an order compelling the opposing party to honor the claim. The other party usually honors the claim by paying a quantity of money, and once the claim is decided, it is final and binding, thus it cannot be (Finsen, 2016).

Litigation offers advantages over arbitration because courts resolve disputes based on law and precedent, rather than a mutually advantageous and equitable outcome for both parties (Whitfield, 2012). Moreover, Towey (2012) argued that, with litigation, the matters are handled by professionally trained legal experts who are neutral and use case law for guidance, thereby providing a fair outcome legally. To this effect, the decision given by the legal experts is legally binding unless there is a successful appeal from high courts.

Litigation, like any other strategy, has its drawbacks. It is frequently costly, and the procedure can take a long time before the issue is completely resolved (Ashworth et al, 2013). Because the lawsuit is public, it may attract the attention of the press and media, which parties may not prefer in order to protect their corporate image, regardless of the legal conclusion (Towey, 2012). Furthermore, the business connection between the parties is frequently harmed because the court's decision favors one side over the other, making future business relationships difficult.

Finsen (2016) argued that resolving disputes through litigation is often ineffective because construction disputes frequently involve technical issues about which the presiding judge is unaware, necessitating the use of expert witnesses to explain the technical issues to the court and express an expert opinion on them. Towey (2012) emphasized that, unlike other forms of dispute settlement, litigation is a win-or-lose situation with no middle ground.

## **Ways to Minimize Disputes in Construction Projects**

### General

Major building projects are famous for provoking disagreements and arguments, which could lead to claims. Any project participant, including clients, architects, engineers, contractors, and subcontractors, has the right to file a dispute. If an organization believes that fulfilling a specific commitment has been hampered, it will eventually result in a disagreement if it is not appropriately managed (Wharton, 2019).

There are several methods that can be utilized to lessen the chances of a construction dispute occurring.

### *Include late payment costs in your payment conditions.*

According to Aliento (2020), the contractor needs to include a late payment fee on the building contract as one technique to ensure payment for his work. Furthermore, the contractor should state this at the commencement of the contract. Some include a penalty of at least 2% if payment is not made within 30 calendar days or 3% if payment if is not made within 60 calendar days, and so on. The the agreement must be mutual, Furthermore, the owner’s financial problems affect project progress and quality, therefore, this problem could be minimized by a project cash flow which is planned and reviewed properly (Aliento, 2020).

### *Minimizing variations*

Wharton (2019) stated that in order to have a successful management of the project for private projects, a report system should be established between; the client, consultant, and contractors. Furthermore, in order to avoid disputes in publicly funded projects, an oversight committee should be established to evaluate projects based on timelines, budgetary allocation and changes in scope or design. Establishment of cost control systems to ensure correct recording of each project's expenses from start to finish and timely reporting, as well as monitoring every project expenditure regardless of project size as the most efficient means of decreasing variation (Wharton, 2019).

### *Use construction contract drafting as a risk management tool and proper design.*

Love et al. (2014) argued that the purpose of a construction contract is to specify all parties' expectations in order to ensure that their aims are realized, as well as to address how unforeseen situations will be handled. Hence, dispute resolution techniques to be used in the contract need to be clearly spelt out. The authors further suggested the incorporation of specialists in planning, designing, management of project, oversight, quality control and budgeting all as some ways to deal with design error and omission. Furthermore, these methods can be able to depict any error in quantities or unit rates of the design giving the contractor a good estimate of the project which will reduce any chance of having misunderstandings throughout the lifecycle of the project (Love et al, 2014).

### *Visitation to site before designing* *and increased investment*

According to Atherton (2020), many designs are founded on the idea that construction locations have level topography, as a result, many designs are crafted on that assumption. This unethical approach should be avoided because it has resulted in numerous design issues, including litigation, delays, cost overruns, and waste, among other things. Moreover, because of the amount of money spent on design, there is a multiplier effect. He further states that early design investments will pay off tremendously and help to cover up design costs and he is of the view that reduced design investment will almost likely increase out-of-pocket costs and will have negative technical consequences, resulting in even higher costs or legal disputes.

