

# Analysis of Causes of Conflicts within the Design Teams in Building Projects in Tanzania

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## Abstract

*A building design team is usually composed by different professionals who have specialized skills, coupled with varying altitudes, behaviors, interests and views of life. Under normal circumstances, most building design teams include but not limited to architects, quantity surveyors and engineers (i.e. services/MEP engineers, structural engineers and civil engineers). There is a sense that, conflicts are inevitable within the design team. This paper analyses causes of conflicts within design teams in building projects in Tanzania. The study employed descriptive research design to analyse data. Questionnaire survey was the main data collection tool adopted. Results showed a number of reasons for occurrence of conflicts within design team members, varying from one project to another. Causes also depended on contractual relationship existing between design team members. These causes were analyzed in order to determine major, moderate and minor causes whereby causes could be further categorized into contractual, behavioral and technical causes. The paper recommended compliance to professional practice, improve appropriate communication system and coordination.*

## Keywords

*Conflicts, Design Team, Building, Projects, Tanzania.*

## I. INTRODUCTION

Building projects are the temporary endeavor undertaken to create a unique building product. They are temporary as they have a definite beginning and definite end; the end occurs when the project objective has been achieved. It has also been noted that the uniqueness of the product is due to the difference in ownership, design, location and workmanship [31]. The success of the building construction project is achieved when designed and constructed in accordance with specification and completed within time and cost originally anticipated [30]. The success of the project and influencing factors depend on the nature, the type of activity, project environment and project management [18]. Project management is an

art of directing and coordinating human and material resources throughout the life of the project to achieve pre-determined objective of scope, cost, time, quality and participation satisfaction [29]; [34]. Achieving the best out of this is only possible for a conflict-free design team.

Project management team for building projects also known as design team commonly includes an architect, a quantity surveyor and an engineer (i.e structural, civil, and services/MEP - mechanical, electrical & plumbing engineers). Design team provides planning, design and construction administration services to the project. They are responsible to create solutions to meet owner's objectives within a framework of budget, schedule and other regulatory requirements as building codes. The size of the design team depends much on the size and complexity of the work [3].

Design team involves different firms with people of specialized background and different experiences, who pursue different aims, possess specialized skills and capability and use different working styles. Multidisciplinary groups often experience a clash of views, interest, goals, and values [4]. [40] observed that in the working place conflict is unavoidable due to different views of life and varied personality. In a similar fashion, design teams for building construction projects do confront conflicts and tensions during the process.

Conflict is a state of opposition, disagreement, or incompatibility between persons or a group of persons over ideas, interests, beliefs, feelings, behavior or goals. Therefore, conflicts do happen between various members in a team based on the experience in various building projects [30]. Also, according to [22], a conflict can be highlighted as a doubt or questioning, opposition, incompatible behavior, controversy or antagonistic interaction. Conflict is a clash between hostile or opposing elements or ideas [7]. Conflict is an incompatible state of affairs which occurs when the behavior of one person is interfering or obstructing the actions of another. The conflict may lead into direct and indirect costs. The direct costs found include,

management of time and delay of the project while indirect costs may include degeneration of working relationship, mistrust between participants and resultant poor workmanship [30].

[38] emphasized that construction conflicts arose primarily due to the following: lack of communication, distrust, misinterpretation of contracts, uncertainties about roles and responsibilities and imbalance in risk allocations.

Conflict causes difficulties in communication between parties, breaks relationship and reduces the effectiveness of the works. Many problems on the design changes, delays and difficulties during the construction phase originate from unresolved conflicts [6]. According to [38], conflicts involve communication problems which may affect the relationship between design team members and impacts on the effectiveness of the job of the project. Conflict during construction works may lead to increase in project cost, delays of the project, loss of profit and damages of business relationship.

[40] in his thesis explored the nature of conflicts, the conflict process, conflict resolution skills and conflict management techniques in the case of Icelandic companies. Also, [39] assessed the relationship conflicts in construction management and how it affects performance of construction.

In Tanzania, [30] observed that the adverse (conflictful) environment in building projects lead to failure of the project in term of time, budget and satisfaction. Also, [24] observed conflicts to be the cause of delay and disruption in construction projects. [30] focused on cause and management of conflict within a building project in Tanzania building projects. [12] also focused on the causes and ways to minimize conflicts between main contractor and other key participants in building projects.

This paper therefore focuses specifically on conflicts among the design team members i.e. architects, quantity surveyors and engineers (i.e. service engineer, structural engineer, civil engineer) as a sub unit of a broader team in building projects by examining causes, dominant types and address appropriate approaches to mitigate conflicts among members of the design team.

## II. LITERATURE REVIEW

### A. Introduction

This section reviews related works pertaining to the nature of the design team in building projects in Tanzania in relation to conflicts within the design team members. It provides general views about conflicts within the design team. It further reviews duties and responsibilities of each member in the design team and

also discusses conflicts management approaches that aim to minimize conflicts among team members.

### B. Construction Project

A construction project is a temporary endeavor undertaken to accomplish a task within a defined time [31]. Project is a particular and unique activity that has a definite start time and finish times. A construction project should pass through series of sequential stages between start and end, it should have its own budget, its activities should be unique and non-repetitive [27]. Construction projects are complex in nature and the product are unique [35]. Also, construction projects should use resources like labor, money and equipment efficiently [11].

Construction projects have their own organizations, structures and are managed by the project team. The project team includes a client, design team or consulting team itself, contractor and sub-contractors [27]. Their involvement in various stages of the project will depend of the form of contract.

Design team is the best option to improve and increase the efficiency of the project in the construction. The design team handles the project by the application of their skills, knowledge and experience and they overcome every possible errors in the project and hence increase efficiency of the construction industry around the world.

### C. Design team

Design team known also as consulting team comprises of different professionals who perform expert tasks on a project. Design team plan, monitor, schedule, supervise and manage the different activities which are involved in the construction process according to the plan which will help to finish the project in time and in the given budget [34]. Fig. 2.1 describes benefits of hiring design/consulting team.



Fig. 2.1: Benefit of hiring consultancy [34].

This team provides advice and defines the project, develop and coordinate the design, prepare information and tender documentation, inspecting the work of the contractor and also provide contract administration. The size of this team depends much on size and complexity of the project. The members of design team that are required in most projects are Architect, Quantity surveyor and Engineers.

#### ***D. Roles of Design Team Members in Construction Industry***

##### ***1) Architect:***

[8] defines an architect as a qualified professional or organization who designs buildings and supervises their construction. Traditionally, an architect is regarded as a leader of design team and is the first person to be appointed by client at the start of a new project. Also, in traditional single stage tendering is sometimes referred to still as architect-led tendering [5]. Architect's roles include;

- i. To the client to formulate his/her requirements in an understandable form, bearing in mind any statutory conditions that apply. It will be advantageous to the client if s/he could be shown work of similar nature so as s/he could obtain visual impression of shape, type of material and size. But if this is not possible, sketches and/or model can be used. It is often difficult for the client to visualize the true structure from these artistic representations [3].
- ii. Under traditional method of procurement, the architect needs to help client to bring together a team of giving specific services including quantity surveyor, structural engineer and service engineer etc. Also conceptual design can be produced for client to approve before more detailed drawings are prepared and finally contract drawings, schedules and specification for tender are prepared. The architect and other design team members will assist the client in selecting the contractor [3].
- iii. Preparing certificates of interim valuation for payment also approves variations that occur during execution of the work.

An architect should be visiting site periodically for inspection to ensure that works being carried out on site are in compliance with architectural design and specification [3].

##### ***2) Quantity surveyor:***

Quantity surveyor is a qualified professional responsible for drawing up bills of quantities and advising the clients on contractual and financial matters [8]. Quantity surveyor (QS) identified as the cost manager in construction, plays a critical role ensuring that clients gain value for the invested money [33]). This is a professional in the construction industry concerned with construction cost and contracts, with expertise in construction cost consulting and cost estimating & pricing analysis, cost

planning and commercial management throughout the entire life cycle of the project from the inception to post completion.

