

Evaluating the impact of construction dispute and the use of ADR in the Swaziland construction industry

Mashwama, N. X¹, Aigbovboa, C² and Thwala, D³

^{1,2,3}Department of Construction Management & Quantity Surveying / Faculty of Engineering & the Built Environment / University of Johannesburg, South Africa

Email: schwalicious@gmail.com

Email: caigbavboa@uj.ac.za

Email: didibhukut@uj.ac.za

Abstract:

Disputes are common in construction projects because of the complexity of the construction process and the imperfect of the design and moreover, it takes so many individuals and companies to construct a project. Dispute also occur through accidents (Injury), mismanagement, human error, disagreement or lack of communication. Dispute affect the cash flows of the company and also affects relationships between parties. The intent of this paper is to evaluate the impact of construction dispute and the use of alternative dispute resolution in the construction industry in Swaziland. The data used in this study were derived from both primary and secondary sources. The secondary data for the study was derived from the review of literature. The primary data was obtained through the use of a questionnaire which was distributed to client (government) and consultant representatives (quantity surveyor, civil engineer, architects, project managers and mechanical and electrical engineers), only organizations registered with the ministry of public work and transport in Swaziland and other professional bodies were surveyed. Findings from the survey revealed that the effects of construction disputes are loss of productivity, loss of business viability, loss of profitability, time delays, loss of professional reputation, break down in cooperation between parties, cost overruns and loss of company reputation. Findings on Alternative Dispute Resolution (ADR) revealed that the most preferred mechanism for resolving construction disputes were arbitration followed by negotiation and mediation.

Keywords:

Alternative Dispute Resolution (ADR), Construction Industry, Swaziland

1. Introduction

The construction industry is one of the most diverse and unstable sector within the economy. It faces fluctuation demand cycles, project specific product demands, uncertain production conditions and it combines a diverse range of specialist skills (Maturana, 2004 & Cakmak & Cakmak, 2013). The construction industry is unique and complex to other industries as it involves many participants in all trends, due to this, conflict and disputes can easily occur for example; through changes in plans, quantities, or details of construction which are inherent in the nature of construction (United State Army Corps, 2004).

The construction industry works involves thing that are hidden beneath the ground and those hidden things may not actually be as had been anticipated. Furthermore, with the best of intention the plans may not work as expected when they are applied to the actual site. Disputes are common in construction projects because of the complexity of the

construction process and the imperfect of the design and moreover, it takes so many individuals and companies to construct a project. Dispute also occur through accidents (Injury), mismanagement, human error, disagreement or lack of communication. Dispute affect the cash flows of the company and also affects relationships between parties (Fenn et al. 1997). The occurrence of construction disputes can lead to negative impact towards an organisation. The construction work progress will be slow due to disputes between the contractor and client. Subsequently, the cash flow (Love et al, 2007).

Construction disputes has an effect on all stakeholders which may lead to inequitable mode of project delivery such as reducing the profit margins, increased cost, reduced quality and level of service (Motsa, 2002). Most minor disputes are usually settled quickly, fairly and amicably by the building team through negotiations. However, serious issues that can't be solved through negotiations then it can be solved through alternative dispute resolution mechanism which are mediation, arbitration and litigation (Hall, 2002). Moreover, consequences of construction disputes will definitely not benefit the stakeholder in the construction project of Swaziland.

There has been a considerable research done to determine Alternative dispute resolution used in the construction industry and consistently the same variables are identified and continue to manifest. However the has been a gap in investigation of professional opinion within the construction industry of the effects of dispute and the most preferred ADR used to resolve construction dispute efficiently in Swaziland Construction industry. Disputes have become an endemic feature of the Swaziland construction industry. Hence, this paper aims to evaluate the effects of construction dispute and the use of ADR to resolve construction dispute in construction projects in Swaziland.

2. Swaziland construction industry

The construction companies operating in Swaziland range from small local contractors to major companies with the capability to carry out highly specialised projects. The large contractors employ about 20,000 people. The range of work undertaken in the construction industry covers small buildings, multi-level projects, roads, dams and infrastructure. Therefore the CI is a key source of work and income in the Kingdom. The overall contribution to the Gross Domestic Product (GDP) by the construction industry was 5.8% in 2002, but it has dropped down to 2.8% in 2013 (Swaziland Business year book 2002, Central bank of Swaziland).