### *Clear coordination (delegation of responsibilities and teamwork)*

Love et al. (2014) argued that, working in a collaborative environment allows for team approach to getting things done correctly Everyone in the team does their utmost to assist others in carrying out their obligations and is honest about areas where they are having difficulty (Atherton, 2020). Furthermore, in recent years, one such approach, partnership, has grown in favor. It entails an additional contractual understanding among all parties to form a sort of partnership in order to achieve mutually agreed-upon goals and objectives while minimizing conflicts and claims. This agreement is frequently made through a partnering workshop, in which all stakeholders agree to take specific actions to collaborate, equitably assign risk and responsibilities, and recognize their shared aim of a successful project. Moreover, although partnering may involve more labor and effort at first, the benefits can be tremendous, resulting in a more harmonic, less combative process and, at the end of the day, a successful project free of errors (Atherton, 2020; Love et al., 2014).

### *Clearly define the scope*

According to Wharton (2019), defining project scope in a detailed and unambiguous manner will increase accuracy in bidding, cost and time estimates, as well as fewer changes to the scope of the project throughout construction. Atherton (2020) underlines the importance of taking extra precautions from the start to ensure that the parties' agreed-upon scope of activity is documented in the contract. Moreover, project scope is crucial for the project's deliverability since it identifies the project's clear goals and deliverables, provides a better understanding of the job, aids in decision making, and aids in construction work control.

### *Allocating fair contract risk*

Okuntade (2014) suggested that unfair risk shifting, or transferring full responsibility to a party who is not even most to control risk, can require that party to devote time and effort to figuring out how to merely simply survive in the project, sometimes to the project's disadvantage. Furthermore, many construction industry experts are turning to a system that fairly distributes risk among all parties involved, including the architect/engineer, the owner, the contractor, and the subcontractor, as the costs and risks of construction continue to climb (Peansupap and Cheang, 2015). Fairness is a confusing concept, but the goal here is to distribute risk to the side that can best manage it. An equitable contract is the first step toward facilitating cooperation and close coordination among project participants, as well as laying a solid foundation for resolving unavoidable conflicts before they turn into controversial claims that cause havoc on the construction schedule and budget (Peansupap and Cheang, 2015).

# **Conclusion**

Construction dispute resolution is an important part of the construction process. It is a complex process, involving a wide range of stakeholders and a variety of different dispute resolution mechanisms. Recent trends have focused on the use of technology to improve the process, as well as the use of international dispute resolution mechanisms for mega-projects. It is clear that construction dispute resolution is an important and evolving field, and one that should be given due consideration in the construction industry. There has been an increase in the use of international dispute resolution mechanisms in the construction industry. This is especially true in the case of mega-projects, which often involve parties from different countries. International arbitration and mediation are two of the most common forms of dispute resolution in this context. Moreover, due to the emergence of dispute resolution processes, there has been an increase in the Alternative Dispute resolution (ADR), all aimed at avoiding litigation, which is costly and time consuming. Therefore, there is need for improved contract management training to professionals in the construction industry for better drafting and understanding of the construction contract.

# **References**

Alaloul, W., Hasaniyah, M. and Tayeh, B. (2023, 11 07). *A comprehensive Review of Ddisputes Prevention and Resolution in Construction Projects.* Retrieved from ResearchGate: https://www.researchgate.net/publication/331283227\_A\_comprehensive\_review\_of\_disputes\_prevention\_and\_resolution\_in\_construction\_projects

Alaryan, A., Elshahat, A., and Dawood, M. (2014). Causes and Effects of Change Orders on Construction Projects in Kuwait. *Journal of Engineering Research and Applications, 4 (7)* , 01-08 .