Quantity surveyor has roles to perform in construction industry at all stages of construction. Has a role before work starts, during construction process and after construction.

According to [33], quantity surveyor's roles are as follows;

- i. Quantity surveyor has acquired expertise in the use of standard form of contract and regularly works for advice and guidance on contractual matters. They prepare contract document ready for the execution of the contract by the parties, a duty which requires particular care and attention to details. Quantity surveyor has duty to ensure that all action taken in relation to financial administration of the contract will be fair to both parties.
- ii. Prepares forecast of rate of spend during the construction period and advise client on anticipated liability for payment on account to the contractor, giving date and amounts. These amounts are shown in the bills of quantity.
- iii. Makes preliminary arrangements for preparing valuations for payments on account in consultation with the contractor's surveyor. Analyses preliminaries and calculate amounts of time related payments and percentage rate of cost related payment.
- iv. Prepares valuations for payment on account at the interval stated in the contract and agreed with contractor's quantity surveyor. Also, estimate cost of variations on receipt of copies of architect's instruction and then measure and value also price daywork vouchers. After valuation prepare financial report for architect and client for interim payment.
- v. Advises the architect, if requested on expenditure of provisional sum also measure and value work carried out by the main contractor against provisional sum and adjust contract sum accordingly also measure projects based on schedule of rate or bills of quantities as the work proceeds either on site or architect drawings and value at contract rates.
- vi. Checks for main contractor's notification for changes in levies, contribution and taxes if applicable, alternatively apply price adjustment indices to amounts included in interim valuations. He further advises architect on contractor's claim if any for loss and expense payment.
- vii. Prepares final account and agree details and total with contractor's claims.

### **3) Engineer:**

Generally, an engineer is qualified professional who designs structures, technical services or public utilities and supervises their construction and maintenance [8]. The term engineer is a very broad one covering a wide range of disciplines who uses the science and mathematics to develop solutions for technical application. This study focuses on structural engineer and building services engineer who are core part of design team.

Engineer should visit the site periodically for inspection to ensure that in general, the work being carried out is in compliance with the engineering drawings, schedule and specification just like an architect does. This information is required to assist quantity surveyor in preparation of bills of quantity [3]. Engineer must be available to modify or re-design their individual aspects as may become necessary [3]. Other forms of engineers are chemical engineers, process engineers, environmental engineers, civil/highway engineers and ICT engineers etc.

### **4) Structural and Civil Engineer:**

Structural engineer designs assess and inspect structure to ensure that they are efficient and stable. Structural engineers work on a very wide range of structure including building, bridges, oil rigs, ship and aircraft. The registered structural engineer, the consideration of strength, shape and function are paramount in their conception of the framework of a structure [5].

The specialist skills of structural engineer include calculating loads and stresses, investigating the strength of foundation also analyzing the behavior of beams, slabs and columns. This procedure will ensure that the structure required performs its function safely, economically and with a shape and appearance that is visually satisfying.

Roles that are performed by structural and civil engineers in design team according to [5] are as follows;

- i. They need to design the structure and make all necessary checks and calculations to ensure that foundations will be sound that the floor and roof will not fall down.
- ii. To ensure that the construction will remain safe and serviceable for the length of its intended lifetime.
- iii. Undertaking technical and feasibility studies and site investigations.
- iv. Developing detailed structural designs and provide drawings.
- v. Managing, supervising and visiting contractors on site and advising on structural issues.
- vi. Managing changes when the clients change their mind about design and identifying, formalizing and notifying relevant parties of changes in the project.

### **5) Service/MEP Engineer:**

A building service engineer plans, designs, monitors and inspects systems to make building comfortable, functional, efficient and safe. These systems include lighting, heating, ventilation, air conditioning, water and drainage, ICT, lifts, and escalator [5]. Complex buildings like hospitals, airports and factories may require additional systems like specialist gas distribution and bacteria control.

According to [5], building services engineers are responsible for ensuring the cost effective and environmentally sound and suitable design including maintenance of energy using elements in buildings. With the increasing multidisciplinary demands, a building service engineer tends to specialize in one of the following;

- Electrical engineer.
- Mechanical engineer.
- Plumbing engineer.
- ICT engineer.

Their roles are outlined as follows;

- i. Advising architect on energy use and conservation in a range of building and sites, aiming to minimize the environmental impact and reduce their effect.
- ii. Managing and forecasting spending, using whole life cycle costing techniques, ensuring that work is kept to budget.
- iii. Designing all services drawing for the project and working with detailed diagrams, plans and drawings.
- iv. Advising Architect on specifying equipment as required for the project.
- v. Overseeing and supervising the installation of the building systems and specifying maintenance and operations procedures

## **E. Conflicts In General**

[10] theorized that a conflict is divided into two categories; constructive and destructive. A constructive conflict is referred to as that in which all participants are satisfied with the results of the conflict and have gained from it, while in destructive conflicts each of the parties involved feels as if they lost as a result of the conflict and now dissatisfied with the final conclusion.

### **1) Stages of conflicts**

According to [50] stages of conflicts were identified and named as latent conflicts, perceived conflicts, felt conflicts, manifest conflicts and conflicts after math.

#### **▪ Latent conflicts:**

This is characterized by the source of the conflict such as role conflict, competition over scarce resources, drives autonomy and divergence of subunit goals. The role conflict occurs when an organization

has more than one role in the project as it might be difficult to determine the current role of an organization. Competition over the scarce resources occurs when the aggregate demand of the participant for resources exceed the resources available. Drives for autonomy occur when one part seeks to control the activity which is under the control of other part. Divergence of subunit occurs when the parties who have to cooperate on the joint activities are unable to reach an agreement on cooperation action.

▪ **Perceived conflicts:**

This generally follows after the latent conflict has occurred. At this stage, at least one part is aware that there is a conflict but neither of the party is upset about it. According to Vaaland and Hakanson in [30] the perceived conflict may be resolved by improving communication between parties when it is without the existence of the latent conflict.

▪ **Felt conflicts:**

This stage follows after perceived conflicts, both parties are aware that there are in conflict but they do nothing about it. This normally results into stress, tension and hostile feelings.

▪ **Manifest Conflicts:**

This involves openly aggressive behavior from mild passive resistance through sabotage to actual physical conflicts.

▪ **Conflict aftermath:**

This is the response and the outcome of conflict which may involve changes. In this stage, there might be no active response but there will be outcomes.

Therefore, the identified five stages of conflicts indicate that if the conflicts are discovered and managed in the early stage, it will bring the positive changes to the project. Also, the probability of having the negative changes to the project will be high if it is discovered late.

**2) Classification of conflicts**

Conflicts may be classified in basis of organizational levels, typology and its values. [54] have classified conflicts basing on the organizational levels as intrapersonal conflicts, interpersonal conflicts, intra-organization conflicts and inter-organization conflicts. [46] classified conflicts based on typology into three groups which are open conflicts, hidden conflicts and latent conflict. Basing on its value; conflicts has been classified into two groups which are destructive conflicts and constructive conflicts [48].

• **Classification of conflicts basing on the Organizational levels:**

There four types of conflicts which are intrapersonal conflicts, interpersonal conflicts, intra-organization conflicts and inter-organization conflicts [54].

Intrapersonal conflicts are also known as intra-individual or intrapsychic conflicts [49]. These are the conflicts which are within the person. An individual may sometimes perceive an environment which made his or her needs to be in conflicts [54]. It occurs when a person is required to perform a task and roles that does not match his or her area of expertise, goals and values [49]. Hence this is happening when personal decision has to be made. In other words, this can be regarded as the conflict of mind.

