

An Assessment of Disputes Resolution Mechanisms in Road Construction Projects in Tanzania

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Abstract: Over the years, Tanzania National Roads Agency (TANROADS) has been facing a number of disputes, some of them ending in judicial courts. The reasons for disputes are partly due to having improper handling of project disputes by TANROADS and contractors as caused by both of them having inexperienced technical staff and in part due to having improper framework or having ineffective guidelines on how to handle such conflicts. To determine the extent of the above problems, it was vital to carry out a study by consulting key stakeholders through interviews in form of questionnaires and by case studies of disputed projects in TANROADS. In this regard, factors that cause disputes in the road construction industry were listed down and grouped into four clusters, namely: technical, contractual obligation, managerial and administrative, country laws and political. The current mechanisms to resolve conflicts in road construction were found to include; amicable settlement, adjudication, mediation, expert determination, neutral evaluation, conciliation, mediation, arbitration and litigation. However, these mechanisms have been inefficient, ineffective and lacking guiding framework to resolve such conflicts. Pursuant to the above, it was recommended that contracting parties need to establish the Dispute Review Board (DRB) similar to that used in UK and USA after signing the contract. Members of DRB shall be appointed by the contracting parties and approved by the National Construction Council (NCC). DRB members will be nominated from areas of specialization such as contract management and administration, engineering, procurement, law and finance. DRB members should have adequate qualification, experience, and technical know – how. It is expected that the Board will assist in resolving the disputes speedily and cost virtually exclusive of the necessity for arbitration or judicial courts. This can be achieved by enabling close communication and friendly settlement encouragement of controversial project related issues at the execution level before they become disputes.

Keywords: Factors, Mechanisms, Disputes, Resolution

1. Introduction

1.1. Background

The road construction sector in Tanzania is essential to the country's socio-economic development as it embraces important areas of the economy such as trade, tourism, agricultural, mining, and industry by providing transportation systems. This in turn, facilitates communication and interaction of different sectors of the economy in line with Vision 2025 [1]. In addition, the sector promotes access to social services such as schools, hospitals, and recreation. Over the years, the Government has been investing most of its

resources in the road construction sector through the Ministry of Works and Transport (MoWT) as managed by TANROADS-the Executive Agency under the Ministry.

Given the voluminous work in the road construction industry that requires prolonged duration of execution and involves huge amounts of funding, TANROADS has been experiencing a number of conflicts. However, there have no exhaustive studies that have been carried out to determine causes of disputes, their impacts and the effectiveness of available dispute mechanisms in the road construction industry apart from a study by Ntiyakunze who concentrated his study on disputes on the building construction sector [2]. In his study, Ntiyakunze showed that contractual

incompleteness, consequent post-contract adjustment, and opportunistic behaviour were among the factors responsible for the disputes in building construction projects.

Realistically, the road sector involves a vast number of different professions and non-skillful personnel to complete project activities as well as contractual management of the project and cannot be compared to the building sector. This is because the building construction sector involves a few numbers of professions and non-skillful personnel that are involved in the project activities. Thus, due to its complexity and uniqueness, the road construction sector requires experienced, knowledgeable, and skillful personnel, including massive funding and a long time-line to handle contractual matters than that in the building construction sector. Consequently, there are more disputes in the road construction sector than in the building construction sector.

In many occasions, TANROADS has been facing a number of disputes, with some of them ending in judicial courts. The reasons for disputes are partly due to having improper handling of project disputes by TANROADS personnel and in part due to the lack of framework or ineffective guidelines on how to handle conflicts in road construction projects in Tanzania. Conventionally, the International Federation of Consulting Engineers (FIDIC) and Public Procurement Regulatory Authority (PPRA) conditions have been used as a guideline for TANROADS professionals in resolving disputes in the road construction industry. These conditions are usually included in the contract documents and provide guidance on how to resolve disputes between the contracting parties. The National Construction Council (NCC) of Tanzania offers advisory services and technical assistance to construction industry stakeholders on all matters related to the construction industry, such as the settlement of disputes when arising among the contracting parties, through Adjudicators and Mediators. Thus, there are no holistic dispute settlement mechanisms to settle conflicts in Tanzania's road construction projects.

This study therefore concentrates at setting up an effective resolution mechanism that TANROADS shall use to prevent/settle disputes in road projects during the execution of its works. This is likely to save time, funds and enhance value for money for road construction projects.

1.2. Research Methodology

The research methodology entailed extensive global, regional and national literature review with regard to factors that cause disputes in the road construction sector and effective means or guiding frameworks of resolving the said disputes. This was followed up carrying out field studies to a selected preferred sample of key stakeholders involved in the road construction sector.

