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Research Article

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Analysis of Causes of Conflicts in Construction Projects

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Abstract Conflicts in construction projects are part of the project undertakings due to involvement of many parties. This non-experimental study design attempts to unveil the causes of conflicts in construction projects. Respondents were randomly selected from architects and quantity surveyors Continued Programme Development (CPD) seminar conducted in Dar esSalaam in 2017 and other practitioners in the industry. Data was collected through collective administration and mailed questionnaires, and, a survey of the literature and analyzed using IBM SPSS Statistics 20. Out of 50 causes of conflicts extracted from literature, only 31 were found statistically significant (Sig $\leq$ 0.05) for Tanzanian construction industry. Using Principal Component Analysis with Varimax rotation, five components explained by 52.1% of the total variance were determined. These components are grouped under client related, consultant and contractor related, shared and others. The five groups were subject to reliability analysis to test the internal consistency of variables in each component using Cronbach's Alpha and only client, consultant and contractor related causes of conflicts attained acceptable component reliability. The attempt to group causes of conflicts lays a base for projects teams to devise strategies to resolve conflicts based on their emergence before they can escalate into disputes.

Keywords clients, conflict, contractors, project, consultants

1. Introduction

A construction project brings together individuals who form a team to accomplish the objectives of the project through fulfilling their obligations under the contract. These include: the clients, consultants, contractors and subcontractors. In the course of accomplishing their tasks, conflicts may arise between individuals as well as groups. Conflict is simply a serious disagreement between two or more members of the team over a certain substance of the project. However, the term conflict has been defined by various authors. Conflict is a serious disagreement between parties due to various reasons, i.e. payment, communication, public interruption etc [1]. Conflict is the condition of the occurrence of the mismatch between the values or goals to be achieved, both in the individual and in relation to others [2]. Willmot & Hocker [3] define conflict as an expressed struggle between at least two independent parties who perceive incompatible goals, scare resources, and interference from other achieving those goals. Ejohwomu *et al* [4] summarize that a common definition that emerges from the definitions found in literature shows that conflict is any disagreements which arise amongst individual due to nonconference of ideas, interest and concerns.

Project teams have experienced conflicts during execution of construction projects over the years. The underlying concept is that a construction project is a multi-disciplinary activity therefore conflicts are unavoidable. For the teams to eliminate or control conflicts occurrence in project undertaking, it is extremely important to establish their causes. The causes of conflicts are numerous and have been fairly studied. The works of Ntiyakunze [5], Mitkusa & Mitkusa [6], Khahro & Ali [1], Narh *et al* [7], Elmabrok *et al* [8], Ejohwomu *et al* [4], Osei-Kyeia *et al* [9], Adeyeni & Aigbavboa [10] and Osei-Kyeia *et al* [11] have explored this area. Nevertheless, the existence of the causes of conflicts varies with the locality of the construction

project. This is evident in a number of researches conducted worldwide with the exception of payment delays which seems to dominate in many researches. The works of Elmabrok *et al* [8] (Libya and Serbia), Narh *et al* [7] (Ghana), Ejohwomu *et al* [4] (Nigeria), Ntiyakunze [5] (Tanzania) and Osei-Kyeia *et al* [9] (Ghana and China) portray such variances.

The causes of conflicts are many and it might be difficult to tackle them one by one, as such grouping may sound a better option. Previous works such as that of Jaffar *et al* [12], Ntiyakunze [5], Chen *at el* [13], Rauzana [2], Soni *et al* [14] and Osei-Kyeia *et al* [9] have attempted to categorize causes of conflicts in construction projects. Researches in Tanzania on similar direction have focused on causes of delays, cost overrun or variations. For instance, causes and effects of delays and disruptions in construction projects [15], critical factors causing delays and cost overrun in building projects [16] and causes of variations in public building projects [17]. The fact that causes of delays, cost overrun and variation do exist they may not necessarily cause conflicts in construction. Consequently, focus and more studies on causes of conflicts are necessary to explore the subject matter. Basing previous work done in Tanzania and elsewhere, this study seeks to determine causes of conflicts that are significant to construction projects in Tanzania and cluster the causes according to their source.

