

UNIVERSITY OF EDUCATION, WINNEBA  
COLLEGE OF TECHNOLOGY EDUCATION, KUMASI

FACTORS AFFECTING THE DELIVERY OF BUILDING CONSTRUCTION  
PROJECTS FUNDED BY DISTRICT ASSEMBLIES COMMON FUND (DACF): THE  
CASE OF SELECTED REGIONS IN GHANA

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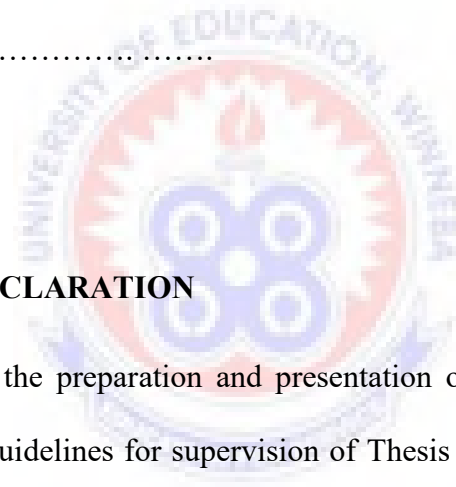
## DECLARATION

### STUDENT'S DECLARATION

I, ABORAH–OSEI CASTRO, declare that this Thesis, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree in the University of Education, Winneba or elsewhere.

SIGNATURE: .....

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### SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of Thesis as laid down by the University of Education, Winneba.

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SIGNATURE .....

DATE .....

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## **DEDICATION**

I wish to dedicate this work to my late Father, Elder Osei Aborah Richmond (May his soul rest in peace) for whose encouragement and direction has been the fountain of inspiration for perpetual perseverance.



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## ABSTRACT

Work delivery has been one of the effective avenues for appreciating value for money in this current economic situation, especially in the production industry where building construction falls under. This requires the establishment of institutions to monitor and enforce this delivery standard, thus the establishment of Metropolitan Municipal and District Assemblies (MMDA's) which regulate these activities as some of its functions. Despite the recognition of MMDA's function on delivery standards, building construction project delivery funded by District Assemblies Common Fund (DACF) is confronted with several challenges. The study in this direction sought to assess the factors affecting the delivery of building construction projects funded by DACF through examining the factors affecting the delivery of DACF building construction projects in Ghana, determining the effects on the factors affecting the delivery of DACF building construction projects in Ghana, determine measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana and to examine the impact of the guideline for the utilisation of DACF on building construction delivery. These was done by employing a cross-sectional survey in its design from a participants of 173 district coordinating directors, finance officers, head of works, planning officers, budget officers, procurement officers, internal auditors, administrators, general secretaries, programs coordinators and researchers through questionnaires in 3 regions, namely Ashanti, Greater Accra and Bono East. The resultant outcome from the analysis pointed out contractor related factors, project funding related factors, supply chain related factors, site related factors and client related factors as the 5 main factors affecting the delivery of building construction projects funded by DACF. The finding again pointed out 7 main effects on the factors affecting the delivery of DACF building construction projects in Ghana. These were cost and time overrun, poor quality standard work, unexploited completed project, contractor bankruptcy or liquidation, causes of accident/disaster, loss of workers and profit and loss of stakeholders' trust and confidence. Moreover, provision of adequate budget before commencement of project, involvement of stakeholders in project delivery process, evaluation of construction project critical success factors, provision of adequate human resource/logistics and continuous contractors of the various construction firms be encouraged to use project management techniques were found to be the 5 main measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana. It was concluded that MMDA's building construction project delivery funded by DACF efficiency stand a chance to be improved. It is therefore recommended for Ministry of local Government and Rural Development (MLGRD) to review DACF guideline for utilisation and introduce project charter in MMDA's building construction project delivery.

**Keywords:** Ghana, District Assemblies Common fund (DACF), Metropolitan Municipal and District Assemblies (MMDA'S), building construction project delivery.

## CHAPTER 1

### INTRODUCTION

#### 1.0 Background of the Study

Work delivery has been one of the effective avenues of realizing value for money in all spheres of life especially in the manufacturing and service provision industry; and for that matter the work delivered must be of good quality (Tausef, 2012).

The construction industry is important because of the outputs and outcomes of its activities. It contributes to national socio-economic development by providing the buildings which are used in the production of all goods in the economy. Moreover, the physical infrastructure, built through construction activity, is the nation's economic backbone as it forms the arteries for the facilitation of productive activity by enabling goods and services to be distributed within and outside the country. The items built also offer social and welfare benefits (Ofori, 2012). For example, housing fulfils one of the most basic needs of people by providing shelter for people. Built items also offer people the opportunity to improve their living standards. The quality of the design and construction of these facilities has an impact on the efficiency with which the productive activities and provision of services can be undertaken. Thus, the construction industry can influence the competitiveness of enterprises within the economy. Construction can also affect the ability of the nation to attract foreign investment. This is important in this era of globalization as all nations are competing nations to position themselves to attract foreign investment (Ofori, 2012). Building is a structural unit which must be constructed to give cognizance to the achievement of lots of characteristics like durability, structural

soundness in milieu of the needed quality standard to stand the test of time. Studies have revealed that poor quality construction works eventually comes with huge financial cost as a lot of resources are eventually required to embark on series of repair and maintenance works to put the structure to good shape. Thus, it must be appreciated here that quality products in the real sense come with considerably a lower cost than those with poor quality (Oke, 2011).

Sub-standard buildings are highly associated with exponential degree of failure which eventually endangers the lives of the user entities and the lives of the entire community within which the structure is located. Thus, this necessitated for the establishment of Metropolitan, Municipal and District Assemblies (MMDA's) as agencies of development as spelt out in Section 10 (3) d' and e' of the local government Act 462 of 1993.

Which is to:

- (a) Initiate programmes for the development of basic infrastructure and provide municipal works and services in the district
- (b) Be responsible for the development, improvement and management of human settlement and the environment in the district.

There is no doubt that for effective and efficient development of a country, physical development plays important role, as Yasuyuki (2015) demonstrated that physical infrastructure development improves the long – term production and income levels of an economy in both the macro economy and endogenous growth. In Ghana the MMDA's levy the community to generate resources to support its functions as enshrined in the local government Act of 1993; but not withstanding these levying by the MMDA's, most

districts are not financially sound due to difficulties in collecting these levies hence the introduction of other source of funds to support development (Okrah, 2011). There are three major sources of financing development at the local level in Ghana. These include (1) central government transfer, (2) donor funds and (3) internally generated funds (Botchie, 2000, as cited by Selle, 2011). According to Crawford (2004), as cited by Selle (2011) the central Government funds included the District Assemblies Common Fund (DACF), Ceded Revenue, the Ghana Education Trust Fund (GET Fund), the District Development Fund (DDF) etc.; and though all these funding source was established by the central government, the DACF which is one of the funding source aforementioned was established by the Section 252 of the 1992 constitution of Ghana which was not less than 5% of the total revenue of Ghana but was increased from to 7.5% and now to 10% (Ghana web, Business news on Friday, 18 March, 2016). Conferring to the Common Fund Newsletter issued on 2<sup>nd</sup> December 2014, DACF in Ghana is a formulae-based system of financial transfer of resources for local development from the central Government. The rationale behind this DACF concept is to ensure the central pooling of resources so that both the financially advantaged and disadvantaged Districts would be fairly financed to enable them carry through the building of the requisite infrastructure and logistics to improve the standard of living of the rural folk (Ahwoi, 1992). It has been argued that the introduction of the DACF is one of the most innovative and sustainable measure ever introduced into the country's local government system that has supported development in both the indigenous sectors of the economy because studies have shown that Infrastructure development improves the long term production and income levels of an economy in both the macroeconomic and endogenous growth (Yusuyuki, 2015).

## 1.2 Statement of the Problem

DACF was established by the article 252 of the 1992 Constitution for the promotion of local level development. According to Robinson (2015) the DACF presently presents a major channel for the government development assistance to the districts.

There is evidence from all over the country that the Common Fund has since its inception been the primary source of project funding in the MMDA's over the last 20 years, the common fund has been the pillar of a vast range of projects, including physical infrastructure and human resource development at the district level. The Common Fund has assisted in the implementation of various projects in the MMDA's, focusing on priority areas such as education, health care delivery, portable water supply, market infrastructure, sanitation, roads and drains construction among others (District Assembly Common Fund home page, 2008).

Despite the recognition of DACF needs and appreciation; and the national agenda towards improvement of the nation's development through DACF, infrastructure project funded from DACF faces serious challenges (Nii Amoah, 2011). According to the author, the challenges were many but listed below:

- a. Delays in disbursement of the fund
- b. Over deduction at source
- c. Abuse of power by parliament in the approval and disbursement of the fund
- d. Inaccurate formula for the disbursement of the fund to the various MMDA's
- e. Mechanism for determination of the total revenue accrued and percentage allocated for the fund.



Over the last few years there have been several reports on infrastructure projects financed by the DACF subjected to several exponential degree of problems and these problems such as abandoned/standstill projects, substandard works, cost overruns/fluctuations and a host of other problems which keeps on repeating every year (Auditor General's report, 2015).

According to Hamzah *et al.* (2009) delay in Construction project is costly and is related to four main factors such as late payment, poor cash flow management, insufficient financial resources and financial market instability. Based on their findings, it was revealed that poor cash flow management is the most significant factor that leads to poor project delivery, followed by late payment, insufficient financial resources and financial market instability respectively. More over their study indicated that, client play the most important role in reducing the impact of financial problems towards the extent of project delay. According to Basheka and Tumutegyereize (2011) as cited by Kissi et al (2018) the construction industry accounts for a significant portion of the world's Gross Domestic Product (GDP); and this was deep-rooted in the report of the Institute of Statistical, Social and Economic Research (ISSER, 2008) that between 2006 and 2007, the construction industry contributed 0.7% and 1.0% respectively to GDP of Ghana. This hypothesized that the construction sector provides a substantial source of direct and indirect employment to majority of citizens all over the world.

According to Ali and Rahmat (2010) as cited by Kissi et al. (2018) it was concluded that, despite the immense contributions of the construction industry with regards to resources and services, there have been relentless criticisms of the poor performance in terms of quality project delivery of the major players; and these criticisms have in the recent past

occasioned an interest in a number of studies that focused on assessing the factors affecting project delivery in the construction industry.

Kissi et al. (2018) in addition pointed out that in recent times MMDA's are challenged with the issue of poor project delivery rendering; and this has led to low confidence in public service administration in terms of construction project delivery. Kissi et al. (2018) proposed that the challenge of poor project delivery and performance in the construction industry is because construction projects were unable to meet their set objectives as identified by Al-Moumani (2000). Furthermore, they ranked their findings according to their levels of severity on the challenges of project delivery as they were; weather and other environmental challenges, equipment and tools shortage, labour shortage, poor site management, material shortage, unrealistic time lines for project delivery, contractors' financial difficulties, inadequate logistics, inefficient contractor selection methods and procedure, lack of coordination and cooperation of other stakeholders.

Carefully juxtaposing the challenges that are confronting MMDA's building construction delivery and the fact that DACF presently presents a major channel for funding construction project, empirical studies have proved little as several researches have been done on the contribution of DACF to development on MMDA's which is much concentrated on socio economic activities as a whole but not on specifics such as building construction delivery, thus, opening up a deficit in knowledge. This study therefore seeks to assess the factors affecting the delivery of building construction projects funded by DACF within some selected MMDA's in Ghana. This will assist to examine how well DACF concept on building construction delivery has been adopted, operationalized and developed the country, which in effect create the awareness to improve on the efficiency

of DACF on building construction delivery to assist if not eradicated or minimize the canker from the building construction sector as far as MMDA's in Ghana are concern.

### **1.3 Aim of the Study**

The aim of the study is to assess the factors affecting the delivery of building construction projects funded by DACF in Ghana.

### **1.4 Objectives of the Study**

To achieve the purpose of the study, the specific objectives of the study are;

1. To examine the factors affecting the delivery of DACF building construction projects in Ghana.
2. To determine the effects on the factors affecting the delivery of DACF building construction projects in Ghana.
3. To determine measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana.
4. To examine the impact of the guideline for the utilisation of DACF on building construction delivery

### **1.5 Research Questions**

This research seeks to answers the following questions:

1. What are the factors affecting the delivery of DACF building construction projects in Ghana?
- 1 What are the effects on the factors affecting the delivery of DACF building construction projects in Ghana?

- 2 What measures can improve on the factors affecting the delivery of DACF building construction projects in Ghana?
- 3 What are the impacts of the Guideline for the utilisation of DACF on Building Construction Delivery?

### **1.6 Significance of the Study**

The study seeks to have positive implications on MMDA's Building Construction delivery on Projects Funded by DACF by applying the measures of the factors of this study. In this regard;

1. The outcome will create the awareness of how well DACF concept on Building Construction delivery has been adopted, operationalized and developed the country, which in effect clarify the need to improve on the efficiency of DACF on building construction delivery to assist if not eradicated minimize the canker from the building construction sector as far as MMDA's in Ghana is concern.
2. Improving on the efficiency of DACF building construction delivery of MMDA's in Ghana will assist to prevent or reduce the setback associated with it; and this will have positive impact on the development of the country; by preventing or reducing monetary waste, hence having a positive impact on the national economy as a whole.

### **1.7 Scope and Limitation of the Study**

The study was limited to Ashanti, Brong Ahafo and Greater Accra regions due to large numbers of MMDA's nationwide, the limited time frame, financial constraints and prevention of monotony. Extensive literature on project delivery procedures were

assessed and related to that of DACF. Officials within the frame work of the study area was also of great interest especially officers who are knowledgeable and much concerned about the study area; and contractors who have worked on projects funded by DACF with the sampled MMDA's for the last 5 years till date. The various guidelines for the utilisation of DACF for the past 5 years till date were assessed to identify their impact on MMDA's building construction project delivery; emphasizing more on "PART I" of the guideline which gives details and percentage allocation on the DACF Direct Transfer for MMDA's.

### **1.8 Organization of the Study**

The study was organized in five chapters.

*The first chapter* focused on the introduction which included the statement of the problem the research aims and objectives and other preamble of the research.

*The second chapter* was on the literature review which involved an extensive review of existing literature on DACF, MMDA's, project delivery and other scholarly articles of the subject.

*The third chapter* was dedicated towards the description of the main methodology adopted for the study.

*The fourth chapter* mainly concerned with data presentation, analysis and their discussion.

*The fifth chapter* which is the last chapter was purposely designed to look at the findings, conclusion and recommendations on the study.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter of the project mainly concerned with extensively assessing existing literature related to the topic under consideration. The researcher reviewed a lot of literature especially on scholarly articles in the internet, existing books, as well as other journals and magazines that is related to the title. The review also assessed extensive literature on scholarly concept of Building Construction Project Delivery. DACF which is the major funding source for most MMDA's Building Construction Projects will also be reviewed to know the methodology adopted in funding projects. Historical and contemporary perception of MMDA's in the development of Ghana as Building Projects endeavors to achieve to sustain the economy of the country was also an area of great interest the researcher reviewed.