Interpersonal conflicts occur between two individuals or persons. According to [49], it refers to conflicts between two or more organizational members of the same or different hierarchy levels of unit. [15] observed that interpersonal conflicts arise in a workplace due to natural differences in human's personality, beliefs and work ethics.

Intra-organization conflicts occur among the various groups within an organization. They are also known as intragroup conflicts. According to [49] these conflicts may occur due to incompatibility or disagreement between some or all the members of the group and their leader. The main types of the intra-organization conflicts are task conflicts, process conflicts and relationship conflicts.

Furthermore, inter-organization conflicts exist between two or more organization or independent group of the large organization [54].

• **Classification of conflicts based on the typology:**

According to [46] conflicts may be categorized in respect of the typology as open conflicts, hidden conflicts and latent conflicts.

Open conflicts occur when it is everyone knowledge while the occurrence of hidden conflicts is known by some people only. Also, latent conflicts are the one which comes into surface if and only if something changes the status quo.

• **Classification of conflicts based on its value:**

Conflicts are not only unavoidable but also a valuable part of life. [48] has classified conflicts as either destructive or constructive.

Constructive conflicts bring about the productive changes in the organization and health competition [54]. [48] added that constructive should be properly managed so as to prevent the mature of destructive conflicts. Also, constructive conflicts help to expose problems, reduce risks, integrate ideas and produce a range of solutions, develop understanding, evaluate alternatives and improve solutions.

Destructive conflicts prevent progress and suspend success. In this case a conflict becomes dangerous and disruptive when parties become hostile to each other [48]. The indicators that conflicts have

become unproductive are; a conflict becomes personal, a conflict increases with each meeting rather than reducing, communication becomes one way and parties become fixed and will not accommodate alternative views [44].

Generally, the classification of conflicts depends on someone's perception and the area in which conflicts occurs.

### **3) Conflicts and Disputes**

The difference between conflicts and disputes are often not clear since the two terms have often been used to describe similar situations especially in construction industry [1]. Conflicts and disputes share same sources such as information, resources, individual behavior/personality clashes and inter/intra organizational issues. However, the terms conflict and dispute are two distinct terms. According to [16] the term conflict is known but it is often used interchangeably with dispute. This often generates confusion which gets in the way of learning. To enhance management of conflict, it is appropriate that the term conflict is distinguished from dispute.

Conflict is a disagreement in opinions between people or group, due to difference in attitude, beliefs, values and needs. In the business world, differences in such characteristic as work experience, personality, peer group, environment and situation, all lead to difference in personal attitudes, beliefs, values or needs [37].

According to [37] there are three themes among the definitions of conflict. The first is that if conflict exists or not is a perception issue. The perceived difference may not be real; conversely if the difference is real but not perceived, there is no conflict. The second is that there is an interdependence among parties i.e. each has the potential to interfere with the other. Third is that, there are blockage, opposition and scarcity resources. For example money, power and prestige are limited, their scarcity create blockage behavior, when one party blocks the means to a goal or interest of another a state of conflict exists.

Dispute is the subsequent stage that involves the resolution of legitimate issue [16]. Also, [41] defines dispute as an argument about an issue concerning project operation, usually resulting from a debate over difference in two or more parties understanding of situation. A dispute must be resolved, it cannot be managed. Disputes are usually resolved by third parties (courts arbiters) [28].

### **F. Conflicts within a Team**

A team is a group in which members work together intensively to achieve a common group goal. Team members have a common purpose, performance

goals are connected to this purpose for which everyone in the team is held mutually accountable [14].

According to [40], conflicts in a workplace are inevitable due to the different views of life and various personalities. Therefore, conflicts within the team are also unavoidable due to the fact that the team contains the group of people who works together.

According to [43], a conflict denotes serious disagreements over needs or goals among the team members. The symptoms of conflicts within the team includes not to complete the work within the required time and quality, not to return phone calls and emails, hoarding the information which should be shared, finger pointing, absenteeism, gossip, passive behavior, hostility, complaining, verbal abuse and physical violence

Therefore, due to the fact that a conflict is inevitable within the team; it will be good if its management starts at the beginning of the above symptoms.

### **G. Types of conflict within a team**

According to [23], types of conflicts which occur in a team are; the task conflicts, process conflicts and relationship conflicts. Other types of conflicts which have been recognized by [4] are cognitive conflicts, affective conflicts and process conflicts.

A task conflict refers to the disagreement among people about the goals to be achieved or content to be performed. It involves differences in viewpoints, ideas and opinions. Conflicts about distribution of resources, procedures, policies, judgment and interpretation of the facts are good examples of task conflicts.

Process conflicts are conflicts about how task accomplishment should proceed in the work unit, who's responsible for what, and how things should be delegated. Process conflicts include disagreements about assignments of duties [32].

A cognitive conflict consists of the expression of differences in viewpoints, ideas and opinion that are directly related to the team task and its accomplishment. This includes the perceptions of disagreements among team members concerning the content of their decisions as the team moves towards a collective decision [32].

Relationship conflicts are the perception of interpersonal incompatibility which includes annoyance and animosity among individual and tension, irritation and hostility among team members [36]. Examples of relationship conflict disagreements

about values, personal or family norms or about personal taste. According to [32] relationship conflict is also referred to as affective conflicts

### H. Causes of conflicts in construction projects

Many researchers have identified various causes and variable of conflicts in construction. [42] acknowledged behavioral problems, contractual problems, and technical problems due to uncertainty and low experience as three main root reasons of conflicts. [20] indicated five primary sources of conflicts in construction projects, which are; existence of error, defects or omission in the contract document, failure to count the cost at the commencement of the project and change of the conditions.

[26] identified the contractual matters, including variations, extension of time, payment, quality of technical specification, availability of information; administration and management are mainly the source construction conflicts.

According to [16] other causes of conflict are defect management, clarity and completeness, poor communication, failure to appoint a project manager, discrepancies or ambiguities in contract document, failure to respond in timely manner and absence of team spirit among the participants.

According to [15], conflicts can be caused by delay in approval of variation statement, discrepancies between contract documents, delay preparation and approval of drawings, quality assurance and waiting time for approval of test and inspection.

According to [2], [19], conflicts in design team are related to the following; consultants' failure to understand their responsibilities under the design team contract, over-design and under-estimation of the involved, late information delivery and cumbersome approaches to requesting information, design and specification oversights and incompleteness of drawings (architectural, structural & MEP) and specifications.

### I. Conflict Management Approaches

According to [13], conflicts should be settled, resolved, transformed or managed for reaching an agreement, restoring harmony to an organization or relationship and improving the design's team ability to face challenges together in the future. Management of conflicts includes resolution plus such initiatives as prevention and containment. Conflict management approaches based on the two motives which are a concern for others and concern for self [9]. Also, [21] and [9] recognized competition, accommodation, sharing, collaboration and avoiding as the conflict management approaches.

According to [4], people respond differently to a conflict situation, it is widely assumed that each person has a preferred way of dealing with a conflict, a so-called conflict style. Conflict style is based on the two dimensions "assertiveness" and "cooperativeness". Assertiveness is the extent to which a person attempts to satisfy his or her own concern. Cooperativeness is the extent to which she or he aims to satisfy another's concerns as illustrated in Fig. 2.2.

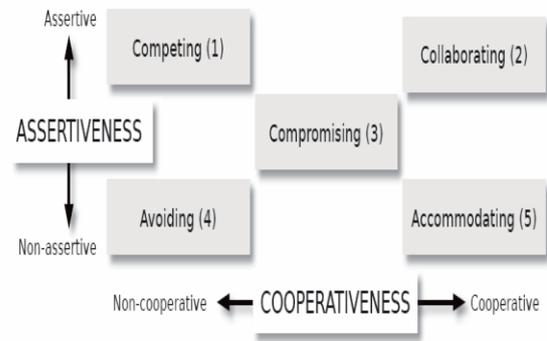


Fig. 2.2: Conflict management approaches [4].