The concept of conflicts in construction projects

There is a general agreement in published works that conflict in construction is unavoidable. The main argument is the multidisciplinary nature of activities involved and the devotion of individual participants to fulfill their roles which leads to crush of interests. Rauzana [2] asserts that in the complex environment of the construction projects, the participants from various professions, each expect has own goals and wants to make the most out of own benefits. Construction projects nowadays have become more complex and conflict seems to be synonymous with construction projects [7]. Conflicts in the construction industry are manifested in complexity and temporary nature of projects [2, 7, 8, 12, 14]; diversity of the industry and involvement of various parties [1, 4].

Different types of conflicts are documented in previous studies. Relationship conflict and task conflict [18], internal and external [4, 19], functional and dysfunctional conflicts [20], intrapersonal, interpersonal and intra-group conflicts [7, 21] and affective and substantive conflicts [13]. Relationship conflict is a perception of interpersonal incompatibility and task conflict is a perception of disagreements among group members about the content of their decisions and involves differences in viewpoints, ideas, and opinions [7]. Affective and substantive conflicts have the same meaning as relationship and task conflicts [13]. Ejohwomu1 *et al* [4] point out that internal conflicts are the conflicts that occur within parties to the contract, such as clients, contractors, and consultants, and, external conflicts are conflicts between project participants and external stakeholders (users, people affected by project etc.). Gorse [20] explains that functional conflicts involves detail discussion of relevant issues to arrive at a solution while dysfunctional involve personal insults, criticism that boost self-ego and comments that lack regard for others feelings not aiming at improving task performance. According to Narh *et al* [7] intrapersonal conflict is a conflict that take place within the individual, interpersonal conflict is experienced between individuals in the same group or unit and intra-group conflicts is conflict between groups in the same organization, team or command. In addition, Chen *at el* [13] determine three essential types of conflicts between the owners and contractors in construction projects which are relationship-related conflicts, process-related conflicts and task-related conflicts. This study focuses on internal conflicts that occur within parties to the contract mainly clients, contractors and consultants.

Causes of conflicts in construction projects

There are numerous causes of conflicts in construction projects that have been determined. It is evident that causes of conflicts differ from one country or region to another even at global level. Elmabrok *et al* [8] compared causes of conflicts in Libya and Serbia and found that delays in payments was ranked first in both countries but excessive contract variations and differences in evaluation were ranked second to Libya and Serbia respectively. Likewise, Osei-Kyeia *et al* [9] disclose that causes of conflicts that ranked higher in Ghana are directly relate to poor governance and contract arrangement, whereas causes related to poor risk management

and communication are ranked higher in China. On the other hand, studies have determined causes of conflicts worldwide. Mitkusa & Mitkusa [6] reveal that unsuccessful communication between the client and the contractor was the cause of conflicts in addition to unfair behavior of the parties to a construction contract and psychological defense mechanisms. Among top five causes of conflicts determined by Narh *et al* [7] in Ghana are failure of clients to honour payments, contract awards to incapable contractors, unclear and incomplete description of items in the bills of quantities, communication breakdown and inactive on the part of contractors. Research by Khahro & Ali [1] reveal direct causes of conflicts which are delays in payment, contractual claims, public interruption, poor communication, differing site conditions, lack of funds and unclear risk allocation. Ejohwomu *et al* [4] found that poor financial projections on the client's side, poor public relationship between the project people and the public, lack of funds, change of scope of works due to client requirement instability, deliberate blockage of information flow, cheap design hired instead of quality and inadequate contract provisions for enforcement of timely payments were significant causes of conflicts in Nigeria. Besides, Loke [22] reveal error and omission in project design, ambiguities in contract documents, error and omission in the contract terms, and improper scheduling and planning as causes of conflicts in the construction industry.