Government is the major client in the construction industry of Swaziland. The ministry of Public Works and Transport is the Government's implementing agency on behalf of all ministries with regard to all construction capital projects (Mvubu &Thwala, 2009). The Swaziland Government through the ministry of Public Works and Transport also has a responsibility to educate contractors and subcontractors about government's expectations of the quality of work; the process of tendering and the information required (Mvubu &Thwala, 2009). The Government of the kingdom of Swaziland, through its 25- year National Development Strategy has identified the construction sector as a priority area to provide the impetus on improve the social and economic

development of the country. However the Agriculture industry is the one that leads by contributing more to the economy of the country.

3. Literature review

3.1 Dispute

Dispute is defined as an assertion of opposing views or claims or disagreement as to rights (Merriam- Webster's Dictionary of law, 1996). Dispute can be caused by negligence in understanding the terms in the contract, for example disputes on misunderstanding and also payment (Thomas, 1992 &1994). Reid and Ellis (2007), in a paper titled 'Common sense applied to the definition of a dispute' make the argument that there is no definitive meaning of dispute and a dispute according to Reid and Ellis doesn't not exist until a claim has been submitted and rejected, a claim being a request for compensation for damages incurred by any party to the contract. The definition of Dispute is a problem or disagreement between the parties that cannot be resolved by on jobsite or on-site project managers. Moreover the definition carries the emphasis on jobsite or on-site disputes are firstly seen as occurring on site then escalating upwards through the organisational hierarchy (Love, et al 2007).

3.2 Effects of Construction Dispute

A literature review has been conducted to identify the effects of construction dispute in the construction industry. According to Hall (2002) the effects of construction dispute can cripple a company and bring it to its knees, and the effects are additional expense in managerial and administration; Possibility of litigation cases; time delays and cost overruns; extended or more complex award process; Diminution of respect between parties and deterioration of relationship and break down in cooperation. While Love et al, (2007) claims that loss of company reputation; loss of profitability and perhaps business viability; loss of professional reputation; rework and relocation cost for men, equipment and materials, time and cost overruns are the effects of construction dispute.

3.3. Alternative Dispute Resolution (ADR)

There is an extensive range of dispute resolution techniques and processes available to a disputing party. Most of the time, parties will identify at the beginning of the contract the process of resolving the dispute if it occurs. There are different procedures which the parties are exposed and can choose from and range from traditional court processes to alternative dispute resolution (Fenn, et al, 1998). Dispute resolution process can fall into two main categories non-binding and binding and literature suggest that these types of process produce successful outcomes (Madden, 2001). Non-binding process are beneficially for the disputing participant and the industry because they produce acceptable result in a cost efficient and timely manner (Finlay, 1998). Disputes should be quickly addressed and resolved for the well-being of the project and to minimize disruption of the design and building process. If the dispute cannot be resolved by the parties, various methods of resolution are offered that include settlement, mediation, arbitration, and litigation (Frederick at el., 2001). Following is a discussion of the different dispute resolution used in the construction industry to resolve dispute:

3.3.1 Settlement of disputes

Disputes between two parties should be addressed quickly and, if at all possible, a settlement should be rendered and recorded. Settlement can be in the form of monetary adjustment or payments, free services on behalf of the architect to remedy or correct an error or such other agreement between the two parties. It is recommended that this method of dispute resolution be used whenever possible to avoid time, cost and anguish, which can occur as a result ADR (Frederick et al., 2001:17). An advantageous dispute resolution process will ideally seek to settle a dispute with an acceptable outcome within the least amount of time, as cost effective as possible, with the least amount of resources and hopefully the preservation of the working relationship between both parties (Maden 2001).