Given the fact that selected individuals from the population had comparable perceptions as the rest of the participants, random sampling and purposive sampling techniques were deemed to be the most effective and efficient. The following formulae were used to calculate the desired sample size for this study scientifically:

$$m = \frac{Z^2 * p * (1-p)}{E^2} \quad (1)$$

$$n = \frac{m}{1 + \left(\frac{m-1}{N}\right)} \quad (2)$$

Where:

m = Sample size of the unlimited population

N = Sample size from the limited population

Z = Value representing the confidence level

P = Degree of contrast between the targeted sample size

E = Choice for point of maximum error

The value of (m) and (n) were determined by using the equation (1) and (2) respectively by using confidence level of 95% and level of significant at 5%. It was assumed that the sample size was unknown. Therefore, the value of (m) and (n) were calculated as follows:

$$m = \frac{1.96^2 * 0.5 * (1-0.5)}{0.05^2} \approx 385$$

$$n = \frac{385}{1 + \left(\frac{385-1}{80}\right)} \approx 65$$

Primary data were obtained through questionnaires. Quantitative data were obtained from road construction professionals from clients, consultants, contractors, government authorities, and other stakeholders deemed to be involved in the road construction industry. It is worth noting that the selection of key stakeholders was carried out so as to ensure relevant and accurate data are obtained from participants who are familiar with road projects and have a clear understanding of the contract management procedures and regulations at hand. Based on the sample size of this study, 65 questionnaires were distributed to experts for each targeted group. However, out of 65 questionnaires sent to different stakeholders, 60 questionnaires were successfully returned.

The secondary data or the literature review and various case studies involved a review of various documents with regard to dispute resolution mechanisms both at national, regional and global levels. At national level various documents such as government policies, type of contracts used in road construction projects and other related documents were reviewed while at regional and global levels document related to disputes in construction industrial such as frameworks or guidelines used. Also, the review included dispute mechanisms used to resolve conflicts. In addition, written contents, local government rules, government policies, official government circulars with regard issues in road construction disputes, journal articles, books, and other related papers were included in the documentation. Nonetheless, due to the nature of the study, it was also necessary to obtain other important secondary data from TANROADS, particularly from projects that had been in courts for arbitration or undergone other dispute mechanisms in the past ten (10) years. This was aimed at finding the trend of causes of road construction project disputes and their respective solutions.

The data was processed and analyzed using Statistical Package for the Social Sciences (SPSS) software and the Relative Importance Index (RII). The following was how the

Relative Importance Index (RII) was calculated:

$$RII = \frac{\sum W}{(A*N)} \quad (0 \leq RII \leq 1) \quad (3)$$

Where:

W – Is the weight given to each factor;

A – Is the highest weight and;

N – Is the total number of respondents

Findings from the field survey together with literature review provided the main sources of inputs into the formulation of the framework that shall resolve such conflicts. Consequently, it was possible to formulate an effective and efficient mechanism that would not require the necessity for arbitration or judicial courts.

2. Literature Review

2.1. An Overview of Project Disputes in the Project Management Cycle

Like any other contracted project in the road construction industry, disputes materialize from different project life-cycle phases, as shown in Figure 1. Each stage has its purpose, characteristics, and critical decision points, such as proceeding, cancel and revising (scope, cost, quality, and schedule). One or more project documents must be created to complete the assignment [3]. Experiences have shown that disputes occur during the implementation of each phase. However, most construction disputes arise during the implementation and monitoring phase or construction phase [4]. Furthermore, road construction projects are associated with a number of risks on the type of contract such as traditional build contract; design and build contracts; engineering procurement and construct contract; cost-reimbursable contract and lump-sum price contracts. Also, risks depend on the type of projects in terms of funding agencies, whether local or foreign, and type of partnership, i.e., Public-Private Partnership (PPP).

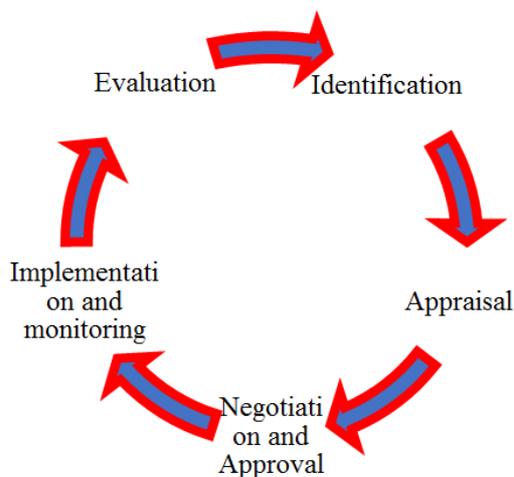


Figure 1. Generic Project Management Cycle.