Previous studies in Tanzania and elsewhere have categorized causes of conflicts. Ntiyakunze [5] classify causes of conflicts into those related to the nature of contracts, where the contracts are unclear and ambiguous they give room for contracting parties to develop opportunistic behaviour when post adjustments are needed; and those related to role functions when the parties fail to perform as expected. Soni *et al* [14] classify causes of conflicts into owner related, contractor related, consultant related, third party and human behavior related, and, design and contract related. Similarly, Rauzana [2] categories are owner, consultant and contracts and specifications.

In line with the causes of conflicts, other studies have examined the factors of conflicts as well as partnership in relation to conflicts. Jaffar *et al* [12] categorizes factors of conflict into reluctance to check for constructability, clarity and completeness and poor communication among project team (behavioral factors); late giving of possession, delay interim payment from client and unclear of contractual terms (contractual problems); and contractor fails to proceed in a competent manner and late instructions from architect or engineer (technical problems). Adeyeni & Aigbavboa [10] determine the factors of conflicts which are lack of management among professionals, inaccurate specification of tasks, variation of construction circumstance, variation in range of task, situation on construction sites, transformation of material, inappropriate high-standard of professionals, lack of confidence, diverse perception, language barriers, role uncertainty, personal interest, lack of information and individual behaviors. Regarding partnership, Osei-Kyeia *et al* [11] group causes of conflicts in Public-Private Partnership (PPP) arrangement in Ghana into poor community relationship and engagement, poor contractual agreement and political interference, lack of knowledge on PPP project governance, low level of interaction among key project parties and poor leadership. Similarly, Adnan *et al* [23] reveal factors of conflicts in partnership as insufficient efforts to keep partnering going and misunderstanding of partnering concept, inconsistent goals and delegation of and limits to authority. Furthermore, Adnan *et al* [23] conclude that partnering is an effective way to improve conflict by having good relationships among parties involved which involves mutual objectives, commitment, trust and teamwork among the parties in achieving goals. However, a study by Phillips- Alonge [24] establishes that partnering is neither cause or deter to conflict occurrence but a means for amicable resolution of conflicts to reduce disputes and litigation.

Related studies in Tanzania have explored on causes of delays, cost overrun and variations. For example, Kikwasi [15] determines that causes of delays and disruptions in construction projects are design changes, delays in payment to contractors, information delays, funding problems, poor project management, compensation issues and disagreement on the valuation of work done. Luvara *et al* [16] found that delay in decision making, incomplete design and estimate at the time of tender, improvement of standard drawings/design changes during construction stage and errors and omission in drawings and in the bill of quantity were severe factors causing delays. A study by Mhando *et al* [17] reveal four factors of variations as change of plans or scope by clients, design discrepancies by consultants, misinterpretation of contract documents by the contractors and weather conditions. The findings of these studies share some causes with that of conflicts found in previous study, hence an important contribution to this study. The fact that conflicts exist in construction projects in Tanzania, focused studies are needed to explore this area.

Materials and Methods

The motivation of this study is the unending conflicts in construction projects. This is a non-experimental study design which attempts to determine the causes of conflicts in construction projects in Tanzania. The respondents were randomly selected from 354 delegates of Architects and Quantity Surveyors Registration Board 28th Continued Programme Development (CPD) seminar in Dar es Salaam in October 2017. The random selection of respondents was planned such that in each raw of delegates in the conference hall questionnaires were administered to every 5th delegate until 100 questionnaires were distributed. The 354 delegates comprised of 107 architects, 103 quantity surveyors and 144 others. Prior to attending CPD 50 questionnaires were emailed to practitioners. Two research assistants were engaged in collective administration of questionnaires in the conference hall and those who received and filled emailed questionnaires and were advised to inform the assistants. Correspondingly, literature was surveyed on previous researches on the subject matter. The questionnaires contained active and attribute variables. Fifty causes of conflicts extracted from literature were listed in the questionnaires for respondents to rate using active variables (3= Strong agree, 2= Agree and 1= Disagree). Attribute variables in the questionnaires were profession of the respondent, sex, experience, age and number of projects involved. Fifty questionnaires were emailed to practitioners and 100 questionnaires distributed during the CPD. Out 150 questionnaires distributed 21 were returned through emails and 44 were collected from CPD participants equating to 65 and only 55 were fairly filled for analysis. Data was cleaned and analyzed using IBM SPSS Statistics 20. Compare means feature of SPSS using One-Sample Test was used to test significant causes of conflicts in construction projects in Tanzania. Dimension Reduction feature of SPSS using Principal Component Analysis (PCA) was used to categorize causes of conflicts into components. In addition, component reliability was tested using Cronbach's Alpha to determine the internal consistency of variables in each component.