3.3.2 Negotiation

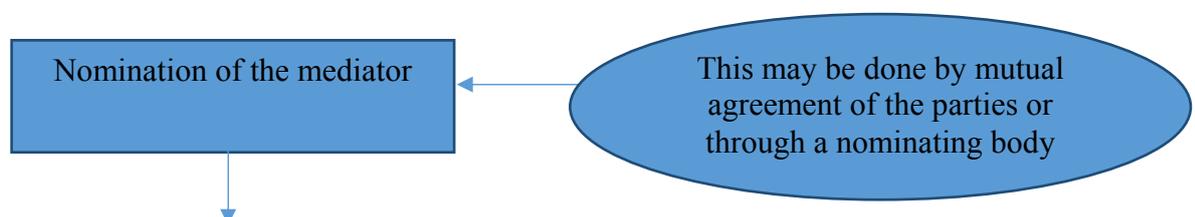
Negotiation is one of the most common form of alternative dispute resolution and most cost effective and most reliable form of dispute resolution. Many authors agree that it is the most preferred dispute resolution systems used in the construction industry. Negotiation can be defined as a basic means of getting what you want from others, or a consensual process requiring a willingness of both parties to understand the other stand point (Love et al. 2007:30). Negotiation is defined as a private, voluntary and consensual process whereby parties attempt to resolve their differences personally by agreement (Havenga, 2010:286). One of the benefits of this process is that both the discussion and the outcome can remain confidential, unless negotiations are in the public interest (for example labour or trade negotiations). In negotiations, the parties attempt to reach an acceptable resolution of their dispute without outside intervention. This is a distinction between negotiation and mediation or arbitration, in both the latter instance, a third party is involved (Havenga, 2010:286).

3.3.3 Mediation.

Mediation, conciliation are terms used to describe dispute resolution process, that involves assistant negotiation through the use of third party who is neutral (Love et al., 2007:32). However, these processes are usually employed once the dispute has passed through the administrative procedures and negotiations have proved unsuccessfully. Moreover, any unsettled dispute can be escalated to more formally binding process including litigation (Love et al., 2007:32).

Mediation is the process by which the participants, together with the assistance of a neutral person or persons, systematically isolate disputed issues in order to develop options, consider alternatives, and reach a consensual settlement that will accommodate their needs (Love et al, 2007, Holtham et al.,2009 & Havenga, 2010)). Mediator is a circuit breaker, because they intervene and suppress should the situation become aggressive and they are commonly trained in communications and negotiation skills, can commonly come from law or social working industries. The resolution process is more to provide evidence in separate meeting with the mediator (Havenga, 2010).