Due to the potentially large number of individuals involved in the construction process and their varying organizational

priorities and objectives, the potential for variation, external influences, changed circumstances, and varied expectations, all pave the way for potential miscommunication, confusion, and eventually conflicts. Any dispute resolution mechanism has various potential consequences, and the outcomes depend on responses to the problem [5]. Figure 2 shows the dispute resolution schedule.



Figure 2. Dispute Resolution Schedule.

The majority of the project schedules are "tight," such that the project must be completed before the contractual agreed/signed date. A recovery plan is usually agreed upon and enforced due to time limit and other work pressures. While this is achieved in various ways, a typical solution is either to increase the number of personnel or overtime. There is an inherent risk to this transition, but there is usually no time to investigate this carefully. The pressure to "pick up" the production still exists and can lead to corner cuts or additional staff hazards. Reacting to the demands of increased operation and the need for more attention to security may lead to a possible dispute, which must be addressed in a manner that takes account of both problems and seeks an effective solution for all.

2.2. Factors That Cause Disputes in the Road Construction Industry

There are five main factors found to be the source of disputes in road construction projects during the project management cycle including: design/consultant related factors, contractors, employers, contract administration, and external factors.

Design/consultant Related Factors: Studies by Ejohwomu, et al showed that design/consultant related factors to disputes were the most common factors which cause delays and the substantial increase in materials resulting into additional costs to road construction projects [6]. The said factors can cause increased financial claims from the contractor leading to disputes [7]. [8] in its study on design-related factors revealed that lack or incomplete design information or clear employers' requirements during the design phase are the sources of conflicts during the implementation and monitoring of road construction projects. Bvumbwe and Thwala in their study on

design-related dispute factors, submitted that the leading causes of disputes were summarized as incomplete designs, underestimation of quantities of the bill of quantity items, poor planning and poor budget estimate [9]. Other previous studies, by Mante et al have shown that disputes may arise between the consultant and the employer due to poor design or unsatisfactory consultancy services [10].

The Contractor's Related factors: These are caused by the following: delays in completion of the project, time extensions, financial failure due to poor management of funds, underpricing tender, technically inadequate, poor quality of works [11]. Bvumbwe and Twala revealed that disputes in the construction projects might be triggered by poor quality, delay of completion due to contractors faulty, and poor keeping of contemporary records to enable the consultant to evaluate the submitted claims [9]. According to Mawenya, it is important that contracting parties ensure conflicts are reduced or prevented to enhance value for money, maintain client relationships, reputations, and promote harmony to work [12].

The employer's related factors: The employer's related factors which may turn into a dispute are due to delayed payment of Interim Payment Certificates to the contractor, delay of site possession due to unavailability of the working corridor, employer's variations and change of scope of works [13, 14]. Also, Bvumbwe and Twala proclaimed that disputes occur due to the employer's failure to settle claims raised by the contractor on time, claims due to an extension of time and variation due to instruction for changing scope of the works [9].

Contract Administration Factors: It is worth noting that appropriate approach fairness of contract administration and contract management in road construction projects can reduce risks associated with disputes. Previous workers' experiences have shown that substantial conflicts are a result of improper management and poor contract administration by the consultant [15, 16]. This is due to most consultant firms having inadequate contract management knowledge and skills to administer the projects in resolving contractual matters using stipulated regulations [17]. In truth, the consultant always safeguards the employer's interests while addressing the project's conflicts or while assessing claims submitted by the contractor that might result in disputes [18]. Aryal et al stated that the consultant's improper allocation of risks and lack of risks management is also considered a critical underlying factor that leads to disputes in contract-related factors [19].

The report by Arcadis Consulting Company showed that poor contract administration is the common cause of disputes [8]. The report went further to identify five sub-factors that may cause disputes caused by poor contract administration and include; failure by the consultant to properly administer the contract, poorly draft or submit incomplete or unsubstantiated claims, errors, or/and omission in the contract documents. The study went further to indicate that in Asia, United Kingdom, Europe and the Middle East, the common cause of disputes was caused by the consultant's failure to administer the contract properly. Khekale et al revealed that

enormous contractual conflicts arise from incapacities of interpreting the consultants' contract provisions, such as provisions related to the suspension of works, natural disasters, and force majeure [14].