Aliento, W. (2020, 06 22). *The Most Common Causes of Construction Disputes – And How to Deal With Them*. Retrieved from JOBSITE: https://www.procore.com/jobsite/the-most-common-causes-of-construction-disputes-and-how-to-deal-with-them

Alkhathani, M. (2004). *Examination of the correlation of critical success and success factors in construction projects.* Saudi Arabia: Pittsburgh University.

Allen, M. (2016). Global Construction Disputes Report. ARCADIS.

Allen, M. (2023, 11 06). Global Construction Disputes Report 2016. Retrieved from https://www.google.com/search?q=Arcadis.+(2015).+Global+Construction+Disputes+Report+2015.+Retrieved+February+9%2C+Victor+O.+Schinnerer+%26+Company%2C+Inc.&rlz=1C1KNTJ\_enBW1082BW1082&oq=Arcadis.+(2015).+Global+Construction+Disputes+Report+2015.+Retrieved+: https://www.google.com/search?q=Global+Construction+Disputes+Report+2015&rlz=1C1KNTJ\_enBW1082BW1082&oq=Global+Construction+Disputes+Report+2015&gs\_lcrp=EgZjaHJvbWUyBggAEEUYOTIGCAEQRRg80gEHOTM1ajBqOagCALACAA&sourceid=chrome&ie=UTF-8#ip=1

Arar, A., Papineau, C. and Poirier, E. . (2023). An empirical evaluation of the causes leading to binding dispute resolution mechanisms in the Quebec construction industry. *International Journal of Construction Management, DOI: 10.1080/15623599.2022.2159632*, Ahmad J. Arar, Christine Papineau & Erik Poirier (2023).

Arcadis. (2016). Global Construction Disputes Report.

Ashworth, A., Hogg, K. and Higgs, C. (2013). *Willi’s Practice and Procedure for the Quantity Surveyor. Thirteenth Edition.* New Jersey: John Wiley & Sons.

Atherton, A. (2020, January 27). Tips, tools and strategies for effective delivery of projects. *Minimizing construction disputes*.

Brook, M. (2004). *Estimating and Tendering for Construction Work.* Amsterdam: Elsevier Ltd.

Brook, M. (2017). *Estimating and Tendering for Construction Work.* New York: Routledge Press.

Cakmak, E., and Cakmak, P. (2014). An analysis of causes of disputes in the construction industry using analytical network process. Procedia - Social and Behavioral Sciences, . 183-187.

Cartlidge, D. (2009). *Quantity Surveyors Pocket Book.* Amsterdam: Elsevier Press.

Cartlidge, D. (2011). *New Aspects of Quantity Surveying Practice.* London: Son Press.

Ekhator, J. O. (2016). How to minimize disputes in the construction industry. *IDENTIFYING STRATEGIES FOR PREVENTING DISPUTES IN BUILDING CONSTRUCTION PROJECTS IN NIGERIA*.

Finsen, E. (2016). *The Building Contract.* Claremont:: Juta.

Ikechukwu, A., Emoh, F. and Kelvin, O. (2017). Causes and Effects of Cost Overruns in Public Building Construction Projects Delivery, In Imo State, Nigeria. *IOSR Journal of Business and Management (IOSR-JBM), 19 (7)*, 13-20.

Khan, R., Liew, M., and Ghazali, Z. (2014). Malaysian constryction sector And Malaysian Vision 2020. *Social and Behavioural Sciences, 507-513*, 507-513.

Khehale, C. and Futane, N. (2015). Causes of construction disputes. Management of claims and disputes in the construction Industry Impact factor 4 (5). *International Journal of Science and Research (IJSR) 4 (5)*, 848-856.

Kikwasi, G. (2013). Causes and Effects of Delays and Disruptions in Construction Projects in Tanzania. *Australian Journal of Construction Econonmcs and Building*, 52-59.

Loke, Y. (2013). A Study of Causes and Effects of Conflict in the Construction Industry, Malaysia.