#### 1) Competition:

Competing is assertive and non-cooperative, a more power oriented style [4]. This is high concern for self and others motivation [13]. This involves the desire of achieving the end at the expense of someone else, also known as win-lose situation. According to [40], competition may help to resolve conflicts in a quick way and it responds to the violence. However, this approach affects the relationship with the opponent in the long term and it takes a lot of energy to exhaust in the same way.

#### 2) Accommodation:

Accommodating is non-assertive and cooperative, with low concern for self and high for other parties. This supports a positive climate and is useful when keeping harmony is high priority [4]. In this there is the slight image of competition, it involves the entirely giving in to someone else's concern without making any effort of achieving your own ends. It is used when manager finds that he is wrong, the issue is important to others than to yourself, the manager is outmatched and losing so he wants to minimize the loose and it is suitable when a manager wants to build social credit for later use [21]. Generally, it is more useful when there is the expectation of obtaining something which is more useful from the other party.

[40] recognized that this approach resolves more important issues while giving up on the less important issues and provides an opportunity of assessing the situation from the other point of view. Though it reduces the confidence of responding to the aggressive response, it can be taken as an advantage by an opponent and some of the supporters may not like the use of these methods.

3) **Compromising:**

Compromising is located between assertiveness and cooperativeness. The objective is to find a suitable, mutually acceptable solution that partially satisfies all parties [4]. This method, both party give up and get something. Parties are moderate and incomplete satisfied. It occurs when the concern for self and other is medium. It also occurs when the goals are important but not much as potential disruptions of more assertive modes, opponent of the equal power are committed to mutual exclusive goals. When achieving temporary settlement of the complex issues and when arriving the solution under time pressure [21].

Compromising in conflict management is useful if time is one of the most important conditions and it decreases the level of tension and stress which may lead to misunderstanding. However, in this method the outcomes might not be satisfied by both parties.

4) **Collaboration:**

Collaborating is assertive and cooperative. When collaborating, a person tries to work together with other person to find a solution that satisfies the needs of everyone concerned [4]. This is the method which requires the integration of each party concern. It is used when the concern for both parties are too important to be compromised, the objective of the manager is to learn, wants to merge insight from the people with different perspectives, and when a manager wants to work through feeling which has been interfered with the relationship [21].

5) **Avoiding:**

Avoiding is non-assertive and non-cooperative, with low concern for self and low concern for other parties thus not addressing the conflicts [4]. This reflects withdrawal from or neglect of the art of interest. It happens when the concern for self is lower than for the others [9]. It also occurs when more important issues are pressing, potential disruption outweigh the benefit of resolution and when a manager wants to let the people to cool down and regaining [21].

According to [40] avoidance lowers the stress and allows the time for preparation. However, it may be interpreted as an agreement if there is no any action done and it may also affect the relationship with some parties which expect some actions.

Furthermore [51] grouped the styles of managing and responding to conflicts into active response and passive response of conflicts. Passive response can be in form of denial, avoidance and retreat. When applying the passive response of conflict the objective of the project may go unmet and also tension and hostility may increase. Active response may either be aggressive or creative in nature.

Aggressive response includes the attempt of dominating the weaker party. This reduces creativity and led to the environment where the poor decision will be allowed to go unchallenged. Also, creative response is introduced by the collective bargaining where by parties are required to join and solve their problems.

Therefore, the passive response of conflict might be avoidance and accommodation while competition, collaboration and compromising are active responses.

**J. Effects of conflicts**

Effects of conflict are mainly observed on the project success, team performance and team satisfaction. Conflict may lead to the opportunity for growth and development of an organization if it is handled in a positive way. However, it may be harmful to the relationship if it is not managed well.

[40] recognized the unhealthy response of conflicts as the inability to identify and respond to the things that matters to the other person, explosive, angry, hurtful and resentfully reactions, inability to compromise other person's sides, fear and avoidance of conflicts.

Also, the healthy response of conflicts are the ability to recognize the things that matter to the other persons, a readiness to forgive and forget, the ability to seek compromise and avoid punishing, calm, non-defensive and respectful reactions.

Therefore, if the manager has enough skills on the management and handling of conflicts in the projects; conflicts may led to the healthy relationship within the organization and hence the achievement of the projects.

**K. Impact of conflicts**

Many years ago, many people had been taught to consider conflict as a negative impact [39]. Nowadays two different orientations have evolved which are functional and dysfunctional. Functional form or constructive conflicts, supports the goal of the firm and improve its performance. Conflict encourages great work effort and task performance and one of the main advantages is that it gives members a chance to identify the problems and see the opportunities. Conflicts improve and encourage new ideas, learning and growth among individuals and also members can learn more about themselves.

Also, according to [52] four assumptions aligning with constructive conflicts were introduced and these are;

- Conflict is a normal, useful process.

- All issues are subjected to change through negotiation.
- Direct confrontation and conciliation are valued.
- Conflict is a renegotiation of an implied contract.

The first assumption means that although conflict is a complicated process, it can strengthen relationship. If the conflict is managed correctly, it will lead to stronger, healthier and more satisfying relationship also increases cohesiveness of group. With reference to second and third assumptions the main idea is to recognize conflict as soon as possible and work through it in a productive way [53].

Dysfunctional conflict it is believed to be destructive. This form of conflict usually hinders organizational performance and leads to decrease productivity. This form is characterized by competing individual interests overriding the business's overall interests.

**L. Strategies for avoiding conflicts and its Effects within the building projects in Tanzania.**

According to [47], the following steps and strategies that can be used to minimize conflicts in construction industry.

**1) Expecting conflict**

The source of conflicts, technical issues, administrative personality and cost will vary with the phases of the project. With an experienced team, the focus of conflicts is within the team itself. If the project goals are not clearly defined the focus of the conflict will likely be between project leader and other members. The project leader should analyze the reasons of conflicts.

**2) Planning ahead to handle conflict**

After analyzing the source, intensity and focus of conflicts, how to deal with conflict should be planned involving developing framework within design team members to views conflicts objectively.

**3) Facing the conflicts**

Conflict is one of the things most of us dislike intensely, it is inevitable and also try to avoid conflict. Some people wrongly hope that conflict will go away if it is ignored. In fact, conflict ignored more likely get worse. The best way to reduce conflict is to deal with it.

**4) Surface the real issues**

Conflicts that remain below the surface can have negative impacts on a project in many ways, such as distorted or withheld information, slipped schedules, unplanned absence from project meeting, lack of initiatives to solve problem. Surfacing the real issue can be accomplished by getting all the background information associated with the conflict.

**5) Resolving the conflict**

Due to dynamics and sometimes nature of projects, a substantial amount of management time is dedicated to resolving conflicts. In some cases, disagreement can be handled by straight forward decisions. All project participants involved in a conflict situation must work together to achieve a win-win situation for everyone.

**6) Look for win-win alternative**

Of the inter-personal conflict resolution styles, confronting (negotiating and problem solving) is the most effective approach because it starts with an understanding by both parties that they must search for solution that satisfy everyone.

Cut your losses when necessary: sometimes a project may have gone too deep in a hole, which leads to conflicts.

**III.METHODOLOGY**

The study in this research describes the behavior of design team members in the conflict situation. Therefore, descriptive research design was adopted for this research.

The targeted population was the design team firms which are consulting architectural firms, quantity surveying firms, structural engineering firms and services/MEP engineering firms.

The sample was selected from the list of consultancy firms based in Dar es Salaam. The list of these firms was obtained from Architects and Quantity Surveyors Registration Boards (AQRB) and Engineering Registration Board (ERB) as depicted in Table 3.1 whereby under probability sampling disproportions stratified sampling was used to study differing specialization within the consulting team members.