The mediation process



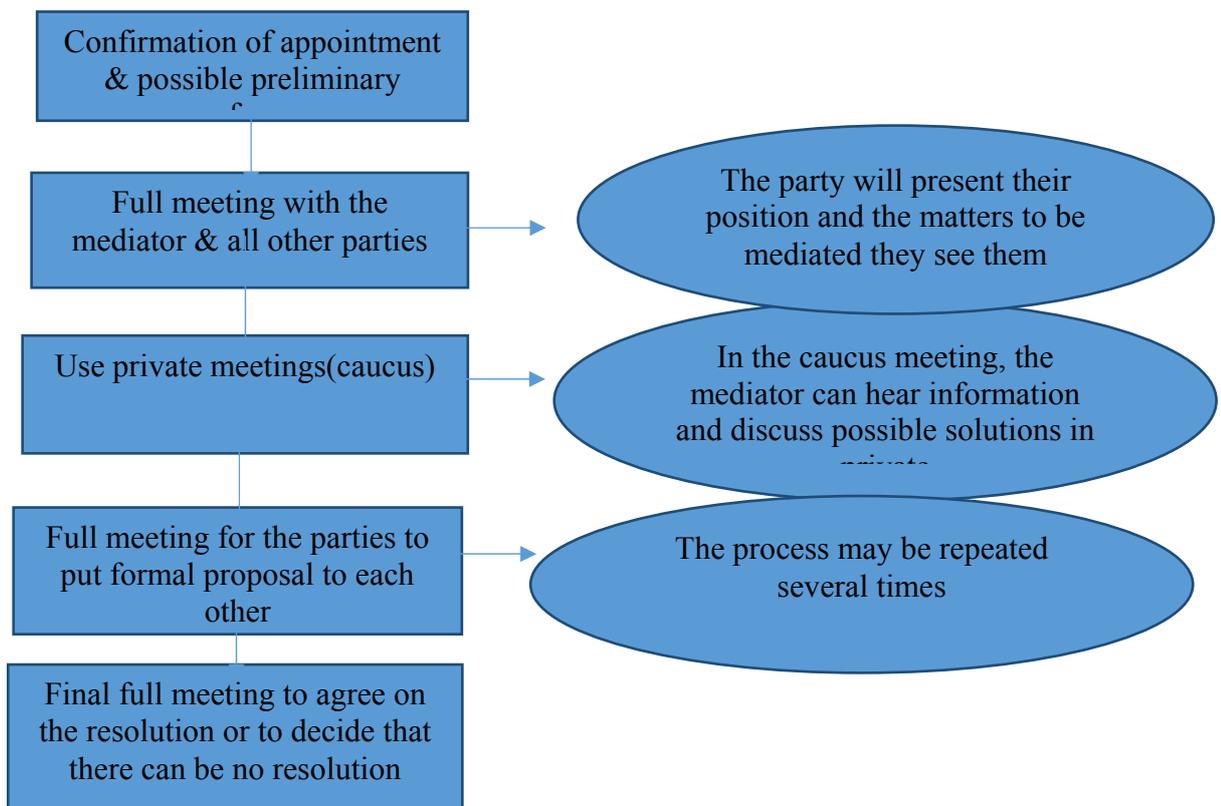


Figure 2.2: Model for Mediation Process (Source: Love et al, 2007:32)

3.3.4 Expert determination

Expert determination is a process in which the parties to dispute present arguments and evidence to neutral third party chosen on the basis of their specialist qualification or experience on the subject matter of the dispute (Love et al, 2007 & Fenn et al 1998). The task of the expert is to provide an objective independent and impartial assessment of the dispute through the investigation of facts or issues presented by the disputing parties. However, the judgement provided is a decision based on fact and not the personal opinion of the expert (Love et al, 2007:33). However, the process by which the expert structures the investigation is primarily governed by the expert and usually conditionally on the type of dispute in question (Jones, 1998). The expert may meet privately with each party, together with both parties or determine the merits of the dispute purely through assessment of facts and statements (Fenn, 1998). This process is advantageous where the dispute is technical in nature, contractual, valuation of the work or specialist area of work (Love, et al, 2007:34). The processes beneficial where the communication between the disputing parties has determinate and direct negotiation impractical (Jones, 1998). Expert determination has certain advantages over mediation in that it satisfies the participants needs for an impartial assessment consequently giving the process a more equitable appeal (Love et al, 2007:34).

3.3.5 Dispute Resolution boards

Dispute resolution boards must be established at the project onset. Potential candidates for the board must be identified and appointed. Client and contractors tend not to focus

on disputes at start of the project and when a dispute does arise they tend to take considerable time reaching agreement on the members and establishment of the board (Gould, 2006). The Board members must be impartial and have wide ranging expertise with excellent communication and management skills. It is also imperative that board members are available for the duration of the project to deal with matters promptly (Jones, 1996)). Dispute resolution board is a panel of three standing neutral advisors chosen by both the owner and the contractor prior to initiation of construction (Peck and Dalland, 2007). Usually, the panel conducts routine site visits to monitor construction progress, as well as assist the owner and the contractor to resolve any outstanding issues and avoid their escalation to a disputes that might have adverse effects on the project schedule budget and quality. However, the Board should meet at least 3 times a year, and the function of the board should be to nip in the bud problems before they develop into disputes (Gaistkell, 2005).

3.3.6. Arbitration

Arbitration is the ADR technique most similar to litigation, however, instead of presenting the case to a judge or Jury, summary presentations are made by both side to one or a panel of neutral arbitrators (Havenga, 2010). Many of the same procedures used in litigation, such as discovery and preliminary motions, are used in arbitration. However, arbitrators have the power to direct those processes (Hinds,1998). Arbitration decisions are considering binding, unless previously agreed upon to be non-binding (Eilenberg, 2003). However, the outcomes of arbitration provide a satisfactory outcome, this is outweighed by the excessive cost, adversarial process and long waiting periods for hearings (Love et al, 2007:37). There are defined advantageous of using arbitration such advantages over court action such as confidentiality as the hearings are a private determinative process and the findings are not published, flexibility and convenience. The process is also final and binding and is heard by single or panel of expert in the relevant field (Havenga, 2010).

3.3.7 Mini Trials

Concept of the mini-trials is that by presenting the facts of both sides of the case to top executives from both sides and educating them on the strength and weakness of the case, they will ultimately resolve the matter. This method provides them, probable for the first time, with the necessary information to make a complete assessment of the risks and cost of going to trial. In the Mini-Trial lawyers make the abbreviated presentation which are usually also heard by neutral advisor, usually a retired judge or an authority on the technical issues in the case (Havenga, 2010).However, a mini trial is not a trial at all but a structured nonbinding settlement procedure which effectively incorporates many of the adversarial aspects of arbitration and the negotiation aspect of mediation. The main difference, however, is that the mini-trial focuses on allowing executive level management to resolve the disputes. This concept strives to reduce the dispute to a business decision rather than a complex legal question (Havenga, 2010).