Love, P., Davis, P., Ellis, J. and Cheung, S. (2014). A systematic view of dispute causation. *International Journal of Managing Projects in Business, 3 (4)*, 661-680.

Maiketso, N and Maritz. M. (2012). Adjudication as an alternative dispute resolution method in the South African construction industry Adjudication as an alternative dispute resolution met. *Journal of the South African Institution of Civil Engineering, 54 (2)*, 65-70.

Miri, M. and Khaksefidi, M. (2015). Cost Management in Construction Projects: Rework and Its Effects, 6 (6) s6. *Mediterranean Journal of Social Sciences*, 209-215.

Mukuka, M., Aigbavboa, C. and Thwala, W. (2016). Effects of construction projects schedule overruns: A case of the Gauteng Province, South Africa. *6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015) and the Affiliated Conferences, AHFE 2015* (pp. 1690-1695). Johannesburg: Elsevier.

Nyoni, T., and Bonga, W. (2017). Towards Factors Affecting Delays in Construction Projects: A Case of Zimbabwe. *Journal of Economics and Finance*, 12-28.

Okuntade, T. (2014). Causes and Effects of Conflicts in the Nigerian Construction Industry. *Internal Journal of Technology Enhancements and Emerging Engineering Research 2 (6)* , 7-16.

Patel, S and Sujal, A. (2017). Journal of Emerging Technologies and Innovative Research (JETIR), 4 (04). *Dispute Resolution in Construction Industry* , 374- 378.

Patel, S. and Patel, A. (2017 ). Dispute Resolution in Construction Industry. *Journal of Emerging Technologies and Innovative Research (JETIR), 4(4)*, 374-378.

Peansupap, V. and Cheang, L. (2015). Identifying issues of change leading to cost conflicts: Case study in Cambodia. *Creative Conference 21-24* (pp. 285-290). 21-24 June 2015: Krakon. Poland.

Rauzana, A. C. (2016). Causes of Conflicts and Disputes in Construction Projects. Mechanical and civil engineering. *IOSR Journal of Mechanical and Civil Engineering, 13*, 44-48.

Ross, A. and Williams, P. (2013). *Financial Management in Construction Contracting. First Edition.* New Jersey: John Wiley & Sons.

Ross, S. (2011, January 25). Impacts of negative behavior on construction process. *Perceived Lack of Respect Seen as Cause of Employee Defiance*. Los Angels Times.

Ross, S. (2011, 01 25). Impacts of negative behavior on construction process. Perceived Lack of Respect Seen as Cause of Employee Defiance. *Los Angels Times*. Los Angeles: California Times.

Saif, U., Rashid, Y. and Shakeel, A. . (2014). How project delays,cost and time overrun affect construction projects. Effects of Delay in construction Projects of Punjab-Pakistan. *An Empirical Study*, 99-100.

Shapi, B. (2023, 11 08). *Dispute Resolution Procedure a Must Know.* Retrieved from Daily News: https://dailynews.gov.bw/news-detail/9458

Teacher. (2023, 11 05). *Disputes can have serious implication in construction project*. Retrieved from LawTeacher: https://www.lawteacher.net

Thobakgale, M.., Aigbavboa, C. and Thwala, W. (2014). Professional’s Perception on the Causes and Effects of Disputes in the Construction Industry – A Theoretical Exploration. *6th International Conference on Humanities, Geography and Economics* (pp. 135-137 ). Cape Town: 6th International Conference on Humanities, Geography and Economics.

Towey, D. (2012). *Construction Quantity Surveying.* UK: Wiley-Blackwel.

Trowey, D. (2013). *Cost Management of Construction Projects. First Edition .* New Jersey: John Wiley & Sons.

Wharton, D. (2019, October 18). How to minimize construction disputes. *BEST PRACTICES: HOW TO MINIMIZE CONSTRUCTION CLAIMS*.

Whitfield, J. (2012). *Conflicts in Construction.* UK: Wiley-Blackwel.