Results and Discussion

Results

Respondents profile

Table 1 presents respondents' attribute variables. The participation of respondents in the study was such that majority were architects (47.9%) followed by engineers (27.1%). In this group, 86.8% were male and 13.2% were female. In terms of age, 52% were over 40 years old followed by 20-35 years old (30%) with a mean of 43.64 and a median of 42 years old. Most of the respondents were experienced, 63.3% been in practice for over 10 years with a mean of 15.63 and a median of 13 years. The number of project performed by majority of respondents (64.6%) is over 10 with a mean of 37.7 and a median of 20 projects.

Table 1: Respondents Attribute Variable

Variable	Frequency	Valid Percent
Designation		
Architect	13	27.1
Engineer	23	47.9
Quantity Surveyors	12	25.0
Total	48	100.0
Sex		
Male	46	86.8
Female	7	13.2
Total	53	100.0
Age		
20-35 years old	15	30.0
36-40 years old	9	18.0
41-50 years old	10	20.0
Over 50 years old	16	32.0
Total	50	100
Experience		

0 – 5 years	7	14.3
6-10 years	11	22.4
Over 10 years	31	63.3
Total	48	100
Number of projects performed		
0-5 projects	3	6.2
6-10 projects	14	29.2
11-20 projects	11	22.9
Over 20 projects	20	41.7
Total	48	100

Causes of conflicts in construction projects

Table 2 presents results of analysis of 50 causes of conflicts in construction projects extracted from literature. Amongst 31 causes of conflicts were statistically significant for the construction projects in Tanzania with sig. ≤ 0.05. The 31 causes of conflicts determined were further subjected to Kaiser-Meyer-Olkin (KMO) Test and Bartlett's test for sphericity. Additional causes of conflicts listed by respondents are expiration of bonds/guarantee, conflicts in the standard docs and Acts/regulations and insufficient project management skills for project players (contractor, consultant and client).

Table 2: One-Sample Test

S/N	Cause	Test Value = 2					
		T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
1	Building functional problems	-1.632	49	0.109	-0.140	-0.31	0.03
2	Conflict of interests	2.463	52	0.017	0.226	0.04	0.41
3	Consequences of opening work for inspection	-2.192	52	0.033	-0.208	-0.40	-0.02
4	Contractual claims	9.263	52	0.000	0.623	0.49	0.76
5	Cultural differences	-4.964	51	0.000	-0.462	-0.65	-0.27
6	Deficiency in BoQ	7.112	52	0.000	0.528	0.38	0.68
7	Delayed site possession	0.893	51	0.376	0.077	-0.10	0.25
8	Delays in payments	9.412	51	0.000	0.635	0.50	0.77
9	Differences in change order or evaluation	0.468	49	0.642	0.040	-0.13	0.21
10	Different emphasis on project	-2.212	50	0.032	-0.196	-0.37	-0.02
11	Differing site conditions	2.574	53	0.013	0.222	0.05	0.40
12	Difficulty in managing professional group interfaces	-2.133	52	0.038	-0.170	-0.33	-0.01
13	Effects of psychological defenses	-5.222	50	0.000	-0.471	-0.65	-0.29
14	Errors and omission in design	6.285	53	0.000	0.519	0.35	0.68
15	Evaluation of quality and quantity of works	3.628	51	0.001	0.308	0.14	0.48
16	Excessive contract variations	6.482	52	0.000	0.566	0.39	0.74
17	Failure to take on broad opinions	-0.227	53	0.821	-0.019	-0.18	0.14
18	Financial difficulties	5.377	52	0.000	0.472	0.30	0.65
19	Inadequate brief	1.358	53	0.180	0.130	-0.06	0.32
20	Inadequate contractor’s experience	2.757	52	0.008	0.245	0.07	0.42
21	Inadequate site management	3.825	52	0.000	0.302	0.14	0.46
22	Inadequate time for document preparation	1.923	53	0.060	0.167	-0.01	0.34
23	Incomplete drawings and specifications	5.743	52	0.000	0.453	0.29	0.61
24	Inexperienced clients	-0.389	52	0.699	-0.038	-0.23	0.16
25	Insufficient work drawing details	4.794	53	0.000	0.389	0.23	0.55