4. Research Methodology

The data used in this paper were derived from both primary and secondary sources. The primary data was obtained through the survey method, while the secondary data was derived from the review of literature and archival records. The primary data was obtained through the use of a structured questionnaire survey. This was distributed to a total of 90 construction professionals that included; client (government), contractors, consultants' representative's quantity surveyors, civil engineers, architect, etc who are currently involved in construction of public projects in Swaziland. Out of the 90 questionnaires sent out, 63 were received back representing 70% response rate. This was considered adequate for the analysis based on the affirmation of Mcneill & Chapman, (2005) since the result of a survey could be considered as biased and of little value if the return rate was lower than 30 to 40%. The data presentation and analysis made use of frequency distributions and percentages of all the respondents. The research was conducted between the months of June to August, 2014.

4.1 Analysis

In this study, The quantitative data collected was analysed with Statistical Package for the Social Science (SPSS) a computer programme which is used for analysing data concerned with social phenomena. The software was used to generate various statistical, including descriptive statistic, which provides a basic summary of all variables in the data (Henn et al., 2006). The benefits of using SPSS is that it allows for scoring and analysing quantitative data at speed and it can also be used to perform multivariate analysis. SPSS also helps to present the data in a logical format (Babbie, 2004:398) thereby reducing time spent on calculating scores. However, accuracy in results is highly dependent on inputs, hence the need to accurately capture data from the questionnaire.

Furthermore, a 5-point Likert type scale was also used to evaluate the effects of construction dispute and the use of ADR in the Swaziland construction industry with regard to the identified factors from the reviewed literature. The adopted scale read as follows, 1= Never, 2= rarely, 3= Sometimes, 4= Often and 5= Always. The five-point scale was transformed to mean item score (MIS) for each of the factors as assessed by the respondents. The indices were then used to determine the rank each item. Following the mathematical computations, the criteria are then ranked in descending order of their relative importance index (from the highest to the lowest). The Mean Item Score (MIS) was derived from the following formula (Lim and Alum, 1995).

$$MIS = \frac{1n_1 + 2n_2 + 3n_3 + 4n_4 + 5n_5}{\sum N}$$

Where;

n_1 = number of respondents for strongly disagree

n_2 = number of respondents for disagree

n_3 = number of respondents for neutral

- n_4 = number of respondents for agree
 n_5 = number of respondents for strongly agree
 N = Total number of respondents

5. Findings and Discussion

Findings from the 63 respondent revealed that 63% were males and 37% were female. Further findings revealed that 32% of the respondents were civil engineers, 28% of the responded were quantity surveyors, 25% were construction managers, and 12% were project manager and construction project manager, 3% were electrical engineers, site managers and health and safety. Most of the respondent had a working experience of more than 5 years, 60% of the respondent had 5 or more years, 32% had 4years experience, 13% had 3 years experience, 3% had 2 years and lastly 2% had 1 year experience. Respondent who were involved in civil and building projects were 44.6%, 27.7% of the respondent were involved in buildings, 10.8% were involved in civil work only, 9.2% were involved in electrical work, 6.2% were in Mechanical work and lastly 1.5% were involved in other projects. Respondent on the value of work executed were 37% who had executed 100-200million, 200 million were 24%, 21% had executed 10-20million,18% of the respondent had executed20-100 million and 2% had executed 2-5million. 59% Respondent had 5 or more construction dispute, 19% had encounter 3 dispute, 10% had encountered 2 & 4 dispute, and 3% had encounter one dispute