**Table 3.1: Number of registered firms**

SN	Register firms	Number of firms
1.	Architectural firms	117
2.	Quantity Surveying firms	102
3.	Structural/ Civil Engineering firms	93
4.	Service Engineering firms	30
<b>TOTAL</b>		<b>342</b>

**Source:** AQRB and ERB, 2017

Using sample design below a sample of 25 respondents was obtained as shown in Table 3.2.

$$K = \frac{N}{n}$$

Where: N= Total number of population belonging to each category.

n = number of selected sample on each category.

K = Sampling interval.

**Table 3.2: Number of sample size**

SN	Register firms	Number of firms	Sample Size
1.	Architectural firms	117	9
2.	Quantity Surveying firms	102	10
3.	Structural/ Civil Engineering firms	93	3
4.	Service Engineering firms	30	3
<b>TOTAL</b>		<b>342</b>	<b>25</b>

Questionnaires were main tools used to collect data. As the sample of this study is relatively small, data was analyzed by calculating frequencies and mean scores. The mean score was calculated as follows [25];

$$\frac{\sum(FXS)}{N}$$

Value of mean score =

- Where F = frequency of response for each score
- S = score given to each cause
- N = Total number of response for each factor.

The mean score comparison was therefore used to rank the results by considering the results of the mean scores obtained and grouped them as high, medium or low using ranges provided in Table 3.3.

**Table 3.3: Mean score comparison table**

SN	Mean score	Ranking
1.	3.1-5.0	High
2.	2.1-3.0	Medium
3.	1.0-2.0	Low

Therefore, a five (5)-point Likert scale was used to weigh different factors whereby 5 meant very high, 4 meant high, 3 meant moderate, 2 meant low and 1 meant very low.

#### IV. RESULTS AND DISCUSSION

##### A. Introduction

This section unveils and maps out the causes of conflicts within the design team in building projects in Tanzania and also presents data collection and data analysis of the findings which were obtained through questionnaires and published documents. The main objective of the study was to analyze the causes of conflicts within the design team in building projects in Tanzania. The data collection exercise was fairly good because 21 out of 25 distributed questionnaires were filled and returned and used for further analysis. Table 4.1 below summarizes the distribution and response rate of administered questionnaires to all design team members.

**Table 4.1: Summary of responses analyzed in data collection process**

Respondents	Questionnaire distributed	Questionnaire returned	Response rate (%)
Architectural firms	9	7	78%
Quantity Surveying firms	10	9	90%
Structural/Civil Engineering firms	3	2	67%
Services/MEP Engineering firms	3	3	100%
<b>Total</b>	<b>25</b>	<b>21</b>	<b>Av. 84%</b>

##### B. Distribution of respondents based on the working experience

Table 4.2 shows the response of the survey questionnaires with regard to the work experience in offering professional services. The study showed that, majority of the respondents i.e. 12 out of 21 (equivalent to an average of 57%) have been offering service for less than 10 years while the remaining proportion of 9 out of 21 respondents (equivalent to 43%) have been in practice in the construction industry for more than 10 years. For this study it is assumed that experts with experience more than 3 years can respond with reliable precision issues related to conflicts within design team members. In addition, the current policy and guidelines stipulate that graduates having required experience more than two years can be registered as professionals by both Architects' & Quantity Surveyors' Registration Board (AQRB) and Engineers' Registration Board (ERB) in Tanzania.

**Table 4.2: Respondents based on the working experiences**

SN		Less than 10 years		More than 10 years	
		F	%	F	%
1.	Architectural firms	3/7	43	4/7	57
2.	Quantity surveying firms	7/9	78	2/9	22
3.	Structural/Civil Engineering firms	0/2	0	2/2	100
4.	Service Engineering firm	2/3	67	1/3	33
<b>Total</b>		<b>12/21</b>	<b>57</b>	<b>9/21</b>	<b>43</b>

##### C. Identification of types of conflicts among the members of the design team

Respondents were asked to identify types of conflicts which they have come across or familiar with within different building projects in Tanzania. Types of conflicts were listed and respondents were required to indicate the extent of occurrence against each conflict situation by using a 5-point Likert scale as

follows; Very High VH – (5), High HG – (4), Moderate MD – (3), Low LW – (2) and Very Low VL – (1). Types and/or factors leading into conflicts were grouped and classified as task conflicts, process conflicts, relationship conflicts, cognitive conflicts, contractual conflicts and procedural conflicts, whereby

factors leading to causes of each category were ranked and frequencies were thus recorded and summarized as depicted in Table 4.3 below. Furthermore, Table 3.3 provides ranges of mean scores whereas mean scores ranging between (1.0-2.0) were ranked as low, (2.1-3.0) as medium and (3.1-5.0) were ranked as high.

**Table 4.3: Types of conflicts among the design team members**

Type of conflict	Factors leading into conflicts	VH		HG		MD		LW		VL		Mean score	Rank
		F	%	F	%	F	%	F	%	F	%		
Task conflicts	Delay in preparation of drawings.	8	38	2	10	4		3	14	4	19	3.33	1
	Failure to respond in timely manner.	4	19	7	33	6	29	3	14	1	5	3.48	
	Inadequate information for preparation of BOQ.	7	33	5	24	5	24	4	19	0	0	3.71	
	Delay in approval of drawings.	2	10	7	33	7	33	4	19	1	5	3.24	
	Different meanings in specifications.	0	0	5	24	7	33	4	19	5	24	2.57	
	Design related problems.	2	10	4	19	4	19	6	29	5	24	2.62	
	Perception of disagreement among members concerning the contents of their decision.	3	14	6	29	7	33	0	0	5	24	3.10	
	<b>Average mean scores</b>											<b>3.15</b>	
Process conflicts	Poor time management.	3	14	6	29	8	38	2	10	2	10	3.29	2
	Disagreement about assignment of duties.	1	5	1	5	9	43	4	19	6	29	2.38	
	Changes of design without informing other members of the team.	8	38	3	14	5	24	2	10		10	3.48	
	<b>Average mean scores</b>											<b>3.05</b>	
Relationship conflicts	Conflict due to difference in personalities.	1	5	1	5	4	19	5	24	10	48	1.95	6
	Distrust.	0	0	2	10	5	24	4	19	10	48	1.95	
	Personal tastes.	0	0	4	19	3	14	3	14	11	52	2.00	
	Disagreement about values.	0	0	3	14	3	14	6	29	8	38	1.95	
	Friction, dislike, annoyance and irritation among members.	0	0	2	10	3	14	6	29	9	43	1.81	
	<b>Average mean scores</b>											<b>1.93</b>	
Cognitive conflicts	Difference in goals and priorities.	0	0	3	14	4	19	10	48	4	19	2.29	5
	Expression of differences in ideas and opinion.	1	5	5	24	4	19	8	38	3	14	2.67	
	<b>Average mean scores</b>											<b>2.48</b>	
Contractual conflicts	Ambiguities in contract document/terms of engagements.	1	5	5	24	9	43	4	19	2	10	2.95	3
	Fault or omission in the contract document.	1	5	4	19	9	43	4	19	3	14	2.81	
	Change of conditions/delayed payment of fees by lead consultant to sub-consultants.	2	10	2	10	4	19	5	24	8	38	2.29	

	Misinterpretation of the contract/terms of engagements.	1	5	2	10	7	33	7	33	4	19	2.48	
	<b>Average mean scores</b>											<b>2.63</b>	
Procedural conflicts	Unclear objectives of the team.	0	0	1	5	10	48	5	24	5	24	2.33	<b>4</b>
	Individual objectives which are in conflicts with objectives of the team.	2	10	2	10	12	56	2	10	3	14	2.90	
	<b>Average mean scores</b>											<b>2.62</b>	

Note: F = frequency and % = percentage.

Therefore, obtained information showed that respondents were aware of different types of conflicts including factors leading into conflicts. This helped them to identify types of conflicts occurring within the design team.