26	Internal politics	0.389	53	0.699	0.037	-0.15	0.23
27	Language barriers	-4.748	52	0.000	-0.434	-0.62	-0.25
28	Late deliveries	3.040	52	0.004	0.226	0.08	0.38
29	Late instruction	4.559	53	0.000	0.315	0.18	0.45
30	Limited resources	1.840	52	0.071	0.170	-0.02	0.35
31	Liquidated damages	0.893	53	0.376	0.074	-0.09	0.24
32	Local people obstruction	-3.477	51	0.001	-0.327	-0.52	-0.14
33	Lowest price mentality in engagement of contractors	2.018	51	0.049	0.192	0.00	0.38
34	Multiple meaning of specifications	-0.942	51	0.351	-0.077	-0.24	0.09
35	Over designing	0.191	51	0.850	0.019	-0.18	0.22
36	Poor communication	1.729	53	0.090	0.130	-0.02	0.28
37	Poor documentation	3.667	52	0.001	0.264	0.12	0.41
38	Poor financial projection on the part of clients	5.494	53	0.000	0.426	0.27	0.58
39	Power struggle	-4.748	52	0.000	-0.434	-0.62	-0.25
40	Negligence	2.465	53	0.017	0.185	0.03	0.34
41	Shortage of skilled labour	-1.547	52	0.128	-0.132	-0.30	0.04
42	Slow decision making	4.009	53	0.000	0.315	0.16	0.47
43	The use and misuse of standard documents and contracts	1.231	52	0.224	0.113	-0.07	0.30
44	Unclear claims	-0.893	52	0.376	-0.075	-0.25	0.09
45	Unfair allocation of risks	-1.628	52	0.109	-0.113	-0.25	0.03
46	Unfair behaviour	-4.428	51	0.000	-0.365	-0.53	-0.20
47	Unrealistic client expectations	0.240	53	0.811	0.019	-0.14	0.17
48	Unrealistic contract duration	3.428	53	0.001	0.259	0.11	0.41
49	Unrealistic schedules and expectations	-0.275	53	0.784	-0.019	-0.15	0.12
50	Violating the conditions of contract	2.855	53	0.006	0.222	0.07	0.38

Table 3 presents Kaiser-Meyer-Olkin (KMO) Test and Bartlett's test for sphericity results. KMO is a measure of how collected data is suitable for factor analysis and ranges from 0 and 1. The small values of KMO indicate that the use of factor analysis is inappropriate. The acceptable value of KMO is an area that has been widely discussed. Tabachnick & Fidell [25], and Mehmedinović [26] recommend a KMO value of greater or equal to 0.6. On the other hand [27], Field [28], Williams *et al* [29] and Hadia *et al* [27] generally agree that KMO value equal or above 0.50 is suitable for factor analysis. Therefore, the KMO value of 0.507 is considered suitable to proceed with the factor analysis. Bartlett's Test of Sphericity tests the null hypothesis that the correlation matrix is an identity matrix. If the test is not significant then null hypothesis is rejected which means, there is a relationship between the variables. The results in Table 2 reveal a significant Barlett's test statistic value of 694.660 at sig.< 0.05 which confirms that there is correlation between variables used in this study.