#### 2.2 The Role of MMDA's in Ghana

The Metropolitan, Municipal or District Assembly (MMDA) is the pivot of administrative and developmental decision-making at the local level. It is assigned with deliberative, legislative and executive functions. The Assemblies are expected to mobilise resources and develop local infrastructure. Also, they are to promote the development of local productive activities with the help of some Central Government institutions, which are also decentralised to operate as part of the Assemblies (2<sup>nd</sup> Edition of the Common Fund News Letter, 2014). Local Governance, however the form it appears, be it by concentration, devolution or decentralisation is a sine qua non for the development of society. Ghana has made several attempts at having a successful local government

system; from the system of indirect rule in the colonial times, through to today's decentralisation efforts. Bringing the work of central government closer to the people ideally depends the democratic and participatory approach of development governance. Local governments in Ghana play very important roles in administration and development at the local areas. The 1992 constitution of the Republic of Ghana provides for "Decentralisation and Local Government" that creates a framework for citizens' participation in decision-making and local governance. The Decentralisation Policy of Ghana devolves power, functions and responsibility as well as human and financial resources from the Central Government to the district level. Local Government in Ghana has a long history, which predates colonialism. During the colonial era, the native authorities were used to facilitate communication and decision-making in their areas of jurisdiction. After independence, successive governments implemented various forms of Decentralisation and Local Government policies. However, the current Decentralisation Policy was initiated in 1988. Ghana's decentralisation process as enshrined in the constitution and designates District Assemblies as the highest political, legislating, budgeting and planning authority at the local level. The local Government Act (Act 462) of 1993 reinforces the constitutional provisions. To facilitate a holistic approach to the decentralisation process, various structures have been created at the sub-national level with the Regional Coordinating Councils (RCCs) as coordinating bodies. Below the RCCs are the Metropolitan or Municipal or District Assemblies (MMDAs) and the Sub-district structures (A Guide to District Assemblies in Ghana by Institute of local government studies)

Section 12 of the Local Governance Act, 2016 Act 936 stipulates the various functions of MMDA's, which is to:

- (1)
  - (a) Exercise political and administrative authority in the district;
  - (b) Promote local economic development; and
  - (c) Provide guidance, give direction to and supervise other administrative authorities in the district as may be prescribed by law.
- (2) A District Assembly shall exercise deliberative, legislative and executive functions.
- (3) Without limiting subsections (1) and (2), a District Assembly shall
  - (a) Be responsible for the overall development of the district;
  - (b) Formulate and execute plans, programmes and strategies for the effective mobilisation of the resources necessary for the overall development of the district;
  - (c) Promote and support productive activity and social development in the district and remove any obstacles to initiative and development;
  - (d) Sponsor the education of students from the district to fill particular manpower needs of the district especially in the social sectors of education and health, making sure that the sponsorship is fairly and equitably balanced between male and female students;
  - (e) Initiate programmes for the development of basic infrastructure and provide municipal works and services in the district;
  - (f) Be responsible for the development, improvement and management of human settlements and the environment in the district;
  - (g) In co-operation with the appropriate national and local security agencies, be responsible for the maintenance of security and public safety in the district;



- (h) Ensure ready access to courts in the district for the promotion of justice;
- (i) act to preserve and promote the cultural heritage within the district;
- (j) Initiate, sponsor or carry out studies that may be necessary for the discharge of any of the duties conferred by this Act or any other enactment; and
- (k) Perform any other functions that may be provided under another enactment.

(4) A District Assembly shall take the steps and measures that are necessary and expedient to:

- (a) Execute approved development plans for the district;
- (b) guide, encourage and support sub-district local structures, public agencies and local communities to perform their functions in the execution of approved development plans;
- (c) initiate and encourage joint participation with other persons or bodies to execute approved development plans;
- (d) Promote or encourage other persons or bodies to undertake projects under approved development plans; and
- (e) Monitor the execution of projects under approved development plans and assess and evaluate their impact on the development of the district and national economy in accordance with government policy.

(5) A District Assembly shall co-ordinate, integrate and harmonise the execution of programmes and projects under approved development plans for the district and other development programmes promoted or carried out by Ministries, Departments, public corporations and other statutory bodies and non-governmental organisations in the district.

(6) A District Assembly in the discharge of its duties shall

(a) Be subject to the general guidance and direction of the President on matters of national policy; and

(b) Act in co-operation with the appropriate public corporation, statutory body or non-governmental organisation.

(7) Public corporations, statutory bodies and non-governmental organisations shall co-operate with a District Assembly in the performance of their functions.

(8) In the event of a conflict between a District Assembly and an agency of the central Government, public corporation, statutory body, non-governmental organisation or individual over the application of subsection (5), (6) or (7), the matter shall be referred by either or both parties to the Regional Coordinating Council for resolution.

(9) The Instrument that establishes a particular District Assembly or any other Instrument, may confer additional functions on the District Assembly.

### **2.2.1 Composition and Membership of the Assembly**

As stated under Section 5 of the Local Government Act of 1993 (Act 462), a District Assembly consist of the following members:

- The District Chief Executive;
- One person from each electoral area within the District elected by universal adult suffrage in accordance with regulations made for the purpose by the Electoral Commission;

- The member or members of Parliament from the constituencies that fall within the area of authority of the District Assembly, except that such member or members shall have no voting rights; and
- Other persons not exceeding 30 percent of the total membership of the Assembly appointed by the President in consultation with the traditional authorities and other interest groups in the district.

The District Coordinating Director is Secretary to the Assembly.

### **2.3 Concept of District Assemblies Common Fund (DACF)**

The DACF was established by an Act of Parliament, District Assemblies' Common Fund Act, 1993 (Act 455). Prior to this, it was enshrined in the 1992 Constitution of the Republic of Ghana, Article 252 which indicated that not less than 5 percent of the nation's revenue should be paid to District Assemblies (DAs) to embark on development activities at the grassroots level (GOG, 1992 as cited by Okrah, 2011). The introduction of the DACF was an important achievement for fiscal decentralisation. According to Common Fund newsletter (2014), DACF was established purposely to encourage local governance and deepen commitment to the decentralisation programme in general, and fiscal decentralisation in particular. In addition, it promotes sustainable self-help development, make up for development deficiencies in deprived Districts or communities, complement the Internally Generated Funds (IGF) of the MMDAs and ensure equitable distribution of development resources among the MMDAs. It further explained that, the objectives of the DACF are to support the creation and improvement of socio-economic infrastructure in the country, and improve the delivery of social services by the MMDAs. In addition to their assertion, it further explained that the

allocation and disbursement of the DACF goes to confirm that MMDAs have not just been created and left to suffer in terms of sourcing funds and other forms of assistance required for development at the local level, but ensure that resources are made available to facilitate their work

### **2.3.1 DACF and Decentralisation Objective**

The push to decentralise governance to the local level largely depends on the provision of adequate funds and resources to the decentralised authorities to enable them to provide the requisite services at the local level. In this regard, the importance of the District Assemblies Common Fund set up under the 1992 Constitution specifically to collect and disburse revenue from the Central Government to the Metropolitan, Municipal and District Assemblies, MMDAs, cannot be overemphasised. Under the Constitution not less than 5% (now 10 %) of all accrued revenue by the State should be distributed fairly and equitably to the Districts based on a Formula approved by Parliament. However, the management and disbursement of the Fund faces challenges, which is believed by the National Association of Local Authorities of Ghana (NALAG), being the mouthpiece of all the MMDAs, actively strive to resolve. The challenges been hinted by NALAG were many but discussed five in their article. In summary the five were as follows: 1. Reliability on the mechanism for determination of the total revenue accrued and the percentage allocated for the Fund; 2. Inaccurate Formula for the disbursement of the Fund to the various MMDAs; 3. Delays in disbursement of the Fund; 4. Over Deduction at Source; and 5. Abuse of power by Parliament in the approval and disbursement of the Fund.

The issue of who determines the full amount of the revenue generated for the State and thus the 10% allocated for the Fund is crucial. Is it not possible that much could be accrued, but less would be given to the DACF for distribution to the MMDAs? If so, there is a need for an independent body made up of members from NALAG, Civil Society Organisations, NGOs, Ministry of Finance, Parliament, Ghana Revenue Authority and others with requisite knowledge and competence in areas of finance, budgeting, accounting and auditing to be involved in determining the “total revenue” based on which DACF is allocated to ensure transparency and accountability.

**Formula for Disbursement** There are also questions about the Formula for disbursement of the Fund. The Formula for the disbursement of the Fund is full with inaccurate information with regards to resources within some of the beneficiary MMDAs. Some of the factors used in determining some aspects of the Formula such as doctor to patient ratio, nurse to patient ratio, teacher to pupil ratio, road coverage and water coverage amongst others, sometimes, do not correspond with the situation on the ground in the MMDAs. There is therefore an urgent need to revisit the Formula by getting rid of the inaccuracies through proper research and data collection.

**Delays in Disbursement** Delays in the disbursement of the Fund and its attendant consequences pose a major problem for many MMDAs. For instance, the year 2014 ended, but only the first quarter allocation that was disbursed to the various MMDAs. As a result of this delay, projected programmes and projects shall equally suffer unnecessary delays as there is no money to pay contractors. In addition, delays in the implementation of projects also affect the contract sum, which tends to go up thus putting unwarranted pressure on contractors from their bankers.

Deductions at Source: Another unfortunate situation about the DACF is that before the money hits the coffers of the various MMDAs, close to about 40% of the funds being Sanitation Improvement Package, Fumigation and other elements would have been deducted from source. This centralized deduction of funds defeats the purpose of the local governance and even the importance of the Fund. Parliamentarians and the Fund Finally has been argued extensively on many platforms that Parliamentarians are agents of policy formulation and not agents for development and must therefore not be given any part of the Common Fund. Parliamentarians over the years, in the process of approving the DACF Formula have found a way to allocate 5% of the Fund to themselves. They have also allocated 2.5% of the Fund to the Regional Coordinating Councils (RCCs). Parliamentarians are already part of the Assemblies as ex-officio members and whatever development that goes on in the Districts equally covers them. RCCs on the other hand are not part of the local government structures and must never be allocated funds set aside purposely for MMDAs. Going forward, the RCC must be funded directly by the Central Government and not from the DACF and also Parliamentarians must not be given funds directly or indirectly from the DACF. Rather, they must be motivated adequately and encouraged to play their effective and efficient roles as policy makers and leave the implementation of development projects and programmes to the MMDAs. It could be argued that the allocation of funds to the Parliamentarians and the RCCs defeats not only the decentralisation process, but also goes against the spirit of Article 252 (3) of the Constitution, which states that –The monies accruing to the District Assemblies in the Common Fund shall be distributed among all the District Assemblies on the basis of a Formula approved by Parliament.” It

is very clear that this Constitutional provision does not cover either the Parliamentarians or the RCCs. Concluding In the face of all these challenges, it is critical that all the relevant groups – NALAG, Centre for Local Government Advocacy (CLGA) and other agencies, institutions, and NGOs that believe in local governance, direct their advocacy towards the deepening of decentralisation with specific reference to the District Assemblies Common Fund (Amoah, 2014).

### **2.3.2 Formula for Sharing the District Assemblies Common Fund**

The 1992 constitution, under article 252 and the District Assemblies Common Fund Act, 1993, Act 455, imposes an obligation on the Administrator of the DACF to present to Parliament a Formula for the distribution of monies allocated by Parliament for the District Assemblies every year (DACF Homepage, 2018).

- **Principles Underlying the Formula**

The DACF home page (2018) further explained that, it's Formula is developed to allocate the Funds evenly to address the development gaps between the rural and urban districts in the country. It further clarified that, the Formula considers the modern concept of development, which sees development as a multi-dimensional process involving not only economic growth, but also improvement in other living conditions such as health, education, access to potable water, good roads, adequate food supply, employment etc., thus defining development in terms of satisfying –basic human needs.

In developing the Formula, the DACF office adopted the –Basic Needs” approach and considered it as a Factor in the Formula with the following as its indicators:

1. Health Services
2. Education Services

3. Water Coverage
4. Tarred Road Coverage

Under this Factor, those who have more facilities/services receive less to bridge the development gap.

- **Choice of Indicators and Measures for the Factors**

Data is collected on selected indicators on the various factors from key public agencies and disaggregated down to the district level. The following indicators and measures are chosen for each of the Need Factors:

- i. Health Services**

This indicator measures the level of health services enjoyed by the people in each MMDA. The selected measures for health services are the number of health facilities such as hospitals, clinics, health centres, Community-Based Health Planning and Service (CHPS) Compound and Health professionals/population ratio.

- ii. Education Services**

Under this indicator, consideration is given to the number of basic education facilities in each MMDA as well as their Human Resource. The selected measures for this are the number of schools in each MMDA and the trained teacher/ pupil ratio.

- iii. Water coverage**

This refers to the percentage of population with access to clean and potable water.

- iv. Tarred Road Coverage**

This indicator considers the total road network in relation to tarred roads in each district.

In addition to the 'basic needs' Factor, the Formula also takes into account three other factors.

These are:



- i. Responsiveness - this looks at the effort of the Metropolitan, Municipal and District Assemblies (MMDAs) in generating their own revenue.
- ii. Service Pressure Factor - this Factor is to cater for the pressures put on facilities as a result of Rural/Urban migration in urban areas.
- iii. Equality Factor – this is a percentage of the Fund shared equally among the MMDAs before the other factors are applied.

- **Sources of Data Used**

Data used in the Formula is obtained from central government sources. This is to avoid the skewing of data to the advantage or disadvantage of any district.

- **Population**

Population data is obtained from the Statistical Service. For the New MMDAs created after the 2010 Population Census, the Population figures for the old MMDAs are shared between the old and new MMDAs.

- **Education**

Data on Education is obtained from the Ministry of Education. Data required includes Education Facilities, Pupil and Trained Teacher Population.

- **Health**

Health Data is supplied by the Ministry of Health. The data supplied includes Health facilities such as Public Hospitals, Clinics, Health Posts and CHPS compounds as well as Doctors and Nurses population. The health sector data poses a challenge because of the fast rate of movement of health personnel and the fact that some health facilities are under Ghana Health Services (GHS) while the missionary health facilities deal with the Christian Health Association of Ghana (CHAG).

- **Internally Generated Revenue**

Local Government Accounts Unit of the Controller and Accountant General's Department provides data on MMDAs' Internal Revenue Collection.

- **Water Coverage**

Data on water coverage is sourced from the Community Water and Sanitation Agency and the Ghana Water Company.

- **Tarred Road Coverage**

Tarred Roads data is obtained from the Departments of Urban and Feeder Roads. Highway data is excluded as most MMDAs have the highways just passing through with little economic benefit to the entire MMDA.