External factors: These are factors involve issues beyond the control of a human capacity, such as weather conditions like force majeure such as strong winds, heavy rainfall beyond the average in the vicinity area, storms, earthquakes, wars, and political frustrations. Ejohwom et al reported disputes caused by external factors are such as weather conditions, legal and economic securities, and the sector's fragmented structure in the construction industry [6].

2.3. Mechanisms for Resolving Disputes

2.3.1. At National Level

Experiences have shown that so far there are no reliable dispute resolution guidelines within TANROADS specifically for resolving the ever-increasing number of disputes in road construction projects. Nevertheless, FIDIC's and PPRA's contract conditions have been used as a guideline for TANROADS when preparing procedures to include in the contract documents. Sub-clause 20.4 to 20.8 of GCC (Harmonized FIDIC) describes the procedures to be followed by the contractors if they consider that they are entitled to any claim under any clause in the contract methods as disputes arise [20]. The dispute resolution mechanisms described in the FIDIC documents include disputes board (DB), amicable settlement and arbitration. However, under Sub-clause 30.1 to 30.4 of GCC (PPRA's condition of contract for Medium and Large Works), the sub-clause describes the disputes resolution procedures [21]. Further, as adopted by most contracts, the contract's condition direct that for unsolved dispute through negotiation should be referred to the adjudicator who is usually appointed by NCC. If either party disagrees with the adjudicator's decision, they supposed to refer the matter to arbitration. Regardless of these mechanisms, a good number of the disputes at TANROADS have been ending up in judicial courts.

2.3.2. At Regional Level

In the Ethiopia-Somali Regional Roads Construction Industries, the current resolution mechanisms used to resolve disputes are Negotiation, Dispute resolution, Ethics, and Litigation/Arbitration [11]. In his study Getahun asserted that the amicable settlement is the mostly used dispute resolution mechanisms in Ethiopia- Somalia regional [11]. The study concluded that arbitration is the last stage in dispute management which is recommended. At this stage, conflicts between the contracting parties cannot be settled or resolved through negotiation if they had already conveyed the matter to arbitration. However, Mosisa et al in their study of the effectiveness of dispute review experts (DRE) practice in Ethiopian Federal Road Projects, reported that dispute review experts resolved about 97.62% of disputes [22]. Olele showed that the resolution mechanisms accepted for the construction industry in Nigeria are adjudication as it is relatively cheap compared to other mechanisms and may not need any input

from lawyers who consumes lots of money and also relative fast than litigation or arbitration [23]. Nevertheless, for the cases which already reported to judicial courts, such claims are usually directed to the alternative dispute resolution panel. Bvumbwe and Twala revealed that dispute resolution mechanisms used in South Africa are adjudication, mediation, and arbitration [9]. In their research, Bvumbwe and Twala went further to report that the best practice for resolving disputes in the local construction industry is the alternative dispute resolutions which is similar to Dispute Review Board (DRB) used in United Kingdom (UK) and United State of America (USA) as it involves appointing knowledgeable and skillful arbitrators, mediators, and adjudicators.

Olivera concluded that in accordance with Section (34) of the constitution of the Republic of South Africa (1996), the system allows the dispute to be addressed by a public hearing before to judicial court, of which alternative dispute resolution (ADR) mechanisms are included in the general condition of the contract [24]. ADR mechanisms such as amicable settlement, mediation, dispute board, neutral evaluation, and arbitration have been emphasized in the Kingdom of Bahrain to resolve disputes in the Construction Industry [18]. ADR minimizes the cost of dispute resolutions and prolonged impacts in the construction industry. Further to that, the study recommended implementing legislation for regulating professions in the country's construction industry could help the country reduce unnecessary disputes. Apart from legislation implementation, the study suggested forming a specialized construction dispute chamber that will deal with contractual matters and resolve them.

2.3.3. At Global Level

A study by Arcadis Consulting Company showed that dispute resolution mechanisms in North American, Asia, Middle East, and Europe are negotiation, mediation, and arbitration, while in the United Kingdom are negotiations, mediation, and adjudication are the mostly used dispute resolution mechanisms [8]. However, this study remarked that adjudication or alternative dispute resolution in some countries provides solutions that the contracting parties do not accept. Further, the study advised that in order to minimize and avoid disputes, there must be proper contract administration, proper contract documents, fair and appropriate allocation of risks in the contract. In addition to that, it was noted that in order to avoid disputes in the construction industry, proper contract documents, fair and appropriate allocation of risks in the contract need to be considered prior to the contract agreement. Bekele in his work recommended that before the implementation of the project, all site investigations and designs should be in place and appropriately complete to reduce conflicts between contracting parties [17]. In this regard, all contracting parties should ensure adequate and correct appreciation of their respective professional and ethical responsibilities, full detailed contract conditions, design and specifications in place. Other countries like the UK and USA use Dispute Review Board (DRB) in resolving conflicts between contracting

parties [25]. In this case, the Board is an independent board consisting three members, two members are appointed from the contracting parties, and the third member will be agreed between the parties, or the two board members will select the third one.