Generally, task conflicts were ranked first as a major group type of conflicts within design team members with high average mean score of 3.15 followed by process conflict with mean score of 3.05. Contractual conflicts were among the types identified with mean score of 2.63 ranking third, procedural conflicts were ranked in the fourth position with a mean score of 2.62, followed by cognitive conflicts with mean score of 2.48. Relationship conflicts were identified as the last group type of conflict within design team with mean score of 1.93. Factors leading to the conflicts outlined above were discussed further in below sub-headings.

#### 1) *Task conflicts:*

Factors leading into task conflicts were ranked from high to low based on established mean score. Inadequate information for preparation of bills of quantities (BOQ) was the first factor with mean score value of 3.71 followed by failure to respond in timely manner with mean score value of 3.48. Delay in preparation of drawings is among factors causing task conflicts with mean score of 3.33. Drawings may be ready for work but delay in approving them also may lead into conflict, respondents supported this with mean score of 3.24.

Perception of disagreement among members concerning the contents of their decision is also among the leading factors causing task conflicts with mean score of 3.15. This occurs in a scenario where an architect disagrees with a structural engineer designs following his decision to introduce say a column in the architect's design in order to attain design requirement for reasons of not achieving aesthetic desires. Design related problem had a mean score of 2.62 ranking as a sixth factor, finally different meanings in specification was the last factor with mean score of 2.57.

#### 2) *Process conflicts:*

This was the second ranked type of conflicts with an average mean score of 3.05. These are conflicts that usually happen during execution of the work. Factors leading into occurrence of process conflicts were; change of design without informing other members of the team, this was the first with mean score of 3.48. Poor time management was also among factors leading into process conflicts, which had a mean score of 3.29. Lastly, disagreement about assignment of duties was another factor with mean score value 2.38. However, it can be assumed that for experienced members, this is not likely to happen.

#### *Contractual conflicts:*

Results also showed that contractual conflicts do prevail within consulting team members. This category ranked the third with an average mean score of 2.63 as shown in Table 4.3. It was caused by factors such as ambiguities in terms of engagements, defects in contract documents, and misinterpretation of terms of engagement. According to [22] participation of different parties in a project is governed by a contract or terms of engagements which define the exchange of service for money.

Ambiguities in terms of engagements lead to the contractual conflicts when one understands and interprets differently especially in duties and responsibilities of each design member. This was identified by respondents with mean score of 2.95.

Defects/omissions in contract document/terms of engagement occur when there is some missing information in term of engagement, an engagement between architect and other design team members. Defect in terms of engagement had a mean score value of 2.81.

Misinterpretation of terms of engagement, due to the language used in terms of engagement i.e. law language, may lead to one of the members to misinterpret. Misinterpretation is also a contractual conflict occur. This had a mean score 2.48. Experience shows that there have been cases noted involving

delayed payments from the lead consultant to sub-consultants. In this case contractual conflicts shift into relationship conflicts.

**3) Procedural conflicts:**

A procedural conflict is the fourth type of conflict as identified by respondents with average mean score of 2.62. Procedural conflicts can occur when individual objectives are conflicting with objectives of the team. For example in preparation of contract documents, every member suggests his/her desirable form of contract as s/he wishes such as East Africa, Fidic, World Bank, National Construction Council of Tanzania (NCC), Public Procurement Regulatory Authority (PPRA) and others. This perhaps is partly due to the fact that some design members are more used to specific forms of contract than others. Nevertheless, it is clear that public projects do always employ PPRA forms of contract. This had a mean score of 2.90 as shown in Table 4.3. Furthermore, unclear objectives of the design team affecting accomplishment of the work was also noted but with moderate severity.

Therefore, this type is also not common as compared to task conflicts and process conflicts. Therefore, the findings show that task conflicts and process conflicts occur more than other types within design team members followed by contractual conflicts, procedural conflicts, cognitive conflicts and relationship conflicts.

**4) Cognitive conflicts:**

This type of conflict is the last but one type of conflicts ranking fifth with an average mean score of 2.48. This type of conflict occurs quite rarely because difference in thinking is cleared before execution of the work and once a design team is made through an association form, ideas and opinions will have solutions identified since members know each other.

Expression of difference in ideas and opinions lead into cognitive conflicts. Results indicate a mean score of 2.67 for this factor. Difference in

goals and priorities was also one of the factors leading into cognitive conflicts with mean score 2.29 as shown in Table 4.3.

**5) Relationship conflicts:**

Relationship conflict ranked the last type of conflict with mean score of 1.93. This type of conflict occurs rarely within design team members in Tanzanian building projects because many project architects acting as team leaders do associate with other design team members i.e. quantity surveyors, structural/civil engineers and services/MEP engineers. In association form, usually firms which normally work together know each other; therefore, it can equally be argued that relationship conflicts are not likely to surface.

In other forms of projects where the client selects design team members differently and has separate contracts with each design member, there is a possibility for relationship conflicts to occur because they might have not worked together before and every member has his own terms of reference (ToR).

**D. Causes of conflicts among the members of the design team**

Having identified and clustered various types of conflicts within design teams, this part therefore analyses key causes leading to conflicts within design members.

Design team members were asked to indicate causes of conflicts which they have come across within different building projects in Tanzania. In responding to this question causal factors were listed and design team members were required to rank the extent of severity against each cause using the 5-point Likert scale as per the following key; Very high VH – (5), High HG – (4), Moderate MD – (3), Low LW – (2), and Very Low VL - (1).

**Table 4.4: Causes of conflicts among the design team members**

SN	Causes of conflicts	VH		HG		MD		LW		VL		Mean score	Rank
		F	%	F	%	F	%	F	%	F	%		
1.	Behavioral problems i.e personality.	0	0	1	5	8	38	3	14	9	43	2.1	15
2.	Contractual problem i.e variation, payment.	6	29	6	29	6	29	3	14	0	0	3.7	3
3.	Technical problems i.e quality of technical specifications.	6	29	6	29	7	33	3	14	1	5	3.9	2
4.	Change of scope and specifications.	6	29	6	29	5	24	4	19	0	0	3.7	4
5.	Delay in payments.	9	43	7	33	4	19	1	5	0	0	4.1	1
6.	Non-payment.	6	29	4	19	2	10	3	14	6	29	3.1	8
7.	Poor communication.	1	5	3	14	9	43	4	19	4	19	2.7	11

8.	Discrepancies or ambiguities in contract document.	3	14	4	19	10	48	2	10	2	10	3.2	7
9.	Failure to respond in timely manner.	3	14	6	29	8	38	3	14	1	5	3.3	6
10.	Absence of team spirit among the participants.	2	10	6	29	3	14	7	33	3	14	2.9	9
11.	Delay in preparation and approval of drawings.	7	33	2	10	6	29	4	19	2	10	3.4	5
12.	Change of conditions of engagement/contract.	3	14	3	14	8	38	3	14	4	19	2.9	9
13.	Errors / omission in the contract document.	2	10	4	19	5	24	5	24	5	24	2.7	11
14.	Waiting time for approval, testing and inspection.	2	10	8	38	6	29	3	14	2	10	3.2	7
15.	Lack of problem solving skills.	0	0	2	10	8	38	6	29	5	24	2.3	13
16.	Unresolved disagreement.	2	10	4	19	6	29	6	29	3	14	2.8	10
17.	Difference in goals and priority.	0	0	3	14	5	24	7	33	6	29	2.2	14
18.	Misunderstanding in the contents of the project, difference in goals & prioritization.	0	0	2	10	6	29	8	38	5	24	2.2	14
19.	Personal clashes.	0	0	2	10	1	5	8	38	10	48	1.8	18
20.	Personal relationships.	0	0	1	5	4	19	4	19	12	57	1.7	19
21.	Perceived breach of faith and trust.	1	5	2	10	2	10	5	24	11	52	1.9	17
22.	Interdependence of the team members.	0	0	1	5	6	29	7	33	8	38	2.1	15
23.	Goals and expectation of the team members.	0	0	3	14	3	14	7	33	8	38	2.1	15
24.	Discrimination.	0	0	1	5	3	14	4	19	13	62	1.6	20
25.	Poor time management.	2	10	8	38	8	38	3	14	0	0	3.4	5
27.	Lack of clarity in purpose goals.	1	5	3	14	7	33	5	24	5	24	2.5	12
28.	Management problems i.e coordination among the team members.	4	19	3	14	9	43	3	14	2	10	3.2	7
29.	Incompleteness of drawings and specification.	5	24	7		3	14	4	19	2	10	3.4	5
30.	Failure to understand roles and responsibilities of team members.	2	10	5	24	6	29	4	19	4	19	2.9	9
31.	Distrust.	0	0	3	14	3	14	6	29	9	43	2.0	16

Note: F = frequency and % = percentage.