- **Location Quotient**

Location quotient is the method used to mathematically derive proportions from the data on Needs Factor. It is defined as:

Where  $S_i$  is the number of 'S' facility in district 'I' and  $S_c$  is the total number of facility S in the country.  $N_i$  is the population of district 'I' and N is the population of the country.

The location quotient ranks all the districts in terms of endowment of the facility in question. It is intended that the less endowed districts gain more than the better endowed.

Location quotient is a statistical term used in ranking or locating a District and its existing facilities in relation to the other Districts. The less the existing given facilities, the more the District gains in its share allocation of the Fund in the formula. The location quotient is a mathematical formula used to ensure the equitable distribution of the Fund. This tends to help the more deprived Districts when compared to the better endowed Assemblies in the sharing formula.

- **Weighting the Factors**

The indicators of the various factors are combined by weights to arrive at the share proportion of each MMDA.

The details of the WEIGHTING OF FACTORS are as follows:

**Table 2.1 DACF weighting factors**

<b>FACTOR</b>	<b>WEIGHTING %</b>
<b>A. EQUALITY</b>	<b>45</b>
<b>B. NEED</b>	<b>45</b>
<b>Health</b>	
Health Facility/ Population Ratio	9
Health Professional/ Population Ratio	8
<b>Education</b>	
Education Facility/ Population Ratio	10
Trained Teacher/ Pupil Ratio	8
<b>Road</b>	
Tarred Roads Coverage	5
<b>Water</b>	
Water Coverage	5
<b>C. RESPONSIVENESS</b>	
Revenue Improvement	6
<b>D. SERVICE PRESSURE</b>	
Population Density	4
	<b>100</b>

*Source: DACF homepage, 2018*

DACF considers 4 factors in determining the financial allocation to each MMDA's and these factors is weighted in percentages. The factors are Equality, Need (health, education, road and water)

Responsiveness (revenue improvement) and Service Pressure (population density). These factors with its sub indicators is weighted 45, 45, 9, 8, 10, 8, 5, 5, 6, 4 percentages respectively summing up to 100% as indicated in table 2.1.

- **Capping of Operational Expenditure**

The Formula for 2014 has a cap of 10% of total funds allocated to an Assembly as funds that can be used for recurrent expenses. The remaining 90% is for development projects.

- **National Programmes**

The District Assemblies Common Fund Budget allocation for 2014 includes allocations to some national development programmes under the Ministry of Local Government and Rural Development. The national programmes include Priority Intervention Programmes and other national programmes. Also, a Reserve Fund is allocated to, among others, the Constituency Labour Projects by MPs, the supervisory functions of the Regional Coordinating Councils (RCCs), emergency expenditure and running of the Office of the Administrator. Transfers to these programmes are referred to as Indirect Transfers

The Minister of Local Government and Rural Development and Minister of Finance outlined the following priority and national programmes for 2014.

- 1. Priority Intervention Programmes**

- i. School Feeding
- ii. Sanitation/Waste Management
- iii. Sanitation Guards
- iv. National Borehole Programme

- 2. Other National Programmes**

- i. Ghana Youth Employment and Entrepreneurial Development Agency (GYEEDA)  
Sanitation Module
- ii. People with Disability
- iii. Training
- iv. Cured Lepers

- **Constituency Labour Projects**

This is to provide funding for Constituency Labour Projects undertaken by Members of Parliament. All the Members of Parliament receive an equal amount to undertake projects in their respective constituencies.

- **Constituency Labour Monitoring & Evaluation**

This is to provide support for Constituency Monitoring and Evaluation by Members of Parliament. All the MPs receive an equal amount.

- **Regional Coordinating Councils**

The funds are for the Regional Coordinating Councils in their monitoring and supervisory functions of MMDAs in the respective Regions.

- **Reserve Fund**

This is to provide urgent funding for contingency/emergency expenditure.

- **Seed Capital for the Newly Created Assemblies**

This amount is allocated to the newly created Assemblies to start-up. It is for the construction of office buildings, purchase of vehicles, etc.

- **Direct Transfer**

All the funds that do not come under the Indirect Transfer are allocated in accordance with the Formula and sent directly to the MMDAs as Direct Transfer

## **2.4 Guideline for the Utilisation of DACF**

The guideline for the utilisation of DACF funds is a parameter release annually, upon which funds are distributed to the various sectors of the economy (common fund newsletter (2014)). The following guidelines were issued in accordance with section 9 of

the District Assemblies Common Fund Act of 1993, Act 455 for the utilization of funds to all Metropolitan/Municipal District Assemblies. The study considered 5 guidelines (2014, 2015, 2016, 2017 and 2018) to avoid monotony. Due to the large volumes of the guideline, though 5 guidelines were reviewed, the review captured the content of 2 (that's 2014 and 2015) due to its repetitive nature, nevertheless the other 3 guidelines are available at the DACF secretariat or any budget office at the various MMDA's in Ghana, which can be accessed for reference.

#### **2.4.1 Guideline for the Utilisation of DACF for 2014 Fiscal year (DACF secretariat, 2019)**

##### **(Part I) - Mandatory Requirements**

In line with the Government priority programmes, all MMDA's are required to allocate resources from their share of the Common Fund toward the Education and Health Facilities as follows:

- i. Construction of at least two (2) basic schools towards the elimination of schools under trees programme
- ii. Construction of at least two (2) CHPS compound

The following allocations should be made by each assembly after provision of funds for part I above

##### **a) Self Help Projects/Counterpart Funding**

Up to five percent (5%) should be allocated to support and sustain self-help spirit through community-initiated projects. Detailed guide for the operation of this fund are contained in Part IV.

**b) District Education Fund**

Up to two percent (2%) should be used to support and sustain a District Education Fund. The Fund shall be used to finance scholarships, bursaries or repayment of loans to finance needy student with a proven record of good academic performance.

**c) Establishing and Strengthening of Sub-District Structures**

Up to two percent (2%) should be used for the establishment and strengthening of Zonal, Urban, Town and Area Councils.

**d) District Response Initiative**

Half percent (1%) of the fund should be utilized to support the District Response Initiative (DRI). 0.5% each for both HIV/AIDS and prevention of Malaria

**e) Administration**

**i. Recurrent Expenditure**

Up to ten percent (10%) should be used in areas such as Human Resource Management, Logistics Support, Metropolitan, Municipal and District Planning Coordinating Unit (MMD/PCU) activities, Office Equipment, Furniture and Fitting, Servicing and Maintenance and Project Management.

**ii. Infrastructure**

Up to ten percent (10%) should be used to construct and renovate office building, accommodation for all key staff including the decentralized departments.

**f) Other Projects**

The remaining seventy and half percent (70%) should be used in the following areas:-

**(i) Economic Ventures**

Energy/Electrification, Markets, Industry, Agricultural, Roads, Streets, Bridges and Culverts, ICT and Private Sector Support.

**(ii) Social Services**

Education, Health, Water Supply, Housing, Disaster Management, Sports, Tourism/Culture and Security.

**(iii) Environment**

Sanitation/Waste Management, Fumigation, Drainage Systems and Environmental Protection.

**(Part II) - Budgetary Control and Accounting**

**a) Annual Development Budget Extract**

Each Assembly shall each year prepare an Annual Development Budget Extract from the composite budget covering the DACF. This is because allocations of the DACF are not made before the commencement of the MMDAS budgetary process for the period.

The Annual Development Budget Extract covering the District Assemblies Common Fund shall be part of the approved composite budget of the Assembly in accordance with section 112 of the Local Government Act, 462 and transmitted along with a copy of the resolution to the Regional Coordinating Council.

Regional Coordinating Council will collate and harmonize Annual Development Budget extract approved by assemblies into a Regional district Assemblies common Fund Budget.



In collating and harmonizing the Regional District Assemblies Common Fund Budget, the Regional Coordinating Council shall ensure that projects programmes and other activities are in conformity with the Ghana Shared Development Growth Agenda (GSDGS).

The Regional Coordinating Councils, shall distribute the collated Regional District Assemblies Common Fund Budget to:-

- (i) The Administrator of the District Assemblies Common Fund;
- (ii) The Ministry of local Government and Rural Development;
- (iii) The Ministry of Finance;
- (iv) The National Development Planning Commission.

**b) Accounting for Utilization of the Fund**

Financial Reports indicating:

- i. Monthly cash book (Financial Returns)
- ii. Amount Utilized
- iii. Balance in the District Assembly Common Fund Account
- iv. Outstanding contractual financial commitment for the succeeding period of three months should be submitted by the District Assembly at the end of each quarter (I.e. end of March, June, September and December) of the prescribed form and distributed to the:
  - Administrator of District Assemblies Common Fund
  - Controller and Accountant General's Department
  - Ministry of Local Government and Rural Development

- Regional Coordinating Council
- Member(s) of Parliament from the District

**c) Monthly Trial Balance, Receipt and Payments Statement and Bank Reconciliation Statement**

The periodic receipt from the District Assemblies Common Fund and expenditures therefore should be incorporated in the Monthly Trial Balance in two forms

- i. Project by Project recording expenditure
- ii. All payments and deductions (as requested by the MMDAS) by the Administrator of the DACF on behalf of Assemblies should be recorded in the relevant books of Accounts of the Assemblies and reflected in the Trial Balance, Receipts and Payments, Reconciliation Statements and other Financial Reports.
- iii. Any unspent balance of an MMDA share of the DACF should under no circumstances be credited to an Accumulated Surplus Fund of the Assembly. This balance should be treated as part of finances of net Assets in the Balance Sheet.

**d) Projects Implementation and Reporting**

The District Assembly shall report the physical progress of implementation of each project quarterly in the prescribed form.

**e) Award of Contracts (Refer to Procurement Law, Act 663)**

MMDAs are to be guided by the appropriate provision in the Public Procurement Act (663) for their projects and programmes.

**f) Payments from the DACF**

All transactions, including requested payments and deductions by the Administrator of the DACF and unredeemed contractual retentions should be recorded in the Books of Accounts of the Assembly. The transactions should be reflected in the quarterly Financial Returns and Monthly Trail Balance of the Assembly.

All payments should be made by the Finance officer of the Assembly in accordance with existing financial regulations and administrative instructions in force.

The unredeemed contractual retention should be treated as a deposit; and payment of matured retention monies should be paid out of the Deposit Account.

**g) Standard Design of Projects**

Standard Designs and their variations approved by the relevant sectors should be used in implementing all projects involving the construction of infrastructure. In this connection, the Ministry of Local Government and Rural Development has compiled a number of Standard Designs. Copies of the design document which include drawings and tender bid documents may be purchased from Regional Coordinating Councils.

**h) Supervision and Monitoring of Projects**

In accordance with Local Government Act of 1993, Act 462 and Section 142(1) (b) Regional Coordinating Councils are to monitor the use of all monies to the District Assemblies by any agency of the Central Government. Regional Coordinating Councils are also to ensure that, Assemblies, their Committees and Sub-Committees and also the Sub-District Structures (Urban, Town, Zonal and Area Councils) and their Unit committees perform their supervisory and monitoring functions.

**i) Disbursements on Zonal, Urban, Town and Area Councils Basis**

Assemblies are to note that Zonal, Urban, Town and Area Council areas are demarcated as development areas for purposes of direct allocation of funds and other development resources. This includes the identification and prioritization of development projects by the communities in the Zonal, urban, Town and Area Council areas for consideration, approval and inclusion in the development budget of the Assembly. (L.I.1589, Schedule 2, section 9 (iii) (vii).

**Part III - Utilization of the Reserve Fund Allocated to Parliamentary**

**a) Constituencies Labour Projects**

In approving the formula for sharing the district Assemblies Common Fund, Parliament, by consensus decision in 1997, resolved that a percentage of DACF allocation to Reserve Fund shall be shared on Parliamentary Constituency basis and that the utilization of this amount should be for projects selected and approved by the Member of Parliament.

The following revised instructions are provided in accordance with Section 91 (1) of the Local Government Act 1993, Act 462 and Section 9 of the District Assemblies Common Fund Act 1993, Act 455.

- (1) The amount shall be shared equally to the 275 Parliamentary Constituencies.
- (2) The amount shall be released quarterly to the Assemblies by the Administrator of the District Assemblies Common Fund and the Member of Parliament shall be notified.
- (3) A separate account shall be kept in respect of every constituency.
- (4) Under no circumstances shall money be withdrawn from this account without a memorandum from the sitting Member of Parliament from the constituency.

- (5) Where a memorandum has been raised do the District Chief Executive for a project to be financed under this fund, the Member of Parliament shall be given a reply within fourteen (14) working days as to whether the request has been passed or whether a query has been raised.
- (6) Payment from the account shall be made by the finances Officers of the Assembly.
- (7) Accounting for this fund shall form part of the accounts of the Assembly and shall be incorporated in the financial returns of the Assembly.
- (8) The District Chief Executive shall submit half-yearly progress reports on the operation of the constituency account to the Member of Parliament with copies to:
  - i. The Presiding Member for information of, the Assembly
  - ii. The Regional Minister, who shall compile the district half-yearly returns into regional returns and transmit to the Minister for Local Government and Rural Development.

**b) Guide for Selection of Projects**

The selection of projects for support by the Member of Parliament under the Constituency Fund should conform to National and District Specific Development Plans and Objectives and should: -

- i. Fall within the scope of functions of District Assemblies
- ii. Correspond to the poverty reduction strategy of the Assembly
- iii. Provide infrastructure in the areas of education, health, agriculture, water, sanitation, roads streets and drains.
- iv. Generate sustainable employment

- v. Aim at income generation and wealth creation
  - vi. Assist in disaster prevention and disaster relief
9. Projects, which fall within the functions of Sector Ministries such as clinics under health, and school buildings under Education and will require additional input to become operational or future repairs and maintenance, should have the approval of the relevant sector Ministry.
10. Where credit is granted to groups or individual entrepreneurs from this fund, it shall be done in conformity with credit recovery procedures.

**c) Policy Objective on Community Initiated Projects**

In support of a national policy of promoting and sustaining community-initiated projects, the following guidelines are provided for Assemblies.

**d) Projects Initiated**

All applications for assistance under MMDAs self-help programme budget must have evidence of having been initiated by the community. The Unit Committee, Zonal, Urban, Town or Area councils' approval to this effect will be required.

**e) Nature of Project**

Self-help projects selected for consideration should have the basic aim of contributing to the provision of basic community social infrastructure, micro jobs and services.

Additionally, they should have the following characteristics:

- The potential for quick implementation and for satisfying and relieving the hardship of as many communities as possible.
- Not require complex or sophisticated technology for implementation.

**f) Project Designs**

Standard/model design of construction works approved by the sector agency responsible for the subject areas of the project are available to all District Assemblies and can be made available to communities wishing to undertake a self-help development programme.

**g) Institutional Arrangements**

Urban/Town/Zonal/Area Unit levels will be responsible for the initiation selection, prioritization and mobilization of local resources and implementation of approved projects. The District Department of Community Development will provide the required technical assistance to participating communities.