3. Research Results and Discussion

This Section concentrates on revealing out of factors that cause disputes in the road construction projects and mechanisms used to resolve such disputes including their effectiveness. The section goes further to propose a suitable framework work mechanism for handling disputes in the road construction industry through best practices.

3.1. Factors Causing Disputes in Road Construction Projects

The literature review has shown that there are twenty prominent causes of disputes in road construction projects in Tanzania. However, through field survey results, five causes were ranked to be the most causes of disputes. Thus, the twenty causes have been clustered into four categories namely: technical factors, managerial administrative factors, contractual obligation related factors and political-related factors.

Technical Related Factors: The results in Table 1 (Appendix 1) revealed that incomplete design information or conflicting design information, unclear/inadequate employer's requirements, inadequate supervision, variation and changes of scope and technically inadequate number of contractor staff, errors and/or omissions in the contract document cause conflicts and hence disputes in road construction projects. These factors were classified as technical related factors as shown in Table 2 (Appendix 2).

It worth noting that conflicting design information normally occurs during the implementation and monitoring stage (Figure 1). For the design to be practically implementable, it requires review so as to incorporate the missing information in the previous design or re-designing part or the whole project, which may cause delays and a substantial increase in materials, resulting in additional costs to that particular project. The said factor is usually responsible for increased financial claims from the contractor leading to disputes. The above results are in line to the previous studies carried out by Enjohwom et al and Ansary et al who reported that design-related factors such as incomplete design information are directly associated with financial claims from the contractor and may result into disputes among the contracting parties [6, 7]. Unclear/inadequate Employer's requirement has also been cited as one of the causes in the technical factors, as shown in Table 2(1). Also, unclear information from the employer results into disputes as the contract is likely to encounter technical problems that would require modifications and hence additional costs associated with time delays. Failure to prepare adequate employer's requirements is caused by inadequate technical capability of the employer's staff who were involved in preparing the Terms of Reference (ToR).

The results from Table 1(6) indicate that inadequate supervision during the project implementation stage also is likely to cause disputes in road construction projects. During the implementation and monitoring of road works, the consultant needs to supervise the works diligently to ensure quality of works is not compromised. Failure to provide clear and on time instructions and approvals or failure to interpret conditions of the contract might result into disputes. This is might give a room for the Contractor to claim for additional costs and resulting into unnecessary conflicts between the contractor and the employer [14].

As indicated in Tables 1(1) and 2(1), variation of works and change of scope are caused by poor design. This finding is well supported by that of Mahamid et al who also reported that expanding the change of the scope of works without proper consultations between contracting parties may results into disputes regardless of which part is responsible for the contract [13]. Findings from field studies showed that most contractors have technical staff who are technically incompetent to run the project smoothly, including being keen to eliminate the unnecessary technical errors as shown in Table 1(6). In practice, road construction projects require competent staff in terms of skills, knowledge and management with regard to contract handling [15].

Other responses from a number stakeholders showed that under-pricing of the tender can cause disputes road construction projects (Table 1(6)). Under-pricing during the tendering stage influences the contractor to cheat during the implementation stage in order to maximize profit, resulting in substandard works. In this regard, the conflict between the contracting parties might occur when the employer ends up disagreeing with the costs associated with the substandard works [11]. Also, Table 1(6) showed that improper allocation of the project risks during the preparation of contract documents can also cause disputes in road construction projects. Such risks may be caused due to unclear provisions in the contracts, different interpretations of contract provision and ambiguous contract provision [26].

Managerial and Administrative Related Factors: Results in Table 1 (Appendix 1) shows that management and administrative related factors include claims for idle equipment and personnel, financial failure, delay of payment, delay of site possession, employer's failure to settle claims and delay to appoint the project manager, failure to properly administer the contract, failure of the parties to understand their contractual obligation and lack of knowledge and skills in contract management.