Causes of conflicts were analyzed and grouped whereby critical, moderate and minor causes were identified using mean scores (refer ranges in Table 3.3) and as calculated in Table 4.4. Findings identified that minor causes led to relationship conflicts which is the least type of conflicts. Moderate causes included cognitive conflicts, contractual and procedural conflicts. On the other hand critical causes of conflict led to task and process conflicts. In-depth analysis is further discussed below.

**1) Critical causes of conflict within design team members**

The results in Table 4.4 indicate causes of conflicts within the design team. Those with mean score between 3.10 and 5.0 were considered to be critical causes compared to others. The critical cause was therefore noted as delay in payment. These critical causes as identified by respondents are further explained below.

- **Delay in payment:**

Results from the Table 4.4 indicate that delay in payment is the main cause of conflict within the members of design team having high mean score of 4.1 compared to others. From traditional

procurement method, an architect is a leader of design team and is a person appointed by client at the start of project. Therefore, payment of other design team members is made through the architect. His delay to pay them becomes a cause of conflict among them leading to process conflicts. The study of [15] in Nigeria revealed similar results that delay in payment is major cause of conflict.

- ***Technical problems i.e quality of technical specification:***

Table 4.4 identified technical problems as the second ranked cause with a mean score of 3.90. According to [22] technical problems are due to uncertainty. Uncertainty is the difference in the amount of information required to do the task. In design team, an architect and an engineer are the ones who are responsible for specifying various work items, thus providing inadequate information leads to disagreement with other members. Femi's study identified related outcomes, leading into task conflicts [15].

- ***Contractual problems:***

Design team members usually have their own terms of engagement (i.e. ToR); these are advised to be in contract in order to ensure rights and obligations of every party. Conflicts may rise when provision of payment is breached. The contract must state and explain well about all matters related to work in order to minimize these conflicts. Mean score value of 3.7 ranked this in a third position. [22] and [16] supported this as among causes of conflicts within design team mentioning as key contractual factor leading to conflicts within design team members.

- ***Change of scope and specifications:***

Change of scope of the work and specification is also considered as a factor leading causes of conflicts. It further leads to disagreement among team members. This had a mean score of 3.7 ranked the fourth as a critical cause of conflict within design team. [16] also supported this as a cause of conflicts within design team.

- ***Incompleteness of drawings & specification and poor time management:***

Results from Table 4.4 above show that incomplete drawings & specification and poor time management were ranked as the fifth cause of conflicts with mean score of 3.4. Each stage in design team should be done within certain time limit.

Once an architect produces incomplete drawings with insufficient information and specification lead to conflicts because QS and Engineer will miss essential information for fulfillment of their tasks and responsibilities. [2] validated that incompleteness of drawing is a cause of conflict. It can equally be dialogued that most variations and

cost overruns are associated with this deficiency, which in turn will frustrate the entire project.

- ***Management problems and ambiguities in terms of engagements***

A project leader, normally an architect, should coordinate team members in a proper way that everyone participates fully in a project. If management is poor participation of members will be poor too and disagreement between them will surface.

Ambiguities in terms of engagements lead to the contractual conflicts when everyone understand and interpret ToR differently especially in duties and responsibilities of each design member. This factor had a mean score of 3.5.

- ***Delay in preparation and approval of drawings and waiting time for approval, testing and inspection:***

Time in design team is essential. Due to that, delay in either preparation or approval of drawings may lead to misunderstandings. Since payment of design team goes parallel with construction stages, delay in construction affect payment process as well as throwing blames to one another, and that design team members end up with misunderstanding of each other. This has a mean score of 3.4 and ranked seventh.

Waiting time for approval, test and inspection also lead to delay in construction process. This was ranked ninth with mean score of 3.2.

- ***Failure to respond in timely manner:***

Disagreement within design team members arises when members fail to do their duties and responsibilities within required time. Results indicated that this factor had a mean score of 3.3 and ranked as number eight cause. Late information delivery was also affirmed by [2] as the critical factor that led to the occurrence of the conflicts.

## ***2) Moderate causes of conflicts within design team***

Results from the findings reveal that there are some of the averagely identified causes of conflicts within the design team. These suggested causes were those with mean scores ranging between 2.10 and 3.00. These causes were identified and discussed as follows;

- ***Lack of problem solving skills***

This is among the causes of the conflicts in which design team members have got no skills of solving conflicts at early stage. Such skills include conflict management approaches like accommodation, avoiding and the like as reviewed

in literature in Section "I". According to [4], conflict management approaches are best in solving conflicts. Having sufficient knowledge and understanding on these approaches, is considered as a key towards mitigating conflicts within design team members.

- ***Behavior problems, goals and expectation of the team members***

Results from Table 4.4 show that this factor had moderate severity with mean score of 2.1 and ranked fifteenth. Behavioral conflicts are associated with personality. However, this also occurs rarely because; goals are usually discussed before execution of the work.

- ***Absence of team spirit among team members and failure to understand their roles and responsibilities***

These are among the causes of conflicts within design team which were ranked by respondents to be ninth with a mean score of 2.9. Spirit of working as a team depends on the priority given by every member to a particular work. If a member has no spirit of team working also will fail to fulfill his roles and responsibilities hence causing conflicts with design team members. Non-adherence to this contravenes with team building theory which is a key aspect in the integrated/modern management school of thought.

- ***Poor communication and errors/change in terms of engagement***

Communication within design team is very essential because every member will be updated on the assignment progress. It is also considered easy to remind others on their respective assignments. Hence if communication is poor, conflicts are prone to be experienced as a result of late completion of the works and finally lead to an extension of time for completion.

Terms of engagement are made to ensure every member acquires intended rights and understand his/her obligations to a particular project. Once errors or changes occur on the terms of engagement conflicts are inevitable within members because what will be done is out of engagement. Results showed that this factor had a mean score of 2.7 and is ranked eleventh.

- ***Misunderstanding in contents of the project and difference in goals and prioritization***

A design team member ought to keep in mind the same goals and priority to a particular work and that everyone develops spirit with it. This is achieved if the contents of the project are clearly understood. This had a mean score of 2.2, ranking fourteenth.

- ***Unresolved disagreement***

This happens when members had a conflict before in different previous projects and that the conflict was not resolved. This may lead a conflict to proceed even to a current project that they are undertaking. This is not much common cause in Tanzanian building projects since many conflicts are resolved at early stages in order to avoid disturbance and cost of solving disputes.

### ***3) Minor causes of conflicts within the design team***

Other causes with mean scores less than 2.0 were considered as minor causes. These causes depend on personal behavior, and as stated before, minor causes are also associated with relationship conflicts. Findings revealed that in design team, conflicts that occurred due to relationship occurred rarely. This is because given the current practice in Tanzania, many design members do associate for the work; hence they know each other very well.