District Assemblies will receive process and approve self-help project submission and applications for funding and incorporate these into the MMDAS development programme and budget. The District Planning Coordinating Units will be responsible for this activity.

Regional Co-ordinating Councils shall be responsible for the harmonization, monitoring and evaluation of District self-help development programmes.

**h) Funding of Self-Help Projects**

The level of funding self-help projects is crucial to sustaining the process. Sustaining the programme of Self-Help Projects could further be enhanced by donor official development assistance, targeted at community-initiated projects.

Funding Self-Help Projects shall be programmed into the composite budgets of Assemblies covering the District Assemblies Common Fund should be established by a budget line. In support of this budget lines, MMDA Internally Generated Revenue and the DACF shall be earmarked donor inflows targeted at self-help projects.

In the case of revenue generating self-help project funded on a cost recovery basis, proceeds shall be resolved through the Self-Help Project Fund.

**a) Budgeting**

The Self-Help component of approved District Plans shall be annualized as part of the MMDAs recurrent and capital expenditures. This should ensure that the relevant costs of activities, e.g. technical preparations, material, labour, overheads, supervision, monitoring and maintenance of self-help programmes and fully provided for and sustained.

**2.4.2 Guideline for the Utilisation of DACF for 2015 Fiscal year (DACF secretariat, 2019)**

**(Part I) - Mandatory Requirements**

In line with the Government priority programmes, all MMDA's are required to allocate resources from their share of the Common Fund toward the Education and Health Facilities as follows:

- i. Construction of at least two (2) basic schools towards the elimination of schools under trees programme
- ii. Construction of at least two (2) CHPS compound

The following allocations should be made by each assembly after provision of funds for part I' above

**a) Self Help Projects/Counterpart Funding**

Up to five percent (5%) should be allocated to support and sustain self-help spirit through community-initiated projects. Detailed guide for the operation of this fund are contained in Part IV.



**b) District Education Fund**

Up to two percent (2%) should be used to support and sustain a District Education Fund. The Fund shall be used to finance scholarships, bursaries or repayment of loans to finance needy student with a proven record of good academic performance.

**c) Establishing and Strengthening of Sub-District Structures**

Up to two percent (2%) should be used for the establishment and strengthening of Zonal, Urban, Town and Area Councils.

**d) District Response Initiative**

Half percent (1%) of the fund should be utilized to support the District Response Initiative (DRI). 0.5% each for both HIV/AIDS and prevention of Malaria

**e) Administration**

**i. Recurrent Expenditure**

Up to ten percent (10%) should be used in areas such as Human Resource Management, Logistics Support, Metropolitan, Municipal and District Planning Coordinating Unit (MMD/PCU) activities, Office Equipment, Furniture and Fitting, Servicing and Maintenance and Project Management.

**ii. Infrastructure**

Up to ten percent (10%) should be used to construct and renovate office building, accommodation for all key staff including the decentralized departments.

**f) Other Projects**

The remaining seventy and half percent (70%) should be used in the following areas:-

**(i) Economic Ventures**

Energy/Electrification, Markets, Industry, Agricultural, Roads, Streets, Bridges and Culverts, ICT and Private Sector Support.

**(ii) Social Services**

Education, Health, Water Supply, Housing, Disaster Management, Sports, Tourism/Culture and Security.

**(iii) Environment**

Sanitation/Waste Management, Fumigation, Drainage Systems and Environmental Protection.

**(Part II) - Budgetary Control and Accounting**

**Annual Development Budget Extract**

Each Assembly shall each year prepare an Annual Development Budget Extract from the composite budget covering the DACF. This is because allocations of the DACF are not made before the commencement of the MMDAS budgetary process for the period.

The Annual Development Budget Extract covering the District Assemblies Common Fund shall be part of the approved composite budget of the Assembly in accordance with section 112 of the Local Government Act, 462 and transmitted along with a copy of the resolution to the Regional Coordinating Council. Regional Coordinating Council will collate and harmonize Annual Development Budget extract approved by assemblies into a Regional district Assemblies common Fund Budget.

In collating and harmonizing the Regional District Assemblies Common Fund Budget, the Regional Coordinating Council shall ensure that projects programmes and other

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The Regional Coordinating Councils, shall distribute the collated Regional District Assemblies Common Fund Budget to:-

- (i) The Administrator of the District Assemblies Common Fund;
- (ii) The Ministry of local Government and Rural Development;
- (iii) The Ministry of Finance;
- (iv) The National Development Planning Commission.

• **Accounting for Utilization of the Fund**

Financial Reports indicating:

- (a) Monthly cash book (Financial Returns)
- (b) Amount Utilized
- (c) Balance in the District Assembly Common Fund Account
- (d) Outstanding contractual financial commitment for the succeeding period of three months should be submitted by the District Assembly at the end of each quarter (I.e. end of March, June, September and December) of the prescribed form and distributed to the:

- (i) Administrator of District Assemblies Common Fund
- (ii) Controller and Accountant General's Department
- (iii) Ministry of Local Government and Rural Development
- (iv) Regional Coordinating Council
- (v) Member(s) of Parliament from the District

- **Monthly Trial Balance, Receipt and Payments Statement and Bank Reconciliation Statement**

The periodic receipt from the District Assemblies Common Fund and expenditures therefore should be incorporated in the Monthly Trial Balance in two forms

- (a) Project by Project recording expenditure
- (b) All payments and deductions (as requested by the MMDAS) by the Administrator of the DACF on behalf of Assemblies should be recorded in the relevant books of Accounts of the Assemblies and reflected in the Trial Balance, Receipts and Payments, Reconciliation Statements and other Financial Reports.
- (c) Any unspent balance of an MMDA share of the DACF should under no circumstances be credited to an Accumulated Surplus Fund of the Assembly. This balance should be treated as part of finances of net Assets in the Balance Sheet.

- **Projects Implementation and Reporting**

The District Assembly shall report the physical progress of implementation of each project quarterly in the prescribed form.

- **Award of Contracts (Refer to Procurement Law, Act 663)**

MMDAs are to be guided by the appropriate provision in the Public Procurement Act (663) for their projects and programmes.

- **Payments from the DACF**

All transactions, including requested payments and deductions by the Administrator of the DACF and unredeemed contractual retentions should be recorded in the Books of

Accounts of the Assembly. The transactions should be reflected in the quarterly Financial Returns and Monthly Trail Balance of the Assembly.

All payments should be made by the Finance officer of the Assembly in accordance with existing financial regulations and administrative instructions in force.

The unredeemed contractual retention should be treated as a deposit; and payment of matured retention monies should be paid out of the Deposit Account.

- **Standard Design of Projects**

Standard Designs and their variations approved by the relevant sectors should be used in implementing all projects involving the construction of infrastructure. In this connection, the Ministry of Local Government and Rural Development has compiled a number of Standard Designs. Copies of the design document which include drawings and tender bid documents may be purchased from Regional Coordinating Councils.

- **Supervision and Monitoring of Projects**

In accordance with Local Government Act of 1993, Act 462 and Section 142(1) (b) Regional Coordinating Councils are to monitor the use of all monies to the District Assemblies by any agency of the Central Government. Regional Coordinating Councils are also to ensure that, Assemblies, their Committees and Sub-Committees and also the Sub-District Structures (Urban, Town, Zonal and Area Councils) and their Unit committees perform their supervisory and monitoring functions.

- **Disbursements on Zonal, Urban, Town and Area Councils Basis**

Assemblies are to note that Zonal, Urban, Town and Area Council areas are demarcated as development areas for purposes of direct allocation of funds and other development resources. This includes the identification and prioritization of development projects by

the communities in the Zonal, urban, Town and Area Council areas for consideration, approval and inclusion in the development budget of the Assembly. (L.I.1589, Schedule 2, section 9 (iii) (vii).

**Part III - Utilization of the Reserve Fund Allocated to Parliamentary Constituencies Labour Projects**

In approving the formula for sharing the district Assemblies Common Fund, Parliament, by consensus decision in 1997, resolved that a percentage of DACF allocation to Reserve Fund shall be shared on Parliamentary Constituency basis and that the utilization of this amount should be for projects selected and approved by the Member of Parliament.

The following revised instructions are provided in accordance with Section 91 (1) of the Local Government Act 1993, Act 462 and Section 9 of the District Assemblies Common Fund Act 1993, Act 455.

- (1) The amount shall be shared equally to the 275 Parliamentary Constituencies.
- (2) The amount shall be released quarterly to the Assemblies by the Administrator of the District Assemblies Common Fund and the Member of Parliament shall be notified
- (3) A separate account shall be kept in respect of every constituency.
- (4) Under no circumstances shall money be withdrawn from this account without a memorandum from the sitting Member of Parliament from the constituency.
- (5) Where a memorandum has been raised do the District Chief Executive for a project to be financed under this fund, the Member of Parliament shall be given a reply within fourteen (14) working days as to whether the request has been passed or whether a query has been raised.

- (6) Payment from the account shall be made by the finances Officers of the Assembly.
- (7) Accounting for this fund shall form part of the accounts of the Assembly and shall be incorporated in the financial returns of the Assembly.
- (8) The District Chief Executive shall submit half-yearly progress reports on the operation of the constituency account to the Member of Parliament with copies to:
  - (a) The Presiding Member for information of, the Assembly
  - (b) The Regional Minister, who shall compile the district half-yearly returns into regional returns and transmit to the Minister for Local Government and Rural Development.

- **Guide for Selection of Projects**

The selection of projects for support by the Member of Parliament under the Constituency Fund should conform to National and District Specific Development Plans and Objectives and should: -

- (a) Fall within the scope of functions of District Assemblies
  - (b) Correspond to the poverty reduction strategy of the Assembly
  - (c) Provide infrastructure in the areas of education, health, agriculture, water, sanitation, roads streets and drains.
  - (d) Generate sustainable employment
  - (e) Aim at income generation and wealth creation
  - (f) Assist in disaster prevention and disaster relief
9. Projects, which fall within the functions of Sector Ministries such as clinics under health, and school buildings under Education and will require additional input to

become operational or future repairs and maintenance, should have the approval of the relevant sector Ministry.

10. Where credit is granted to groups or individual entrepreneurs from this fund, it shall be done in conformity with credit recovery procedures.

- **Policy Objective on Community Initiated Projects**

In support of a national policy of promoting and sustaining community-initiated projects, the following guidelines are provided for Assemblies.

- **Projects Initiated**

All applications for assistance under MMDAs self-help programme budget must have evidence of having been initiated by the community. The Unit Committee, Zonal, Urban, Town or Area councils' approval to this effect will be required.

- **Nature of Project**

Self-help projects selected for consideration should have the basic aim of contributing to the provision of basic community social infrastructure, micro jobs and services. Additionally, they should have the following characteristics:

- The potential for quick implementation and for satisfying and relieving the hardship of as many communities as possible.
- Not require complex or sophisticated technology for implementation.

- **Project Designs**

Standard/model design of construction works approved by the sector agency responsible for the subject areas of the project are available to all District Assemblies and can be made available to communities wishing to undertake a self-help development programme.



- **Institutional Arrangements**

Urban/Town/Zonal/Area Unit levels will be responsible for the initiation selection, prioritization and mobilization of local resources and implementation of approved projects. The District Department of Community Development will provide the required technical assistance to participating communities. District Assemblies will receive process and approve self-help project submission and applications for funding and incorporate these into the MMDAS development programme and budget. The District Planning Co-ordinating Units will be responsible for this activity.

Regional Co-ordinating Councils shall be responsible for the harmonization, monitoring and evaluation of District self-help development programmes.

- **Funding of Self-Help Projects**

The level of funding self-help projects is crucial to sustaining the process. Sustaining the programme of Self-Help Projects could further be enhanced by donor official development assistance, targeted at community-initiated projects.

Funding Self-Help Projects shall be programmed into the composite budgets of Assemblies covering the District Assemblies Common Fund should be established by a budget line. In support of this budget lines, MMDA Internally Generated Revenue and the DACF shall be earmarked donor inflows targeted at self-help projects.

In the case of revenue generating self-help project funded on a cost recovery basis, proceeds shall be revolving through the Self-Help Project Fund.

- **Budgeting**

The Self-Help component of approved District Plans shall be annualized as part of the MMDAs recurrent and capital expenditures. This should ensure that the relevant costs of

activities, e.g. technical preparations, material, labour, overheads, supervision, monitoring and maintenance of self-help programmes and fully provided for and sustained.

## **2.5 Definition of Project**

The word PROJECT comes from the Latin word PROJECTUM from the Latin verb PROICERE; which means “to throw something forwards” which in turn comes from PRO, which denotes something that precedes the action of the next part of the word in time and ICERE, “to throw”. The word PROJECT thus actually originally meant “something that comes before anything else happens” (Project Management Guide, 2019). This article by Project Management Guide (PMG), 2019 further explained that project has a definite beginning and a definite end; and has a definitive time frame; and creates unique deliverables, which are products, services, or results. It in addition creates a capability to perform a service and it is always developed in steps and can be continued by Progressive Elaboration. Project Management Institute (PMI), 2019 elaborated that project is unique in that, it is not a routine operation, but a specific set of operations designed to accomplish a singular goal. So, a project team often includes people who don't usually work together sometimes from different organizations and across multiple geographies.

However, the word project has often times been used in conjunction with the term project management to make it complete and more meaningful to users; and are about delivering change (Cleland, 1999 as cited by Kissi, 2013) but the successful projects are not just about managing change; they are also about managing relationships and managing uncertainty (Bourne & Walker, 2003 cited by Kissi, 2013). The view of,

Turner (1993) as cited by Kissi, 2013 expanded the meaning of the project by defining it as an endeavour in which human or machine, material and financial resource are organized in a novel undertaken, a unique scope of work, of given specification, within constraints of cost and time so as to deliver beneficial change defined by quantities and qualitative objectives. However, Turner and Muller (2002) as cited by Kissi (2013) realised that, this definition addresses the project as both a temporary organisation, and a production function and an agency of assigning resources. Subsequently, Turner and Muller (2002) as cited by Kissi (2013) reviewing Turner (1999) maintain the definition by concentrating more on the features of projects. They emphasised the arrangement of features shared by projects

undertaken to deliver beneficial change, it thus has three essential features:

- It is unique: no project before or after will be the same.
- It is undertaken using novel processes: no project before or after will use exactly the same approach.
- It is transient: it has a beginning and an e

## **2.6 Overview of Building Construction Project Delivery**

According to Straube (2006) Building Construction probably began with simple forms of construction being used for shelter from the wind, sun and rain. Gradually, as the desire for better shelter grew, suitable materials were identified and construction skills were developed. Forms of building evolved over generations and, since the requirements were relatively simple and change was usually very slow, the design, the building materials and the construction techniques evolved at a pace dictated by matching need, tradition

and available resources. As society flourished, construction materials and techniques developed from reeds and mud into manufactured baked mud and burnt clay brick (Sandstroem 1970 as cited straub, 2006). The Industrial Revolution of Building Delivery dramatically changed the situation, leading to the rapid development of new materials, products and techniques. New forms of energy generation and equipment facilitated space conditioning and extended humankind's environment to include less hospitable climates. The building structure, its form, assembly techniques and materials underwent radical change in the relatively short period between the 19th century and the present time. Specialization and mass-production, the hallmarks of the Industrial Revolution, were slowly introduced into the building industry. The superstructure, and to a much lesser degree, the enclosure began to be considered separately as specialized components. Many buildings evolved as a structural endow-skeleton with an enclosing skin. In the West, the traditional massive wall systems gave way to skeletal structural systems, often with non-load-bearing enclosures and the birth of the modern skyscraper occurred with the start of construction, in 1884 (Sandstroem 1970 as cited straub, 2006). Rai et al. (2011) postulates that Building Construction is a complex, significant, and rewarding process and it begins with an idea and culminates in a structure that may serve its occupants for several decades, even centuries. Like the manufacturing of products, building construction requires an ordered and planned assembly of materials. It is, however, far more complicated than product manufacturing. Buildings are assembled outdoors by a large number of diverse constructors and artisans on all types of sites and are subject to all kinds of weather conditions. Additionally, even a modest-sized building must satisfy many performance criteria and legal constraints, requires an immense variety

of materials, and involves a large network of design and production firms. Building construction is further complicated by the fact that no two buildings are identical; each one must be custom built to serve a unique function and respond to its specific context and the preferences of its owner, user, and occupant. Because of a building's uniqueness, we invoke first principles in each building project. Although it may seem that we are "re-inventing the wheel", we are in fact refining and improving the building delivery process. Regardless of the uniqueness of each building project, the flow of activities, events, and processes necessary for a project's realization is virtually the same in all buildings.