The results from Table 1(6) concurs with the studies of Mahamid et al who reported that most of the disputes in the construction industry are caused by conflict among the contracting parties, whereas one part, particularly the Contractor claims for financial compensation due to having idle equipment and personnel as the result of delayed payments of interim payment certificates [13]. Accordingly, the results from Table 1(6) revealed that disputes in road construction projects are significantly caused by the financial failure of the Contractor to manage the funding. Also, disputes

were found to be significantly caused by the employer's failure to settle claims of the contractor submitted to him by the supervisor for payments as shown in Table 1(6). Bvumbwe and Twala reported that disputes in South African road construction projects were mainly caused by the Employer's failure to settle claims raised by the Contractor and approved by supervisors [9]. It was clearly shown that, failure to properly administer the contract for all contracting parties was the cause of disputes in the road construction industry (Table 1(3)). Project managers and Engineers for all parties should be competent and have contract management skills to administer the contract properly including evaluation of project claims. However, most of the respondents have shown that if Project managers from the Consultant and from Contractor's side have inadequate knowledge in contract management, they are likely to mismanage the contract accordingly.

Contractual Obligation Related Factors: Results from Table 1 (Appendix 1) show that parties' failure to understand and comply with their contractual obligation under the contract, employer's failure to provide a working corridor to the contractor, delays in appointing the project manager contribute to causing disputes in the road construction industry. Other factors in addition to the above include; poor financial arrangement from the employer and unfairness in resolving contractual matters. All these contribute to causing disputes in the road construction industry.

The survey findings shown in Table 1(5) show that the technical personnel from contracting parties fail to fulfill their contractual obligations due to lack of knowledge in management and the incapability of understanding and complying with their contractual obligation under the contract. These results are in line with the study carried out by Aryal et al, who reported that failure of the parties to understand and comply with their contractual obligation under the contract is the common cause of disputes in the construction project [19]. The results in Table 1(6) revealed that employer's failure to provide a working corridor to the Contractor in due date as per contract provisions might lead to increased project time than earlier planned in the signed contract. In this regard, the contractor is likely to claim for extension of the contract time accompanied by the increased cost. This may end up into the dispute if the second part (employer) disagree with the contractor claims. Delaying in appointing the project manager for the supervision of works was also identified as the cause in disputes during the field survey as shown in Table 1(6). This is because the contractor is likely to delay to execute the project activities timely thereby claiming extension of time and cost for idle equipment and personnel [27]. Findings in Table 1(6) also show that poor financial arrangement from the employer may impact the project as there will be financial constraints to the Contractor to execute project activities as planned. In this regard, the contractor is likely to suffer financially due to employer failing to pay the contractor on time and may claim compensation of funds for the idle equipment, time and personnel thereby sparking a dispute.

Most of respondents claimed that one of the major causes of

disputes in the road construction projects was cited as delay of payment. The above findings were found to be in line with results of Mehany et al who investigated causes of dispute in roads and bridges projects in Colorado, USA [28]. An effective claim management on both contractual parties is vital to ensure that any predetermined claims arising are dealt fairly by all parties.

Country Law and Political Related Factors: Results from Table 1 (Appendix 1) reveal that political instability usually have impacts to the contract between contracting parties. This is usually caused by change of legislation and political instability in the country. Results from Table 1(4) tend to cement findings in Table 3(1) which show that the introduction of new legislation in the country which was not in place during the signing of the contract was cited as sources of disputes in the road construction industry in Tanzania. For example, when the Government decided to exempt VAT from all development projects so as to cut off project costs, as a result of this, the contractor was denied to claim for extension of time and associated costs and hence conflicts among the contracting parties. Table 2(3) shows that disputes are caused by failure of the employer to fulfill his obligations in accordance with the provisions of the contract to issue timely the tax exemptions and the reimbursement of taxes already paid leading to a dispute.

The above, is supported by Salem who reported that one of the leading cause of conflicts was the introduction of various regulations and ceaseless legislation alterations when the project is running [18]. However, in this study political matters have not been part of prominent causes of disputes and this is well shown in Table 2(4). This is because in Tanzania, there has been no political instability in terms of wars etc. to the extent disturbing on-going projects.

3.2. Current Disputes Resolution Mechanisms in Road Construction Projects in Tanzania

Although the current mechanisms used to resolve conflicts in road construction projects in Tanzania are 8, and include; amicable settlement, adjudication, expert determination, neutral evaluation, conciliation, mediation, arbitration and litigation, the mostly frequent used dispute resolving mechanisms are three. These include amicable settlement, adjudication and expert determination.

Amicable Settlement: According to the views of respondents, an amicable settlement was found to be the frequently used mechanism in resolving disputes in road construction projects in Tanzania as shown in Table 3(1) although, findings from the field surveys showed that most disputes ended in arbitration or judicial courts. This could be having due to inadequate negotiation skills within the contracting parties or an incomprehensive framework of handling disputes in the country. The above findings are well supported by a study of Kikwasi et al who reported that there existed inadequate negotiation skills between contractual parties as well as incomprehensive framework of handling disputes that could lead to conflicts [29]. However, most respondents argued that amicable settlement was the most

efficient mechanism in resolving disputes if well-practiced. This is because the mechanism controls process and outcome, provides great confidentiality and among all preserve relationships among the parties.