- ***Distrust, personal clashes and perceived breach of faith and trust:***

Design team members should work as a unity in the sense that if there are personal clashes, distrust and breach of faith among themselves are mutually managed. In Tanzania, team association approach is usually adopted hence members who have no personal clashes, distrust and breach of faith associate for the work. Therefore, these causes were noted to rarely occur.

- ***ii) Personal relationship:***

Personal relationship is the second from the last cause of conflicts as identified by respondents. This is relationship between persons within design team. Results showed occurrence of this factor was very rare with mean score of 1.71. However, this may not necessarily be associated with the project per se.

- ***iii) Discrimination:***

Discrimination is the last cause of conflict within members of design team ranked with mean score of 1.62. Discrimination reduces equal chance and to be promoted [17]. From the findings and experience, architects in the Tanzanian context, do associate with other members of design team reflecting minimal clashes/tensions. Members who associate know each other and act friendly in construction field. Discrimination may occur to the donor funded projects because in some cases this approach uses indigenous consultancy for supervision of local projects.

### ***E. Approaches to minimize conflicts within the design team***

The results from Table 4.5 below indicate mechanisms proposed to minimize conflicts among

members of the design team. Those with mean scores between 4.1 and 5.0 were considered to be

most preferred ways of reducing conflicts.

**Table 4.5: Ways to minimize conflicts**

Ways of minimizing conflicts within team members	VH		HG		MD		LW		VL		Mean score	Rank
	F	%	F	%	F	%	F	%	F	%		
Good communication system and proper coordination.	14	67	4	19	3	14	0	0	0	0	4.5	1
Comply with professional practice.	12	57	8	38	1	5	0	0	0	0	4.5	1
Establishing the team norms.	6	29	8	37	6	29	0	0	1	5	3.9	4
Proper preliminary investigation and pre-site visit.	14	66	4	19	2	10	0	0	1	5	4.4	2
Thorough design reviews.	12	56	6	29	2	10	0	0	1	5	4.3	3
Provide conflict management training to the team members.	1	5	12	56	4	19	2	10	2	10	3.4	6
Balancing personal needs and business needs.	6	19	5	29	6	38	1	0	3	14	3.5	5
Setting clear objectives of the team.	10	48	4	19	3	14	2	10	2	10	3.9	4

The most preferred ways were thus noted as; compliance to professional practice, good communication system and appropriate coordination, proper preliminary investigation and pre-site visits and thorough design reviews as discussed hereunder.

- **Comply with professional practice:**

Respondents were asked to propose ways to minimize conflicts within the design team. Results showed a good proportion of respondents opined that, the design team members should comply with professional practice in order to eradicate or minimize conflicts. This factor had a mean score of 4.5. Professional practice is the use of one’s knowledge in particular task in design team. It also refers to the way an individual behaves in workplace while adhering to professional responsibility. The study conducted by [36] in Sri Lanka revealed that every member shall use professional knowledge and experience to act within their professional capacity and there should be no personal difference, unfairness, inappropriate and inadequate responses for the project tasks. Therefore, in addition to the reviewed literature, this proposal seemed to be a suitable means of intervention towards minimizing conflicts.

- **Good communication system and proper coordination:**

Results indicated that good communication system and proper coordination are a paramount

approach to minimize conflicts within the design team members. This factor had a mean score of 4.5. Communication gaps, miscommunication and lack of communication skills should be highly

discouraged through setting project teams and selection of appropriate contractual methods [36]. Therefore, good communication helps members to respond in timely manner without delay in various aspects indicating either payment or preparation and approval of drawings because proper coordination will remind every member to act on time.

- **Proper preliminary investigation and pre-site visit:**

As justified by respondents with a mean score of 4.4 and ranked the second, proper preliminary investigation and pre-site visit of the work before execution. According to [36], since condition of site is unforeseeable therefore design team members are required to investigate site before execution in order to minimize conflicts of re- design and other works that may happen after design and cause changes of scope of the work.

- **Thorough design reviews:**

The respondents suggested thorough design reviews as a good way of minimizing conflicts among the design team members as ranked third with mean score of 4.3. This helps to minimize conflicts which can be caused by change of scope

and specification, technical problems i.e. quality of technical specification. Therefore, design of the works should be revised quite often in order to ensure that all conflicts related to design are minimized or eradicated before starting of the project. A study by [45], revealed that design evaluation during pre-contract cost planning phase is key towards mitigation of cost overruns that usually frustrate many building projects, ending into conflicts.

- ***Setting clear objectives of the team***

This was one of the ways suggested by respondents with a mean score of 3.9. This way helps to minimize conflicts through setting and making clear goals and expectations of the team members. Other causes such as difference in goals and priority of members can also be minimized.

- ***Establishing the team norms***

Establishment of team norms was one of the ways suggested to minimize conflict among the design team members with a mean score of 3.9. According to [16], team norms help to shape the interaction of the team members with each other. These established norms should focus on the success of the intended project and also team norms shall be written and posted to every member to remind them on their respective commitments.

- ***Balancing personal needs and business needs:***

From Table 4.5, respondents advised that design team members should balance personal needs and business needs with mean score of 3.5. Therefore, this approach will minimize conflicts caused by individual objectives when they collide with objectives of the team, differences in personalities, personal clashes, unresolved disagreement and interdependence of the team members.

- ***Provide conflict management training to the team members and interventions by professional bodies:***

Findings from the results identified that conflict management training can help to a great extent mitigate the conflicts. Training provides knowledge of different conflicts management approaches indicating competition, accommodation, compromising, collaboration and avoiding. Managing conflicts is a way to reduce conflicts' destructive effects; this was supported by [43].

## **V. CONCLUSIONS**

In analysing causes of conflicts within the design team in building projects in Tanzania, the following conclusions can be drawn from the study.

### ***A. Types of conflicts within the members of design team***

Types of conflicts that occurred in design team differ from one project to another. Also these types depend on the situations of occurrence. Identified types included; task conflicts, process conflicts, contractual conflicts, procedural conflicts, cognitive conflicts and lastly is relationship conflicts. Task conflicts and process conflicts are conflicts which were classified as critical within a design team. Relationship conflict characterized by distrust, personal clashes seemed to occur rarely within design team.

### ***B. Causes of conflict within the members of design team***

There were a number of reasons for occurrence of conflicts within design team members, these causes varied from one project to another and also depended on contractual relationships existing between the teams. These causes were given weight in order to determine major, moderate and minor causes. The causes can be further categorized into contractual, behavior and technical causes.

Major causes of conflicts led to technical problems and contractual problems. These causes include delay in payment, change of scope and specification, failure to respond in timely manner, poor communication and absence of team spirit among the participants.

It has also been noted that via team association form of working, behavioral problems can be eliminated because all members know each other very well. These behavioral problems include; distrust, personal clashes and discrimination.

### ***C. Interventions to minimize conflicts within design team***

Conflicts in design team are inevitable due to differences in disciplines, backgrounds and experiences hence challenges exist and conflicts cannot be removed 100% but can be minimized to a tolerable and bearable level. In sum, main ways of minimizing conflicts suggested include; complying with professional practice, maintaining good communication system and proper coordination. Therefore, when conflicts are minimized, all effects that occur due to these conflicts will also be minimized.

## **VI. RECOMMENDATIONS**

The success of a building project depends on many variables. The way on how a design team manages conflicts facing the project cannot be unrated. Conflicts can create adverse conditions for the success of the project. This study has identified

types/areas of conflicts that are prone to conflicts, the various causes of conflicts in those areas and how they can be managed. The researcher has established some recommendations as follows.

- Design team should comply with their professional practice as stipulated in by-laws and codes of conduct, including providing all necessary information as required.
- Delay in payment was shown as a major cause of conflict within the design team. Therefore, terms of engagement should state clearly about time of payment, measures in failure of the same in order to minimize these conflicts.
- Design team should use conflicts as a challenge to improve quality service and delivery in required time.
- Project managers should prepare a conflict management plan at early stage of the project.

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