Frimpong et al. (2003) as cited by Kissi et al. (2018), assumed that the success of a project is cramped to the project's goals and set objectives within an explicit project scope. Kissi et al. (2018) further proposed that project is administrated by many characteristics; however, a completed project which meets its technical requirements, required quality and intended duration clearly defines the success of a project. Shaban (2008) as cited by Kissi et al. (2018), specified that projects basically revolve around three areas, these are completing a project in time, within an estimated budget based on a defined quality with the aim of getting value for money. Project delivery systems are critical for achieving project success as they entail an essential aspect of an organisation's strategic planning and management processes that seek to minimise risks and uncertainties (Gisela, 2013). It has been argued that one major factor that often derail project success is poor management of the delivery system, such that in many occasions underperforming delivery systems tend to undermine the inevitable uncertainties that need to be overcome to avoid project failures (Smith, 1999 as cited by Gisela, 2013).

Work delivery has been one of the effective means of realizing value for money in all spheres of life especially in the manufacturing and service provision industry; and for that matter the work delivered must be of good quality.

## **2.7 Theory and Concept of Building Construction Project Delivery**

Building Construction Project Delivery (BCPD) is the process and procedures for the design and construction of buildings and grounds (Bill Dikis, 2015). Project delivery consists of planning, design, construction and other services necessary for organizing, executing and completing a building facility (gkk works, 2013). The process by which a building project is delivered to its owner may be divided into the following five phases, referred to as the project delivery phases (Mesa et al, 2016). He further explained that although there is usually some overlap between adjacent phases; the researcher hypothesises that they generally follow this order:

- Predesign phase
- Design phase
- Preconstruction phase
- Construction phase
- Post construction phase

Mesa et al, 2016 in addition caption each delivery phase and clarified as indicated below:

### **2.7.1 Predesign Phase**

During the predesign phase (also called the planning or programming phase), the project is defined in terms of its function, purpose, scope, size, and economics. This is the most crucial of the five phases, and is almost always managed by the owner and the owner's

team. The success or failure of the project may depend on how well this phase is defined, detailed, and managed. Obviously, the clearer the project's definition is, the easier it is to proceed to the subsequent phases. Some of the important predesign tasks are:

- Details of the project's program.
- Economic feasibility assessment, including the project's overall budget and financing.
- Site assessment and selection, including the verification of the site's appropriateness, and determining its designated land use.
- Governmental constraints assessment, for example, building code and zoning constraints and other legal aspects of the project.
- Sustainability rating - whether the owner would like the project to achieve sustainability rating, such as the U.S. Green Building Council's (USGBC's) Leadership in Energy and Environmental Design (LEED) certification at some level.
- Design team selection.

### **2.7.2 Building (Project) Programme**

This includes defining the activities, functions, and spaces required in the building, along with their approximate sizes and their relationships with each other. For a house or another small project, the program is usually simple and can be developed by the owner without external assistance. For a large project, however, where the owner may be an institution (such as a corporation, school board, hospital, religious organization, or governmental entity), developing the program may be a complex exercise. This may be due to the size and complexity of the project or the need to involve several individual's corporation's board of directors, for example in decision making. These constituencies may have different views of the project, making it difficult to create a consensus.

Program development may also be complicated by situations in which the owner has a fuzzy idea of the project and is unable to define it clearly. By contrast, experienced owners tend to have a clear understanding of the project and generally provide a detailed, unambiguous program to the PM. Although the owner must provide the program details to the project manager (PM), it is not unusual for the owner to involve the PM in preparing the program for some complex projects. In this instance, the PM may be hired early during the predesign phase. Whatever the situation, preparing the program is the first step in the project delivery process. It should be spelled out in writing and in sufficient detail to guide the design, reduce the liability risk for the architect, and avoid its misinterpretation. If a revision is made during the progress of the project, the owner's written approval is necessary.

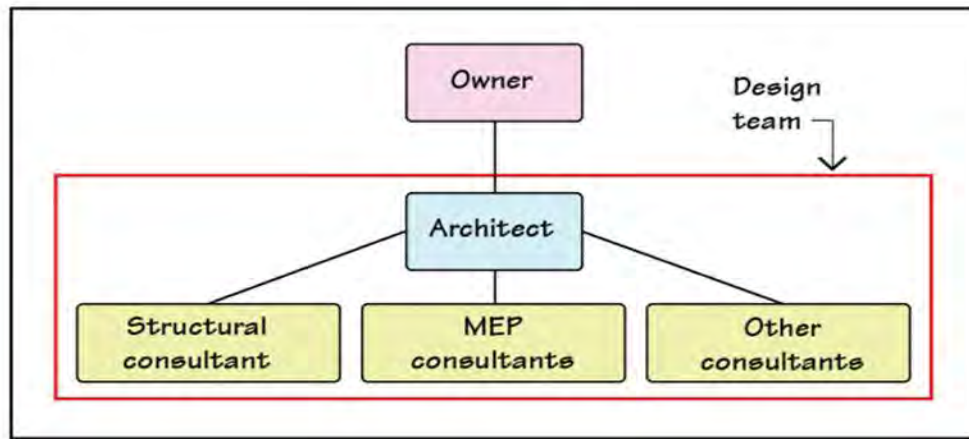
### **2.7.3 Design Phase**

The design phase begins after the selection of the architect. Because the architect (usually a firm) may have limited capabilities for handling the broad range of building-design activities, several different, more specialized consultants are usually required, depending on the size and scope of the project. In most projects, the design team consists of the architect, landscape architect, civil and structural consultants, and mechanical, electrical, and plumbing (MEP) consultants.

In complex projects, the design team may also include an acoustical consultant, roofing and water-proofing consultant, cost consultant, building code consultant, signage consultant, interior designer, and so on. Some design firms have an entire design team (architects and specialized consultants) on staff, in which case, the owner will contract with a single firm. Generally, however, the design team comprises several different

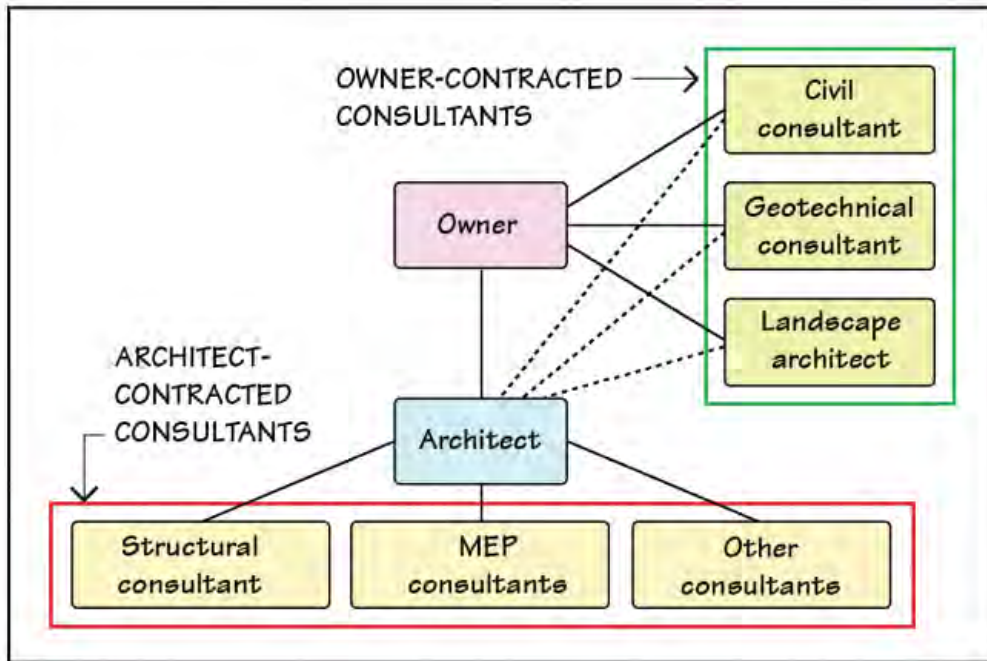


design firms. In such cases, the owner typically contracts the architect, who in turn contracts the remaining design team members as Figure 2.2 depicts. Thus, the architect functions as the prime design professional and, to a limited degree, as the owner's representative. The architect is liable to the owner for his or her own work and that of the consultants. For that reason, most architects ensure that their consultants carry adequate liability insurance.



**Figure 2.1 Members of a typical design team in a traditional contractual set-up**  
*Source: Mesa et al, (2016)*

Mesa et al. (2016) in addition pointed out that, in some projects, the owner may contract some consultants directly, particularly a civil consultant (for a survey of the site, site grading, slope stabilization, and the design of site drainage system), a geotechnical consultant (for investigation of the soil properties), and a landscape architect (for landscape and site design), Figure 2.3. These consultants may be engaged before or at the same time as the architect.



**Figure 2.2: Members of a typical design team in a project where some consultant are contracted directly by the owner.**

*Source: Mesa et al (2016)*

Even when a consultant is contracted directly by the owner, the architect retains some liability for the consultant's work. This liability occurs because the architect, being the prime design professional, coordinates the entire design effort, and the consultants' work is influenced a great deal by the architectural decisions. Therefore, the working relationship between the architect and an owner-contracted consultant remains essentially the same as if the consultant were chosen by the architect. In some cases, an engineer or another professional may coordinate the design process. This generally occurs where architectural design is a minor component of a large-scale project. For example, in a highly technical project such as a power plant, an electrical engineer may be the prime design professional.

## **2.7.4 Three Sequential Stages in Design Phase**

In most building projects, the design phase consists of three stages, which occur in the following sequence:

- Schematic design (SD) stage
- Design development (DD) stage
- Construction document (CD) stage

### **2.7.4.1 Schematic Design Stage Emphasis on Design**

The schematic design gives graphic shape to the project program. It is an overall concept that illustrates key ideas of the design solution. The major player in this stage is the architect who develops the design scheme (or several design options), generally with limited help from the consultants. Because most projects have strict budgetary limitations, a rough estimate of the project's probable cost is generally produced at this stage. The schematic design usually goes through several revisions, because the first design scheme prepared by the architect will rarely be approved by the owner. The architect communicates the design proposal(s) to the owner through various types of drawings plans, elevations, sections, freehand sketches, and three-dimensional graphics (isometrics, axonometric, and perspectives). For some projects, a three-dimensional scale model of the entire building or the complex of buildings, showing the context (neighboring buildings) within which the project is sited, may be needed. With significant developments in electronic media technology, especially building information modeling (BIM), computer-generated imagery has become common in architecture and related engineering disciplines. Computer-generated walk-through and flyover simulations are becoming increasingly popular for communicating the architect's design intent to the

owner at the SD stage. It is important to note that the schematic design drawings, images, models, and simulations, regardless of how well they are produced, are not adequate to construct the building. Their objective is merely to communicate the design scheme to the owner (and to consultants, who may or may not be on board at this stage), not to the contractor.

#### **2.7.4.2 Design Development Stage – Emphasis on Decision Making**

Once the schematic design is approved by the owner, the process of designing the building

in greater detail begins. During this stage, the schematic design is developed further hence

the term *design development* (DD) stage. While the emphasis in the SD stage is on the creative, conceptual, and innovative aspects of design, the DD stage focuses on developing practical, pragmatic, and constructible solutions for the exterior envelope, structure, fenestration, interior systems, MEP systems, and so forth. This development involves strategic consultations with all members of the design team. Therefore, the most critical feature of the DD stage is decision making, which ranges from broad design aspects to finer details. At this stage, the vast majority of decisions about products, materials, and equipment are made. Efficient execution of the construction documents depends directly on how well the DD is managed. A more detailed version of the specifications and probable cost of the project is also prepared at this stage.

#### **2.7.4.3 Construction Document Stage – Emphasis on Documentation**

The purpose of the *construction documents* (CD) stage is to prepare all documents required by the contractor to construct the building. During this stage, the consultants and

architect collaborate intensively to work out the “nuts and bolts” of the building and develop the required documentation, referred to as *construction documents*. All of the consultants advise the architect, but they also collaborate with each other (generally through the architect) so that the work of one consultant agrees with that of the others.

The construction documents consist of the following items:

- Construction drawings
- Specifications

**a. Construction Drawing (CD)**

During the CD stage, the architect and consultants prepare their own sets of drawings referred to as *construction drawings*. Thus, a project has architectural construction drawings, civil and structural construction drawings, MEP construction drawings, landscape construction drawings, and so on. Construction drawings are dimensioned drawings (usually computer generated) that fully delineate the building. They consist of floor plans, elevations, sections, schedules, and various large-scale details. The details depict a small portion of the building that cannot be adequately described on smaller-scale plans, elevations, or sections. Construction drawings are the drawings that the construction team uses to build the building. Therefore, they must indicate the geometry, layout, dimensions, types of materials, details of assembling the components, colors and textures, and so on. Construction drawings are generally two-dimensional drawings, but three-dimensional isometrics are sometimes used for complex details. Construction drawings are also used by the contractor to prepare a detailed cost estimate of the project at the time of bidding. Construction drawings are not a sequence of assembly instructions, such as for a bicycle. Instead, they indicate what every component is and

where it will be located when the building is completed. In other words, the design team decides the “what” and “where” of the building. The “how” and “when” (means, methods, and sequencing) of construction are entirely in the contractor’s domain.