Adjudication: Table 3(3) shows that adjudication is also used to resolve disputes in road construction projects. As indicated by most respondents, contractual parties commonly prefer adjudication mechanism because it is relatively cheap compared to other mechanisms as and may not need the use of lawyers. This is in agreement with the study carried out by Love et al who reported that adjudication had a good record of compliance of approximately 95% by the High Court's application for enforcement [30]. However, the results from the field study showed that out of six disputed projects, only one was resolved through adjudication. This indicates that adjudication was not that much effective in resolving disputes in the road construction projects. Most respondents urged that the main reason behind having the adjudication mechanism being ineffective in resolving disputes was having inexperienced adjudicators who are usually biased to one side particularly to the employer. This tendency has usually caused disagreements by other contractual parties. Also, respondents proclaimed that the shortcoming of adjudication is that it requires a number witness evidences and hence not suitable for complex conflicts.

Expert Determination: This mechanism was found to be used to resolve disputes in the road construction project in the country, whereas conflicts arise among the parties' dispute as shown in Table 3(2). The findings are in line with previous workers Love et al who proclaimed that expert determination was commonly used to resolve technical or valuation matters e.g., ambiguity answers or an unsettled area of law [30]. Expert determination mechanism involves submission of claims by the contractor to the supervising consultant evaluation in accordance to the provisions in the contract documents. Poorly written contracts provisions with regard to the claim determination may lead to unnecessary delay and costs. Most respondents however urged that the method has certain shortfalls including the experts may be reliable for negligence and not obliged to observe natural justice rules.

Summary and Conclusion on Current Disputes for Road Construction Projects.

It can thus be concluded that although there exist three main mechanisms that are commonly used in resolving conflicts in the road construction sector, most of the disputes end up in judicial courts. This could be due to inadequate guiding mechanisms including how arbitrators are selected, their qualifications, and how they are supposed to handle the negotiation to reach amicable agreement. Other reasons include inadequate skills and the technical know-how of the consultants, contractors and clients in handling their projects and disputes. Consequently, most disputes end up finding amicable solution through the judicial courts – the practice which also has shown to be expensive and time delaying.

3.3. Proposed Framework Mechanisms Handling Disputes

From lessons gained from the literature review and the field surveys, it was clear that there is a need to have an alternate review mechanism that seemed to work very well in other countries. In this regard, it was important to have a dispute resolving mechanisms that involves both contractual parties and a third party – similar to the alternative Dispute Review Board (DRB) used to resolve resolving disputes in UK and USA which has been shown to be efficient, effective and much accepted by all parties. Interestingly, DRB in UK and USA is an independent board which comprise three members, two members are appointed from the contracting parties. The third member is usually agreed between the parties, or the two board members select the third one as noted from the literature review. This Board is constituted at the commencement of the project. Their main tasks of the Board include visiting the site periodically and acquiring project information regularly. In this regard, any conflict that arises is resolved at the early stage, and hence project completed at a reasonable cost, time and desired quality.

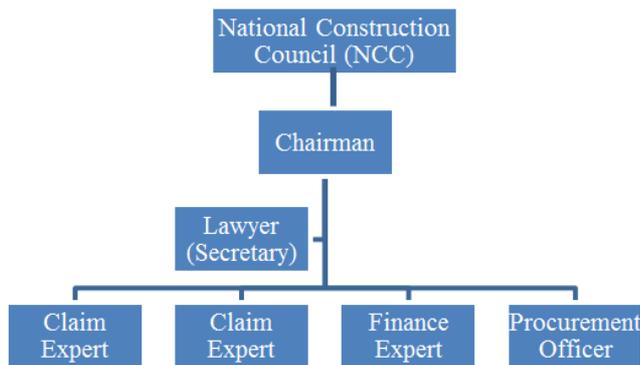


Figure 3. DRB Organization Structure.