Table 3: KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.507
Bartlett's Test of Sphericity	Approx. Chi-Square	694.660
	Df	465
	Sig.	0.000

Table 4 presents factor analysis of 31 significant causes of conflicts. During extraction the number of factors was fixed to five as results 5 components are derived. The top five components are explained by the total variance of about 52.1%.

Table 4: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.838	22.059	22.059	6.838	22.059	22.059
2	3.033	9.782	31.841	3.033	9.782	31.841
3	2.261	7.293	39.134	2.261	7.293	39.134
4	2.175	7.017	46.151	2.175	7.017	46.151

5	1.843	5.946	52.098	1.843	5.946	52.098
6	1.546	4.987	57.085			
7	1.512	4.879	61.964			
8	1.301	4.196	66.159			
9	1.259	4.061	70.221			
10	1.097	3.538	73.758			
11	1.037	3.345	77.104			
12	0.906	2.924	80.028			
13	0.812	2.618	82.646			
14	0.783	2.527	85.172			
15	0.648	2.091	87.263			
16	0.575	1.854	89.118			
17	0.494	1.593	90.711			
18	0.481	1.552	92.263			
19	0.410	1.321	93.584			
20	0.379	1.222	94.806			
21	0.347	1.118	95.925			
22	0.283	0.913	96.838			
23	0.240	0.773	97.611			
24	0.163	0.525	98.136			
25	0.132	0.426	98.562			
26	0.118	0.382	98.943			
27	0.098	0.318	99.261			
28	0.084	0.270	99.531			
29	0.064	0.208	99.738			
30	0.045	0.146	99.885			
31	0.036	0.115	100.000			

Table 5 presents rotated component matrix. Rotated matrix was preceded by the component matrix. The component matrix was rotated to achieve simple structure, where each factor has large loadings in absolute value for only some of the variables, making it easier to identify. On the coefficient display format, small coefficients with absolute value below 0.5 were suppressed. Consequently, only factor with scores greater than 0.50 are shown on the rotated component matrix. The five components determined are client, consultant and contractor related causes, shared and other causes. The first factor (Client) is composed of six variables, the second factor (Consultant) factor is composed of five variables, the third factor (Contractor) is composed of six variables, the fourth factor (shared) is composed of four variables and the last factor (Other) is composed of four variables. Using reliability analysis, the internal consistency of variables in each component was calculated using Cronbach's Alpha. According to Gaur & Gaur (2006) the value of 0.7 and above for Cronbach's Alpha is appropriate when testing internal consistency of variables. The results in Table 3 indicate that the first three components have an acceptable component reliability value of over 0.7 and last two have values of 0.654 and 0.615 respectively. The two last components will be excluded from a wider discussion because of low values of Cronbach's Alpha.

Table 5: Rotated Component Matrix

Causes	**Components**					**Cronbach's**
	1	2	3	4	5	**Alpha**
Client related causes (12.02% variance)						**0.783**
Unrealistic contract duration	0.829					
Violating the conditions of contract	0.740					
Errors and omission in design	0.689					

Poor financial projection on the part of clients	0.643				
Unfair behaviour	0.550				
Financial difficulties	0.513				
Consultant related causes (11.15% variance)					**0.764**
Incomplete drawings and specifications		0.714			
Evaluation of quality and quantity of works		0.708			
Delays in payments		0.664			
Excessive contract variations		0.659			
Insufficient work drawing details		0.553			
Contractor related causes (10.92% variance)					**0.763**
Power struggle			0.703		
Negligence			0.648		
Effects of psychological defenses			0.630		
Inadequate contractor's experience			0.610		
Conflict of interests			0.544		
Language barriers			0.539		
Shared causes (9.58% variance)					**0.654**
Different emphasis on project				0.687	
Consequences of opening work for inspection				0.671	
Cultural differences				0.625	
Differing site conditions				0.537	
Contractual claims					
Local people obstruction					
Other causes (8.43% variance)					**0.615**
Late instruction				0.694	
Difficulty in managing professional group interfaces				0.654	
Poor documentation				0.587	
Late deliveries				0.571	