### **b. Specifications**

Buildings cannot be constructed from drawings alone, because there is a great deal of information that cannot be included in the drawings. For instance, the drawings will give the locations of columns, their dimensions, and the material used (such as reinforced concrete), but the quality of materials, their properties (the strength of concrete, for example), and the test methods required to confirm compliance cannot be furnished on the drawings. This information is included in the document called *specifications*. Specifications are written technical descriptions of the design intent, whereas the drawings provide the graphic description. The two components of the construction documents, the specifications and the construction drawings complement each other and generally deal with different aspects of the project. Because they are complementary, they are supposed to be used in conjunction with each other. There is no order of precedence between the construction drawings and the specifications. Thus, if an item is described in only one place either the specification or the drawings it is part of the project, as if described in the other. For instance, if the construction drawings do not show the door hardware (hinges, locks, handles, and other components) but the hardware is described in the specifications, the owner will get the doors with the stated hardware. If the drawings had precedence over the specifications, the owner would receive doors without hinges and handles. Generally, there is little overlap between the drawings and the specifications. More importantly, there should be no conflict between them. If a

conflict between the two documents is identified, the contractor must bring it to the attention of the architect promptly. In fact, construction contracts generally require that before starting any portion of the project, the contractor must carefully study and compare the drawings and the specifications and report inconsistencies to the architect or the consultant. If the conflict between the specifications and the construction drawings goes unnoticed initially but later results in a dispute, the courts have in most cases resolved it in favor of the specifications implying that the specifications, not the drawings, govern the project. However, if the owner or the design team wishes to reverse the order, it can be so stated in the owner contractor agreement.

#### **2.7.5 Owner's Role during Design Phase**

The owner's role in the design phase of the project may not appear as active as in the predesign phase, but it is important all the same. In fact, a conscientious owner will be fully involved throughout the entire project delivery process from the predesign phase through the project closeout phase.

#### **2.7.6 Preconstruction Phase: The Bidding Documents**

The preconstruction phase comprises two important activities: preparation of bidding documents (also called bid package) and the selection of the general contractors (GC). The bidding documents are prepared by the consultant with the help of the entire design team. They are documents that are used by the GC to bid for the construction of the project. They include:

- (i) Construction Documents, which comprises construction drawings and specifications

- (ii) Procurement and Contracting Requirements, contains legal and contractual information that the GC must be aware of before preparing the bids. For the ease of grasping its contents, it may be divided into four parts:
- bid procurement requirements
  - contract requirements
  - contract administration, and
  - Available project information.

As shown in Figure 2.4, the bid procurement part refers to items that a GC will typically not deal with after signing the contract, such as instruction to bidders, pre-bid meetings, and bid bond information. The contract requirements part contains owner-GC agreement, conditions of contract, etc. Contract administration includes performance and payment bond details, and requirements for certificates of substantial and final completion. Available project information relates to land survey, geotechnical information, geophysical information, etc. An important component of geophysical information is the degree of seismicity of the site. The bidding documents may also contain addenda. An addendum refers to a document that is added to the original construction documents during the bidding period because of the errors or omissions observed after the bidding documents have been released to the bidders. An addendum may also become necessary in response to questions raised during a pre-bid meeting by the prospective bidders. After the contract has been awarded to the successful bidder, the bidding documents become the contract documents. The contract documents may also include modifications to owner-GC contract after the execution of the original contract. The items included in



contract documents are shown in Figure 2.5, which also illustrates the differences between construction documents, bidding documents, and contract documents.

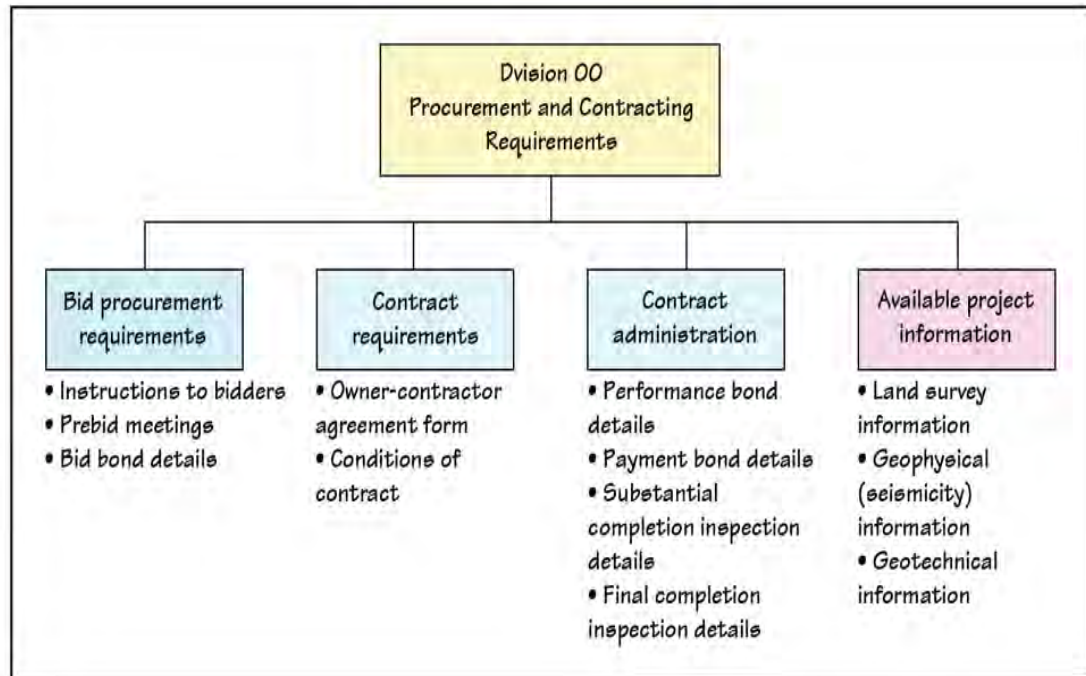


Figure 2.3: Important of master format Division 00

Source: Mesa et al (2016)



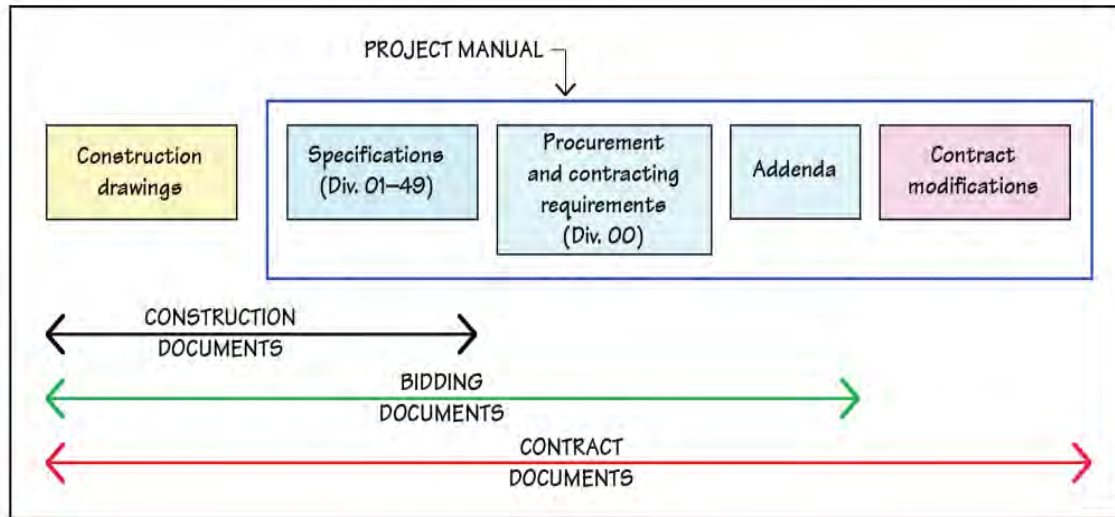


Figure 2.4: Difference among construction documents, bidding documents  
 Source: Mesa et al (2016)

### 2.7.7 Preconstruction Phase:

#### (The Surety Bonds, Selecting the General Contractor and Project Delivery)

It is essential that the GCs bidding for the project are qualified by virtue of their financial resources and a successful record of contracting experience to undertake the project of the

size and complexity of the owner's project. Therefore, a reliable and just process of screening the GCs must be used, which is achieved by requiring the GCs to provide bonds to the owner.

A bond is a form of surety, which ensures that if the GC fails to fulfill contractual obligations, there will be a financially sound third party—referred to as the surety (also called the guarantor or bonding company) available to take over those unfulfilled obligations of the GC. The bond is, therefore, a form of insurance that the GC buys from a surety a bonding company. There are three types of surety bonds in most building

projects. A few others may be required in some special projects. The three types of bonds are:

- Bid bond,
- Performance bond and
- Payment bond, each with a unique purpose, as described hereunder, and illustrated in Figure 1.13.

**a) Bid Bond**

The purpose of the bid bond (also called the bid security bond) is to exclude frivolous bidders. It ensures that, if selected by the owner, the bidder (GC) will be able to enter into a contract with the owner based on the bidding requirements, and that the bidder will be able to obtain performance and payment bonds from an acceptable bonding company. A bid bond is required at the time the GC submits the bid for the project. If the GC refuses to enter into an agreement or is unable to provide the required performance and payment bonds, the bonding company is obliged to pay a penalty (bid security amount) to the owner usually between 5% and 10% of the project's anticipated cost.

**b) Performance Bond**

The performance bond is required by the owner before entering into an agreement with the successful GC. The performance bond ensures that if, after the award of the contract, the GC is unable to perform the work as required by the contract documents, the bonding company will provide sufficient funds for the completion of the project. A performance bond protects the owner against default by the GC or by those for whose work the GC is responsible, such as the subcontractors. For that reason, the GC will generally require a performance bond from all major sub-contractors.

### c) Payment Bond

A payment bond (also referred to as a labor and materials bond) ensures that those providing labor, services, and materials for the project such as the subcontractors and material suppliers will be paid by the GC. In the absence of the payment bond, the owner may be held liable to those subcontractors and material suppliers whose services and materials have been invested in the project. This liability exists even if the owner has paid the GC for the work of these subcontractors and material suppliers.

### d) Pros and Cons of Bonds

The bonds are generally mandated for a publicly funded project. In a private project, the owner may waive the bonds, particularly the bid bond. This saves the owner some money because although the cost of a bond (the premium) is paid by the GC, it is in reality paid by the owner since the GC adds the cost of the bond to the bid amount.

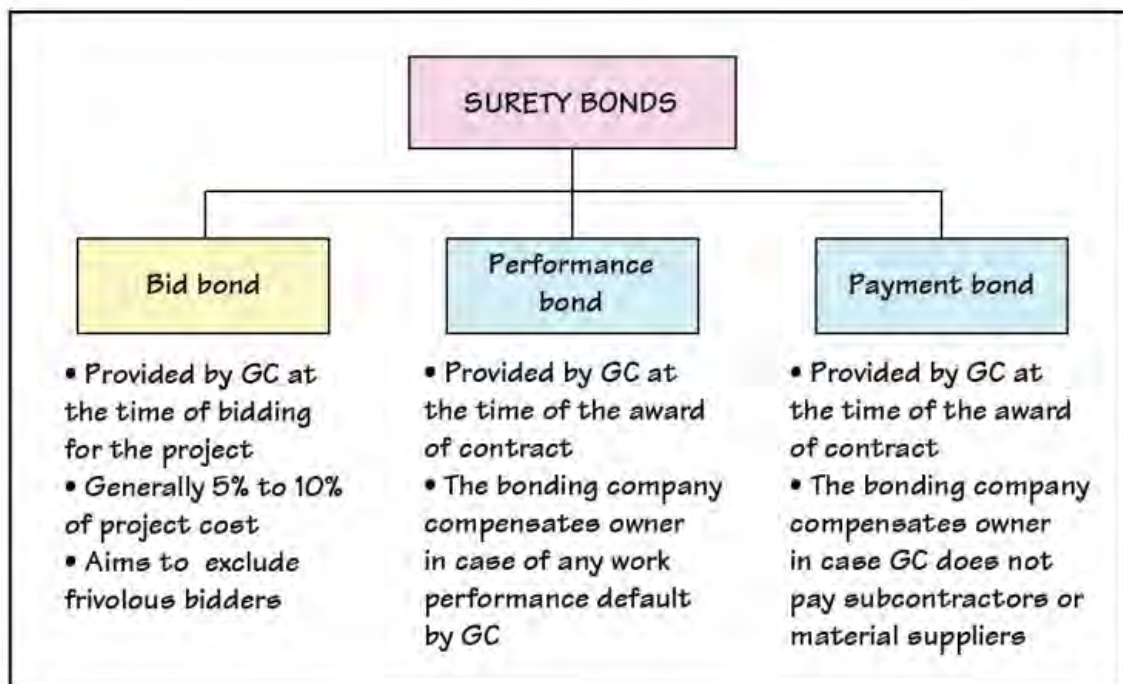


Figure 2.5: Details of three surety bonds used in construction projects.

Source: Mesa et al (2016)

Despite their cost, most owners consider the bonds (particularly the performance and payment bonds) a good value because they eliminate the financial risks of construction.

The bid bond is unnecessary in an invitational bidding method where the owner knows the GC's financial standing and the ability to perform. However, where uncertainty exists,

a bid bond provides an excellent prequalification screening of the GC. Responsible GCs and subcontractors generally maintain a close and continuous relationship with their bonding companies. Therefore, the bonding company's knowledge of a contractor's financial and contracting capabilities far exceeds that of most owners or architects (as the owner's representative). After the bidding documents are ready, the selection of the GC is next obvious and a significant step forward. A number of selection methods exist. They differ from each other depending on:

- a. The basis of selection open competition, limited competition, or negotiation with selected GCs,
- b. The timing of selection—stage of the project at which the selection is made predesign phase, design phase, or preconstruction phase,
- c. The GC's role during the design phase, and
- d. The level of coordination between the design and construction teams through all phases of the project.

### **2.7.8 Construction Phase:**

#### **(Submittals, Construction Progress Documentation and Contract Administration)**

The construction phase begins after the GC has been selected, contract awarded, and "notice to proceed" has been issued. The selection of a GC is a function of the chosen

project delivery method. Regardless of the chosen project delivery method, the role of GC in the construction phase remains essentially the same in all of them, and the GC must conform to the work described in the contract documents. In preparing the contract documents, the design team's aim is to communicate the design intent effectively in order to minimize missing pieces of information. However, in almost every project, there are a few items that cannot be described to absolute finality in contract documents. For these items, the design team makes its final decision based on the information sought from the GC. Typical submittals include material and product samples, product performance data, etc. The GC will normally have an inspection process to ensure that the work of all subcontractors is progressing as indicated in the contract documents and that the work meets the standards of quality and workmanship. On smaller projects, this may be done by the project superintendent. On large projects, a team of quality-assurance inspectors generally assists the contractor's project superintendent. These inspectors are individuals who, by training and experience, are specialized in their own areas of construction—for example, concrete, steel, or masonry. Additional quality control is required by the contract through the use of independent testing laboratories. For instance, structural concrete brought to the site must be verified for strength and other properties by independent concrete-testing laboratories. Leaving quality control of materials and performance entirely in the hands of the GC is considered inappropriate. It can render the owner vulnerable to omissions and errors in the work, and it places an additional legal burden on the GC. Therefore, the owner usually retains the services of the project architect to provide a third-party level of scrutiny to administer the construction contract.