Findings from the field surveys clearly indicated the need to have a dispute mechanism that is capable to earmark early problems within the projects and hence having a similar structure to the DRB framework used in UK and USA but involving more experts from different engineering and management fields. It was thus proposed to have a DRB with two claim experts, procurement officer, a lawyer and finance expert. Contractual parties should nominate one claim expert each. The rest of the members should be agreed upon by the contracting parties or nominated by the National Construction Council (NCC), including the Chairperson and the Secretary of the Dispute Board. Figure 3 shows the proposed organization structure of the Board. The organization should be established at the commencement of the project. Within contract documents there should be a particular clause describing that the parties shall refer to DRB on all contractual matters related to disputes. The Board's recommendations may/shall be the binding decision under the contract. The primary obligation of a DRB should be to assist the parties to prevent conflicts, if possible, by enabling and communication improvement and settlement encouragement of controversial project related issues by the

contracting parties at the execution level before they become disputes. Also, to assist in resolving the disputes speedily and at low cost without the necessity for arbitration or judicial courts.

4. Conclusions and Recommendations

4.1. Conclusions

In conclusion, the results of the study indicated the following:

1. Factors that cause disputes in the road construction industry can be grouped into four clusters, namely, technical related factors, contractual obligation related factors, managerial and administrative related factors and country laws and political related factors.
2. Although there a number of resolution mechanisms that are used in resolving the conflicts among contractual parties in the road construction, the most common ones are Amicable Settlement, Adjudication, Expert Determination which have shown over the time to be ineffective.
3. Despite having a number of resolution mechanisms in place, there is no proper guiding framework for assessing the dispute's facts and circumstances before selecting the appropriate dispute mechanism to be used in a particular dispute. Consequently, most disputes end up to judicial courts.

4.2. Recommendations

The recommendation of this study includes the following:

1. There is a need to put up a proper assessment framework of the dispute's facts and circumstances before selecting the appropriate dispute mechanism to be used in a particular dispute.
2. The contracting parties should be obliged to select which dispute resolution mechanism best fits the event at hand that will improve the quality of and access to justice.
3. The contracting parties should establish the DRB framework immediately after signing the contract so as to guide the contracting parties in the smooth running of project activities thereby minimizing unnecessary bottlenecks so as to realize the value for money.

4.3. Recommendations for Further Studies

It is recommended carry out a comparative study of different dispute mechanisms to establish the extent of their effectiveness and efficiency in resolving disputes. Accordingly, it is recommended to undertake further research into the development of the structure or guidelines for selecting suitable dispute resolution mechanisms for a specific dispute resolution process and dispute resolution techniques to enhance clarity and legitimacy during the process and strengthen the relationship between the contractors in the dispute resolution.

Appendix

Table 1. Causes of Disputes.

S/N	Cause of Disputes	Computed values, given the 5 frequency entries			
		Total respondents (N)	Weighted Total (W)	Relative Important Index (RII)	Ranking
1	Variation and changes of scope	60	244	0.813	3
2	Inadequate contract management knowledge and skills to administer the contract	60	238	0.793	4
3	Failure to properly administer the contract	60	253	0.843	1
4	Change in legislation	60	249	0.830	2
5	Failure of the parties to understand and comply with their contractual obligation under the contract	60	237	0.790	5
6.	Others	Incomplete design information or conflicting design information, under - pricing tender, employer's failure to settle claims raised by the contractor, unfairness in resolving contractual matter, improper allocation of risks in the projects, financial failure due to poor management of funds, errors or/and omission in the contract documents, delays of payment, unclear/inadequate employer's requirement and claims for idle equipment and personnel due to extension of time			

Table 2. Clustering of Factors that Cause Disputes in Road Construction.

S/N	Cluster Type	Related Factors
1	Technical factors	Incomplete design information, unclear/inadequate employer's requirement, inadequate supervision, variation and changes of scope and technically inadequate of contractor's staff, errors or/and omissions in the contract document
2.	Managerial and administrative factors	Claims for idle equipment and personnel, financial failure, delay of payment, delay of site possession, employer's failure to settle claims, delay to appoint the project manager, failure to properly administer the contract, failure of the parties to understand their contractual obligation and lack of knowledge and skills in contract management
3.	Contractual obligation factors	Failure of the parties to understand and comply with their contractual obligation under the contract, employer's failure to provide a working corridor to the contractor, delay in appointing the project manager, poor financial arrangement from the employer and unfairness in resolving contractual matters
4.	Country Laws and Political Factors	Change of legislation, political instability

Table 3. Frequent Use of Mechanisms in resolving disputes in TANROADS.

S/N	Cause of Disputes	Computed values, given the 5 frequency entries			
		Total respondents (N)	Weighted Total (W)	Relative Important Index (RII)	Ranking
1	Amicable Settlement	60	264	0.880	1
2	Expert Determination	60	164	0.547	3
3	Adjudication	60	165	0.550	2
4.	Others	Mediation, conciliation, neutral evaluation, arbitration and litigation			

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