5.1 Effects of construction dispute in construction project in Swaziland

The respondents were asked to indicate the extent of possible outcomes / effect of a construction dispute in construction projects. Most of the respondents reveals that loss of productivity had a major effect on construction projects and it was ranked first with a mean score of 4.8 and SD= 1.025; loss of business viability was ranked second with a mean score of 4.29 and SD= 0.982; Loss of profitability was ranked third with mean score of 4.23 and SD= 1.015; Time delay was ranked fourth with a mean score of 4.19 and SD= 0.938; Loss of professional reputation was ranked fifth with a mean score of 4.18 and SD= 1.064; break down in cooperation between parties was ranked sixth with a mean score of 4.11 and SD= 1.088; Cost overruns was ranked Seventh with a mean score of 4.10 and SD=0.918 and loss of company reputation was ranked eighth with a mean score of 4 and SD= 1.040. Furthermore, additional expense in administration was ranked third last (13) with a mean score of 3.55 and SD= 1.035; relocation cost of workers was ranked second last (14) with a mean score of 3.54 and SD=1.134 and lastly additional managers cost was ranked last fifteen with a mean score of 3.47 and SD= 0.987

Table 7.1 Effects of construction disputes

Factors	\bar{x}	σ_X	R
Loss of productivity	4.8	1.025	1
Loss of business viability	4.29	0.982	2

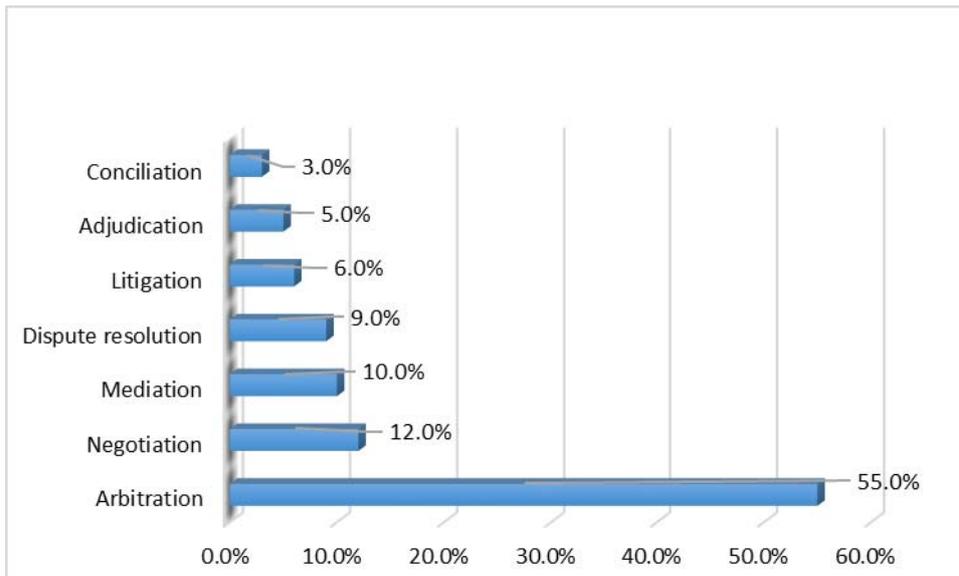
Loss of profitability	4.23	1.015	3
Time delays	4.19	0.938	4
Loss of professional reputation	4.18	1.064	5
Break down in cooperation between parties	4.11	1.088	6
Cost overruns	4.10	0.918	7
Loss of company reputation	4.00	1.040	8
Diminution of respect between parties	3.97	1.119	9
Relocation of Equipment	3.56	1.125	10
Rework/ repetition of work	3.73	1.119	11
Relocation of Material	3.58	1.124	12
Additional Expense in administration	3.55	1.035	13
Relocation cost of workers/ labors	3.54	1.134	14
Additional Managers cost	3.47	0.987	15

σX = Standard deviation; \bar{x} = Mean item score; R = Rank

5.2 Preferred ADR mechanism for resolving construction disputes

Respondent were asked based on their opinion which was the best mechanism that can be used to resolve construction dispute. Most respondent, about 58.7% believed that arbitration is the most preferred mechanism that can resolve construction dispute promptly in Swaziland construction industry; 14.3% of the respondent felt that negotiation can also be used; followed by mediation and dispute resolution at 12.7%. Lastly respondent felt that litigation at 7.9%; Adjudication at 6.3% and conciliation at 4.8% were not the best mechanism to resolve construction disputes in Swaziland construction projects (Figure 7.2)