If not, the owner will retain another independent architect, engineer, or inspector to provide construction contract administration services.

### **2.7.9 Inspection of Works**

The project consultant role during the construction phase has evolved over the years. There was a time when architects provided regular supervision of their projects during construction, but the liability exposure resulting from the supervisory role became so adverse for the architects that they have been forced to relinquish this responsibility. Instead, the operative term for the architect's role during construction is referred to as *field observation* of the work. The observational role still allows the architects who is also part of the consultant of the project to verify that their drawings and specifications are transformed into reality just as they had conceived. It also provides a sufficient safeguard against the errors caused by the contractors' misinterpretation of contract documents in the absence of the architects' clarification and interpretation. The shift in the consultant role to observer of construction also recognizes the important and entirely independent role that the GC must play during construction. This recognition provides full authority to the GC to proceed with the work in the manner that the GC deems appropriate. This reinforces the earlier statements that:

- The consultant determines the *what* and *where*.
- The GC determines the *how* (means and methods) and *when* (sequence) of construction.

In other words, daily supervision or superintendence of construction is the function of the GC the most competent person to fulfil this role. The consultant provides periodic observation and evaluation of the GC's work and notifies the owner if the work is not in

compliance with the intent of the contract documents. This underscores the division between the responsibilities of the consultant and the GC during construction. Note that by providing observation, the consultant does not certify the GC's work. Nor does the observation relieve the GC of his or her responsibilities under the contract. The GC remains fully liable for any error that has not been discovered through the consultant observation. However, the consultant may be held liable for all or part of the work observed, should the consultant fail to detect or provide timely notification of work not conforming to the contract documents. This omission is known as *failure to detect*. Because many components can be covered up by other items over days or hours, the consultant should visit the construction site at regular intervals, as appropriate to the progress of construction. For example, earthwork covers foundations and underground plumbing, and gypsum board covers ceiling and wall framing. Observing the work after the components are hidden defeats the purpose of observation. On some projects, a resident project supervisor or engineer may be engaged by the consultant, at an additional cost to the owner, to observe the work of the GC. Under the conditions of the contract, the GC is generally required to provide this person with an on-site office, water, electricity, a telephone, and other necessary facilities. There are only two times during the Administrator construction of a project that the consultant makes an exception to being an observer of construction. At these times, the consultant inspects the work. These inspections are meant to verify the GC's claim that the work is:

- (a) Substantially complete and
- (b) Fully complete, and hence is ready for the final payment. These inspections are referred to as:



- Substantial completion inspection
- Final completion inspection

#### **2.7.10 Payment certifications**

In addition to construction observation and inspection, there are several other duties the consultant must discharge in administering the contract between the owner and the GC. Certifying (validating) the GC's periodic requests for payment against the work done and the materials stored at the construction site is perhaps the most critical of these functions. An application for payment (typically made once a month unless stated differently in the contract) is followed by the consultant evaluation of the work and necessary documentation to verify the GC's claim. Because the consultant is not involved in day-to-day supervision, the issuance of the certificate of payment by the architect does not imply acceptance of the quality or quantity of the GC's work. However, the architect has to be judicious and impartial to both the owner and the GC, and perform within the bounds of the contract.

#### **2.7.11 Change Orders**

There is hardly a construction project that does not require changes after construction has begun. The contract between the owner and the GC recognizes this fact and includes provisions for the owner's right to order a change and the GC's obligation to accept the change order in return for an equitable price adjustment. Here again, the architect performs a quasi-judicial role to arrive at a suitable agreement and price between the owner and the GC. Note that the change orders refer to minor changes in the project and are unilaterally made by the owner. Where the project requires significant modifications,

the contract must be modified and the modifications are to be mutually agreed upon between the owner and the GC. Thus, a construction contract differentiates between “changes” and “modifications”.

#### **2.7.12 Post Construction Phase: Project Closeout**

Once the project is sufficiently complete, the GC will ask the consultant to conduct a substantial completion inspection to confirm that the work is complete in most respects. By doing so, the GC implies that the work is complete enough for the owner to occupy the facility and start using it, even though there might be cosmetic and minor work yet to be completed. The GC’s request for substantial completion inspection by the consultant should include a list of incomplete portions of the work (to be completed), referred to as the punch list. The punch list, which is prepared by the GC, is used by the architect as a checklist to review all work, not merely the incomplete portions of the work. If the consultant’s inspection discloses incomplete items not included in the GC’s punch list, they are added to the list by the consultant. The substantial completion inspection is also conducted by the consultant. Incomplete items discovered by them are also added to the punch list. If the additional items are excessive, the architect may ask the GC to complete the selected items before rescheduling the substantial completion inspection.

#### **2.7.13 Certificate of Occupancy and GC’s Request for Substantial Completion Inspection**

The GC is required to secure a certificate of occupancy before requesting substantial completion inspection by the architect and the design team. The certificate of occupancy is provided by the authority having municipal jurisdiction over the project usually the city where the project is permitted and built. The certificate of occupancy confirms that all

appropriate inspections and approvals, required by the authority having jurisdiction, have taken place, the project is safe to use and occupy, and that the site has been cleared of the GC's temporary facilities so that the owner can occupy the building without obligations to any authority.

#### **2.7.14 Substantial Completion the Most Important Project Date**

In addition to the certificate of occupancy, the GC must submit all required warranties and

warranties from the manufacturers of equipment and materials and the specialty subcontractors and installers used in the building. For instance, the manufacturers of roofing materials, windows, curtain walls, mechanical equipment, etc. warrant their products for specified time periods. These warranties are in addition to the standard one-year correction period between the owner and the GC. The warranties are to be given to the architect at the time of substantial completion for review and transmission to the owner. Because the obligatory one-year correction period between the owner and the GC, as well as other extended-time warranties, begins from the date of substantial completion of the project, the substantial completion date is an important project closeout event. That is why the GC is allowed a brief time interval to complete the work fully after the successful substantial completion inspection. A successful substantial completion inspection results in the GC receiving the certificate of substantial completion from the architect. An important part of this certificate is the date of substantial completion, which implies that the GC is no longer liable for the maintenance (cleaning and upkeep), utility costs, insurance, and security of the project. These responsibilities and liabilities are transferred to the owner.

### **2.7.15 Final Completion Inspection**

After the GC carries out all the corrective work identified during the substantial completion inspection and so informs the consultant, the architect (with the assistance of the consultants) carries out the final inspection of the project. If the final inspection passes, certification for final payment is issued by the consultant, which entitles the GC to receive the final payment from the owner. Before the certification for final completion is executed by the consultant, and finally by the owner, the owner receives the record documents, keys and key schedule, equipment manuals, and other specified necessities. Additionally, the owner receives all legal documentation to indicate that the GC will be responsible for claims made by any subcontractor, manufacturer, or other party with respect to the project.

### **2.7.16 Record Documents (As-Built Documents)**

As previously stated, minor design changes are often made during the construction of a project. These changes must be recorded for the benefit of the owner should the owner wish to alter or expand the building in the future. Therefore, after the building has been completed, the GC is required to provide a set of record drawings (previously known as *as-built drawings*). These drawings reflect the changes that were made during the course of construction by the GC. In addition to record drawings, record specifications, as well as a set of approved shop drawings, are usually required to complete the record document package delivered to the owner.

## **2.8 Challenges Facing Construction Project Delivery**

According to Kissi et al. (2018) it was observed that, although every project, whether construction or other non-infrastructure projects come with their own peculiar challenges, those in the construction industry are quite similar and repetitive. One would think that construction projects ought to be easier with experience, however, these flaws continue to occur over and over again especially at the local government level. Many including technical staff of the Public Works Department (PWDs) have cited various reasons and challenges for the inability of projects under the PWDs to be executed within cost to the right quality and most importantly without delay; It was identified in their study that; the following were the challenges facing project delivery:

### **2.8.1 Weather and Other Environmental Challenges**

Weather and other environmental challenges was ranked first as the extremely important cause of delay by respondents. Weather and its attendant environmental challenges act as a great deal of a challenge to project delivery. Ghana as a developing country is faced with a myriad of problems in project delivery. The meteorology department is ill equipped to predict weather events with a high degree of accuracy. Even with the most sophisticated technology available, forecasts are still subject to wide variability and questionable accuracy in the developed world. Therefore, this poses a challenge to Public Works Department (PWDs) in effective and efficient delivery on projects without time and cost overruns.

## **2. 8.2 Unrealistic Timelines for Project Delivery**

From the findings of Kissi et al. (2018) it was realized that unrealistic timelines for project was a huge challenge in project delivery amongst PWDs in Ghana. This the respondents attributed to other challenges such as inadequate designs, poor estimates etc. One of the interview participants argued that: *“Sometimes contractors are made to go to site without design drawings to begin with. This situation leads to projected project duration which were too low to begin with”*. This assertion is in line with Agyeman et al. (2016) who argue that within the Ghanaian road sector some contracts were signed without project designs. The designs were prepared after the contractor had moved to site. This situation resulted in design errors as engineers were under pressure to produce the designs. These errors were not detected earlier resulting in project delays and costly reworks.

## **2. 8.3 Influence of Processes by Political Heads**

Political influence is a major challenge to project delivery within PWDs. Political heads try to influence the processes by bringing in party-faithful for the award of contracts. This is a major challenge to project delivery as most of them are not competent to carry out these works. On the other hand, when there is a change of government projects are sometimes repackaged and given to the new contractors. In the worst-case scenario, projects are sometimes abandoned all together for new projects. According to Asante (2014) ~~In~~ many areas of business, success comes down to who you know rather than what you know. This is especially true of government contracts where political affiliations can make all the difference in securing a contract. Political pressures influence contract decisions such as awarding many contracts to a particular contractor at

a time; not based on competition and also awarding contracts without making budget allocations”

#### **2.8.4 Inadequate Logistics**

Logistic supply challenges in the government sectors remain a common phenomenon in all MMDAs. The general assertion has been that government’s work generally delays. This inadequacy has the tendency to affect project delivery, as any delay will influence the cost, time and quality. Effective logistics management is one of the major factors for productivity increase, as such the need for efficient project delivery (Abdulmohsen & Janaka, 2011). Logistics therefore should be planned and coordinated efficiently; however, its achievement in terms of the materials, tools and equipment is a difficult task (Jha & Iyer 2006). Furthermore, an improvement in logistics systems in the project delivery will lessen the cost sustained in low productivity and reduce unnecessary cost associated with transportation and handling of construction materials (Shakantu *et al.*, 2003). Inadequate logistics in the construction processes in various MMDAs have brought most construction projects to a standstill. Further indication in the industry shows that this trend will continue, as policy makers are reluctant in planning before any development project start. Public Procurement Act 663 of 2003 section 21 stipulates that all procurement entities including MMDAs, shall prepare a procurement plan to support its approved programmes including contract packages. However, according to the Public Procurement Authority (2010; 2011) 66 out of the 1000, and 32 out of 1,046 entities respectively submitted their plans, rendering inadequate logistics management

### **2.8.5 Inadequate Human Resource to Carry Out Supervision**

Human resource is an integral part of the construction processes, thus in every construction process the initiator, spear-header and driver is the human resource involved. Successful project delivery among other factors is dependent on the human resources managing the projects. Furthermore, effective human resource management enables workers to increase the level of productivity in achieving the company's aim and visions. In the construction industry, it remains a vital ingredient when it comes to project delivery as effective and efficient supervision rides on their shoulders. The success of a project invariably depends on the level of supervision of the project or the managerial skills of the project manager or the site supervisor (Zwikael, 2009). MMDAs' inability to supervise construction projects effectively has resulted in a lot of conflicts, variations and poor site co-ordination. These results stem from the inadequate knowledge base of professionals who are meant to be in-charge of the construction processes.

### **2.9 Construction Project Delivery for Cooperate Institution**

According to Vera Gavizon (2013) Building Construction Project Delivery for organisations or companies is a process of not just delivering on time, budget and quality as most individuals or personalities ought to achieve but in addition achieve in line with the companies or organisations strategy, satisfaction of all the stakeholders and ends with an evaluation of the project.

### **2.10 Integrated Project delivery (IPD)**

Zahra et al. (2017) postulates in his studies that, the construction industry is becoming more complex and specialized day by day, yet inappropriate function causes loss of



various resources in it (Lichtig, 2006). Therefore, selecting noble approaches for enhancing project implementation is very significant (Kent & Becerik-gerber, 2010). Integrated Project Delivery (IPD) is one of the new approaches of project implementation that has developed in some countries during recent years, to improve traditional implementation methods. This method provides realization of main objectives of the project through improving factors such as time and cost and creating conditions for open and efficient communications among project stakeholders, and creates win-win fields (Chan et al., 2004).

According to American Institute of Architects (AIA) IPD includes presence of all key factors of the project from outset in an integrated manner, and using their experiences and constructive cooperation in a multilateral contract to have a more successful project and participation in risk and reward for all stakeholders in project life cycle (AIA, 2007). One of the important factors in implementing the IPD method is good leadership, trust, respect, suitable work relations and high degree of team participation (El Asmar & Hanna, 2012 as cited by Zahra et al, 2017). Trust and respect are achieved over time and via mutual cooperation; in fact, trust is the pre-requisite of cooperation among stakeholders (Clark, 1997). Having mutual trust can successfully complete complex duties in a common environment (Wong & Cheung, 2004 as cited by Zahra et al, 2017

## CHAPTER THREE

### METHODOLOGY

#### 3.1. Introduction

This chapter embraces a detailed descriptive outline of how the entire study was carried out specifically focusing on the study design, study population, study areas, sample and sampling techniques, data collection methods, instruments, validity, reliability, procedure and finally data analysis techniques.

#### 3.2. Research Design

Cross-sectional survey was employed for the research design. This decision was informed given the fact that the study will take a snapshot of the participants or better still be studied once and thus not necessitating the researcher to make follow-ups (Shuttleworth, 2010). Typical, this design was used to identify the factors affecting the delivery of DACF building construction projects in Ghana, identify the effects of the factors affecting the delivery of DACF building construction projects in Ghana, develop measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana and identify the impact of the Guideline for the utilization of DACF on Building Construction Delivery. This design was imperative as it sought to compare many different variables and assemble a pool of opinions and practices at the same time which in turn allowed the researcher to obtain a detailed perspective on the factors affecting the delivery of building construction projects funded by District Assemblies' Common Fund (DACF). Mixed methods implying the application of both quantitative and qualitative methods were used for the approach. Quantitative approach was used to

obtain data in order to identify the impact of the Guideline for the utilization of DACF on Building Construction Delivery and the effects of the factors affecting the delivery of DACF building construction projects in Ghana; as well as develop measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana. This approach as simply put by (Patton, 1990) is concerned with measurement and numbers. Likewise, Qualitative method which involved an in-depth and detail study of respondents particularly with words and understanding (Marshall et al, 1999) was used to secure data on to identify the impact of the guideline for the utilisation of DACF on MMDA's building construction project delivery. As a two-staged design, the study used structured questionnaires for the first phase to access data in the quest to identify the factors affecting the delivery of DACF building construction projects in Ghana, identify the effects of the factors affecting the delivery of DACF building construction projects in Ghana and develop measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana. Semi – structured interview was used in the second phase to bring to light in attempting to identify the impact of the Guideline for the utilization of DACF on Building Construction Delivery.