Discussion

This study was dominated by male respondents (86.8%). The age and experience means of respondents were 43.64 and 15.63 respectively with majority (87.5%) having worked on over 10 projects. The study has determined 31 causes of conflicts that are significant for construction projects in Tanzania. Some of these causes were revealed in previous studies implying that they do exist in other countries. For instance, unfair behavior and psychological defense mechanisms [6, 10]; delays in payment, contractual claims and differing site conditions [1]; poor financial projections on the client's side [4]; and delays in payments, excessive contract variations, differences in evaluation and project documentation [8].

Five categories of causes of conflicts in construction projects were determined. The shared and other causes scored an Alpha value of less than 0.7 i.e. 0.654 and 0.615 respectively and thus failed components reliability. The client related causes comprise of unrealistic contract duration, violating the conditions of contract, errors and omission in design, poor financial projection on the part of clients, unfair behavior and financial difficulties. Errors and omission in design is commonly associated with the consultant. The works of Ntiyakunze [5] and Elmabrok *et al* [8] relate design errors to the client on the aspect of cheap design hired instead of quality which is dominating in this category in Tanzania and Libya. The second category is consultant related causes which comprise of incomplete drawings and specifications, evaluation of quality and quantity of works, delays in payment, excessive contract variations, and insufficient work drawing details. The delays in payment have been commonly associated with the clients' failure to honour payment certificates in the works of Narh *et al* [7] and Elmabrok *et al* [8]. However, the study by Ntiyakunze [7] and Elmabrok *et al* [8] reveal that delays in payments by the consultant is manifest in delays in evaluation process. On that aspect, Ntiyakunze [5] found that the

dominating cause of conflict in the category of delays in payments in Tanzania was unnecessary bureaucracy in payment process. The contractor related causes are: negligence, inadequate contractor's experience, power struggle, effects of psychological defenses, conflict of interests and language barriers. This finding is consistent with the previous works that attempted to categorize causes of conflicts using different approaches. Such approaches are conflicts related to the nature of contracts and conflict related to role functions [5]; behavioral factors, contractual problems and technical problems [12]; owner related, contractor related, consultant related, third party and human behavior related, and, design and contract related [14]; and owner, consultant and contracts and specifications [2]. The approach by Soni *et al* [14] and Rauzana [2] is partly comparable to the findings of this study for recognizing the position of client, consultants and contractor in conflicts.

Conclusion

This paper sought to determine significant causes of conflicts in construction projects in Tanzania and condense these causes into relevant groups. In the first stage of analysis using one sample test, 31significant causes of conflicts were determined. In the second stage of analysis using principal component analysis, five components of causes of conflict were extracted and these are client related, consultant related, contractor related, shared and other causes of conflicts. In the last stage of analysis that aimed at calculating the reliability of variables in extracted components using Cronbach's Alpha, only client, consultant and contractors related causes of conflicts passed the reliability test. The study therefore concludes that there are 31 significant causes of conflicts appreciated by the study population and these causes are categorized into client related, consultant related and contractors related causes of conflicts. This study has attempted to group causes of conflicts that will lay a base for projects teams to devise strategies to resolve conflicts based on their emergence before they can escalate to disputes. However, further studies in this area may seek to explore conflicts between project team members such as consultants and contractors, contractors and subcontractors and clients and contractors or consultants.

The study was mainly affected by low response from the delegates which may be attributed to many factors such as the nature of activities of the event such opening ceremony and paper presentations sessions. Similarly, the use of questionnaires which one of their disadvantages is low response was evident to mailed questionnaires. As a result, these findings cannot be entirely generalized.

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