Figure 7.2: preferred mechanism for resolving construction disputes



Respondent were asked to rank the effective and efficient dispute mechanism used to resolve dispute in construction project in Swaziland. Most respondent, ranked Arbitration the highest with a mean of 3.29 and standard deviation (SD)= 0.982; dispute resolution boards ranked second with a mean score of 2.95 and SD= 0.931; Litigation was ranked third with a mean score of 2.61 and SD= 1.030; Mediation was ranked fourth with a mean score of 2.56 and SD= 0.969. However, Adjudication was ranked fifth with a mean score of 2.49 and SD= 0.887; dispute resolution was ranked sixth with a mean score of 2.48 and SD= 0.893 and Negotiation was ranked last with a mean score of 2.27 and SD= 1.162 (Table 7.3)

Table 7.3 Effective and efficient mechanism

ITEM	\bar{x}	σX	R
Arbitration	3.29	0.982	1
Dispute resolution boards	2.95	0.931	2
Litigation	2.61	1.030	3
Mediation	2.56	0.969	4
Adjudication	2.49	0.887	5
Dispute resolution	2.48	0.893	6
Negotiation	2.27	1.162	7

σX = Standard deviation; \bar{x} = Mean item score; R = Rank

6. Conclusion and Recommendation

From literature review we have seen the effect of construction disputes in the construction industry to be loss of productivity, loss of business viability, loss of probability, time delays, loss of professional reputation, breakdown in cooperation between parties and cost overruns. In terms of alternative dispute resolution arbitration was the preferred mechanism that can solve construction dispute, followed by negotiation and mediation were the most preferred mechanism in Swaziland

construction industry. The findings on the effective and efficient dispute resolution mechanism the respondent ranked arbitration, dispute resolution boards, followed by litigation. However, mediation, negotiation and adjudication were ranked the list, the respondent felt that it was not an efficient and effective method to resolve construction dispute.

RECOMMENDATION

The study has revealed research gap which might be fruitfully pursued, such as the use of ADR to resolve construction dispute. Most of the stake holders require to be taught about the benefit of ADR.

Strategies to avoid disputes

From the discussion above, it is recommended that the use of Alternative dispute resolution should be emphasis by the government as the major client for public project, by way of having workshops annually with an emphasis on to dispute avoidance and the mechanism to use for resolving construction dispute, especial negotiation and mediation since they are cost effective and fast if the parties involve can cooperate

References

- Baarda, D.B., de Goede, M.P.M & van Dijkum, C.J. (2004). Introduction to Statistics with SPSS: A guide to the processing, analyzing and reporting of (research) data. Wolters-Noordhoff BV: Netherlands.
- Cakmak, P.I. & Cakmak, E. (2013). An analysis of causes of disputes in the construction industry analytical hierarchy process (AHP). AEI. ASCE. 93-101
- Chapman, P.H. (2006). Dispute boards on major infrastructure projects. Paper presented to the dispute resolution board foundation conference. Budapest, Romania.
- Collins (1995). Collins Cobuild English Dictionary. Harper Collins, London
- Jahren, C.T. & Dammeier, B.F. (1990). Investigation into construction disputes. Journal of management in Engineering. 6 (1):39-46.
- Kumaraswamy, M.M & Yogeswaran, K. (1998). Significant sources of construction claims. International construction law review. 15(1):144-160
- Kumaraswamy, M.M. (1997). Conflicts, claims and disputes in construction. Engineering, Construction and Architectural Management. 4(2):95-111.
- Love, P., Davis, P., Jefferies, M., Ward, P., Chesworth, B., London, K. & McGeorge, D. (2007). Dispute avoidance and resolution a literature review Report No.1. Cooperative research center for construction innovation. 3-62
- Maturana, S., Alarcon, L, & Vrsalovic, M. (2004). Achieving collaboration in the construction supply chain: An onsite subcontractors' evaluation methodology
- Odediran, S.J., Adeyinka, B.F., Opantunji, O.A. & Morakinyo, K.O. (2012). Business structure of indigenous firms in the Nigerian construction industry. International Journal of Business Research & Management. 3(5): 255-264

Semple, C., Hartman, F.T & Jergeas, G. (1994). Construction claims and disputes: Causes and cost/ Time Overruns. *Journal of construction engineering and management*. 120 (4) 785-795

Sinha, M & Wayal, A.S. (2008). Dispute causation in construction projects. Second International conference on Emerging Trends in Engineering (SICETE).

The Swaziland National construction Industry Bill (1st draft) October. (2010). the Ministry of Public Works and Transport

Thwala, W.D. & Mvubu, M. (2009). Problems facing small and medium size in Swaziland. *Journal service science & management*. 2: 353-36