### **3.3. Population**

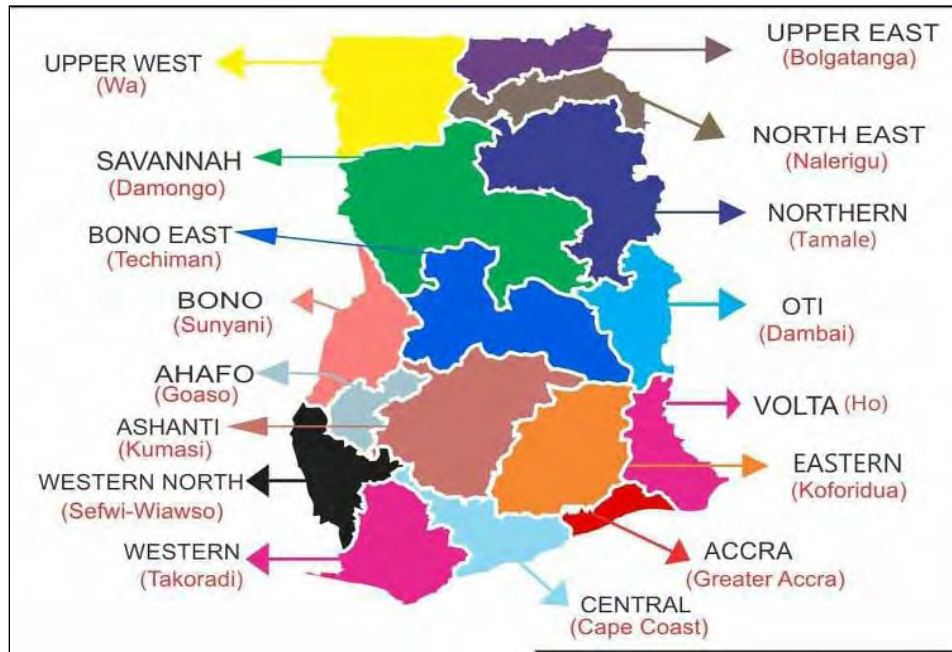
According to (Explorable.com, 2009), population describes a well-defined collection of individuals or objects known to have similar characteristics. To meet the demands and the success of this study, officials who are knowledgeable in the construction industry within the various MMDA's, MLGRD, NALAG and DACF secretariats were required as they were virtually involved in the various construction stages. District coordinating directors, finance officers, head of works, planning officers, budget officers, procurement officers,

internal auditors, administrators, general secretaries, programs coordinators and researchers for the last 5 years made the list of the target group specifically.

### **3.4. Study areas**

The study was carried out within three geographical areas namely Ashanti Region, Bono East Region and Greater Accra Region. These areas selected were due to their geographical location in Ghana and their cultural diverse ethnicity which can have an effect on Building Construction delivery as proposed by Kissi et al. (2018); where Bono East can fairly represent the Northern-belt, the Ashanti representing the Middle-belt and the Greater Accra representing the Southern-belt of Ghana. These will make it authentic to generalise the findings obtained to fairly represent Ghana as a whole. Moreover, there are huge presence of consultant, contractors and other keen actors (such as DACF Secretariat) concerned with the study; and this will make it much easier and economical in getting data from these professionals.

### 3.4.1 Map of Ghana



**Figure 3.1: Map of Ghana**

*Source: Krinsol Ecotours (2019)*

Ghana is located along the coastal belt of West Africa with a land size of approximately 238, 538 sq. km. From 1987, Ghana consisted of ten (10) administrative regions until a referendum was conducted in December 2018 for the creation of six (6) additional administrative regions. This referendum received massive support from the people and in February 2019, these newly created administrative regions received their respective constitutional instruments to become a fully-fledged autonomous administrative region. As a result, currently, Ghana is made up of sixteen (16) administrative regions as depicted in Figure 3.1 (Map of Ghana). The country shares common land borders with Togo on the east, La Cote D'Ivoire on the west, Burkina Faso to the north and in the south by the Gulf of Guinea. The overall boundary line of Ghana stretches to the extents of 2, 633 km and out of this 539 km consist of coastlines. Ghana as it stands presently is

believed to consist of approximately ninety-two (92) distinct ethnic groups spread across the length and breadth of the country and each with their unique and distinctive native and indigenous traditional, religious and cultural practices and norms. Such a diverse array of ethnicity are generally categorized into five mainstream ethnicities (Akan, Mole-Dagbani, Ga Adangbe, Guan and Gurma). Notable ethnic groups that come under these categories are Asante, Fanti, Wassa, Kwahu, Akyem, Bono, Nzema (Akan); Lolobi, Avatime, Efutu, Nchumuru, Larteh (Guan); Ewe, Kokomba, Baasari, Pilapila, Kyamba (Gurma); Builsa, Dagomba, Kusasi, Mamprusi, Sisala, Nanumba, Wala, Busanga (Mole-Dagbani); Ga, Adangbe, Krobo (Ga-Adangbe). The country attained its independence from Great Britain on 6th March, 1957 and in spite of the multiplicity of such diverse ethnicity and culture, the country has managed to maintain political stability, avoiding any major conflict and has been a strong multi-party democratic country since 1992.

#### **3.4.2 Map of Greater Accra Region**

Figure 3.2 below shows the Map of Greater Accra Region. It is the smallest area of Ghana's 16 regions, possessing a total land surface of 3,245 square kilometers or 1.4 percent of the aggregate land size of Ghana. It is the second most populated district, after the Ashanti Region, with a populace of 2,905,726 in 2000, representing 15.4 for every penny of Ghana's collective populace. The Greater Accra Region was a piece of the Eastern Region before 1982 and Greater Accra region was made from the Eastern Region in 1982 and right now the seat of government in Accra. It has been a hub of many government construction projects in the country at this period and has most of consultant, contractors who has or is working on DACF projects. In addition, policy makers like

DACF secretariat and host of other government agencies have its head office at that area, this deem it fit to consider it one of the area's for this study.



**Figure 3. 1: Map of Greater Accra Region**

Source: *Ghana Statistical Service (2010) Population and Housing Census, District Analytical Report-Greater Accra*

### 3.4.3 Map of Ashanti Region

Figure 3.3 shows the map of the Ashanti Region. It is located in the southern area of Ghana; and it is third largest of 16 administrative regions, occupying a total land surface of 24,389 km<sup>2</sup> (9,417 sq. mi) or 10.2 per cent of the total land area of Ghana. In terms of population, however, it is the most populated region with a population of 4,780,380 according to the 2010 census, accounting for 19.4% of Ghana's total population. The Ashanti Region is centrally located in the middle belt of Ghana. It lies between longitudes 0.15W and 2.25W, and latitudes 5.50N and 7.46N. The region shares boundaries with 5 of the 16 political regions, Bono East Region in the north, Eastern

region in the east, Central region in the South west with Ahafo Region and South West with Western Region.

This region has the highest number of MMDA's and the second most developed region in Ghana with host of experienced construction professionals and its keen geographical location (representing the Middle belt of Ghana), makes it deem to be considered in the study.



**Figure 3.1: Map of Ashanti Region**

Source: *Ghana Statistical Service (2010) Population and Housing Census, District Analytical Report-Ashanti Region*

#### **3.4.4 Map of Bono East Region**

Figure 3.4 shows the map of Bono East Region. It is a new region carved out of the old Brong Ahafo Region of Ghana. It shares borders on the north with the Northern region, on the west by the Bono West region, on the south by the Ashanti region and on the east by the Volta Lake. The Bono East Region of Ghana contains 11 districts and has Techiman as its capital. It has a population of 1,179,649 with total land area of 22,220 km<sup>2</sup>. This region has limited development and the presence of consultants and



Contractors as compared to Greater Accra and Ashanti Region; but it is a keen region with fast development which fairly represents the Northern belt. So as to keep a balance and not be biased in the selection of areas and to get Northern belt inputs in the study, it is deemed appropriate to consider this region.



**Figure 3.1: Map of Bono East Region**

Source: Citinewsroom.com (2019)

### **3.5. Sampling Technique and Sample Size**

According to (Trochim, 2004) sampling technique is the process whereby a researcher chooses his sample. Depending on the differences in the accessibility of the sample frame the study adopted both probability and non-probability sampling technique. These techniques were used to sample the agencies together with their corresponding personnel associated with the MMDA's, DACF secretariat, National Association of Local Authorities of Ghana (NALAG) and the Ministry of Local Government and Rural Development (MLGRD). Simple random sampling technique which is a probability sampling technique was used to select the MMDA's from the study areas. Purposive

sampling technique, a non- probability sampling technique was similarly used to select the DACF secretariat, National Association of Local Authorities of Ghana (NALAG) and the Ministry of Local Government as they all existed once in the country. This technique equally was used to select the respective respondents from the MMDA's, DACF secretariat, National Association of Local Authorities of Ghana (NALAG) and the Ministry of Local Government which included the district coordinating directors, finance officers, head of works, planning officers, budget officers, procurement officers, internal auditors, administrators, general secretaries, programs coordinators, researchers, contractors and consultants.

In determining the sample size for the MMDA's, Kish (1965) in Singh et al (2014) sample formula was used to determine the total number to be used for the study from the study areas. There are 16 regions in Ghana and out of the 16 regions, Ashanti Region have 43 MMDA's, Greater Accra have 26 MMDA's and Bono East have 11 MMDA's. This constituted 80 MMDA's in all.

The following denotes the Kish's Formula

$$n = \frac{n^1}{\left(1 + \frac{n^1}{N}\right)}$$

Where  $n$  = the required sample size

$$n^1 = S^2 / V^2$$

$N$  = Total number of MMDA's in the study population

$V$  = The standard of Sample Distribution = 0.05

$S$  = the Maximum Standard deviation of the population

Total error = 0.1 at confidence level of 95%

$$S^2 = P(1 - P) = 0.5 = 0.5(1 - 0.5) = 0.25$$

$P$  = the proportion of the population elements that belong to the defined region

$$\text{if } n^1 = S^2 / V^2$$

If  $N = 80$  (Total MMDA's in the study population), then

$$n = \frac{100}{(1+100/80)}$$

$$n = 44.4 \approx 44 \text{ MMDA's.}$$

Therefore, the sample size for the MMDA's for this study was **44**. These 44 MMDA's, sampled out from a population of 80 MMDA's were randomly selected. Simple random sampling is where each member of population is equally likely to be chosen as part of the sample. It has been stated that –the logic behind simple random sampling is that it removes bias from the selection procedure and should result in representative samples (Research Methodology.net, 2019).

As indicated earlier, purposive sampling technique was used to select officials from the sampled MMDA's as well as the DACF secretariat, National Association of Local Authorities of Ghana (NALAG) and the Ministry of Local Government from the sampling frame of the study areas. The technique was used for this class since each participant was an expert with much experience and exposed in their respective fields (Saunders et al, 2012). Purposive sampling is a sampling technique in which the researcher relies on his or her own judgment when choosing members of population to participate in a study (Black, 2010). Six (6) main offices at the MMDA's formerly, were directly linked to project delivery related issues which invariably estimated the number of officials each from the 44 sampled MMDA's to be 6. These were used for the study since information gathered assumed that they were the experts in the Building Construction

Project delivery at the MMDA's. In totality, 264 officials from the MMDA's were obtained. These comprised; District Coordinating Directors (DCD's), District Finance Officers (DFO's), District Head of Works (DHW's), District Planning Officers (DPO's), District Budget Analysts (DBA's), and District Procurement Officers (PO's).

In projecting the sample size for the Ministry of Local Government, purposive sampling technique was employed. 2 officers from 3 departments: Procurement Unit (PU), Internal Audit Unit (IAU) and Project Planning, Budgeting, Monitoring and Evaluation Unit (PPDME) were sampled. This gave a total of 6 officials earmarked for the study. Adapting the same process, 2 officers from 5 departments at the DACF Secretariat; namely Internal Audit, Finance, Operations and Research, Works, and Administration were sampled purposively. 10 officials were obtained in all. Similarly, 4 officers, with 2 each from Administration and Research unit of National Association of local Authorities of Ghana (NALAG) officials also, were purposely sampled. Correspondingly, 2 respondent each from 3 consultancy firm with MLGRD were sampled. This produced a total of 6 participants for the study. A contractor each was considered from the 44 sampled MMDA's and obviously amounted to 44 in number.

In effect, the total sample size for the study was 334 drawn from 6 agencies, namely MMDA's, Ministry of Local Government and Rural Development (MLGRD), DACF secretariat, NALAG, Consultants and Contractors were considered for the study.

### **3.6. Data Collection Instruments**

#### **3.6.1 Questionnaire**

Questionnaire was used to collect data from respondents on the factors affecting the delivery of DACF building construction projects in Ghana, the effects of these factors on

the delivery of DACF building construction projects in Ghana and also to adopt measures to improve the factors affecting the delivery of DACF building construction projects in Ghana. The questionnaire development was supported by literature and was classified under four main broad headings. The first part fell on the demographic characteristics of the respondents. The second part was based on the factors affecting the delivery of DACF building construction projects in Ghana with the third on identifying the effects of these factors on the delivery of DACF building construction projects in Ghana. The fourth stage included the measures to improve the factors affecting the delivery of DACF building construction projects in Ghana. The questions were closed-ended items and self-administered to ensure they are easily filled by participants. Subsequently, the last part provided open ended questions for respondents to list recommendations towards the effective delivery of DACF building construction projects in Ghana, if any. This instrument was preferable on the merit that the research objectives are quantitative in nature and thus, recommend the use of this instrument coupled with the cost and the number of respondents (Kothari, 2004). Additionally, this instrument was chosen because it kept the respondents on the subject, provide the easiest means of reaching them and obtain the desired information in the limited time available. The items were further subjected to a five-point Likert Scale rating for participants to respond. On the factors affecting the delivery of DACF building construction projects in Ghana, respondents were asked to rate the variables whether they are strongly affected (5), affected (4), neutral (3), unaffected (2) and strongly unaffected (1). Also, on measures to improve the factors affecting the delivery of DACF building construction projects and the adverse effects of these factors on the delivery of DACF building construction projects in

Ghana, the variables for both objectives were rated as strongly agree (5), agree (4), neutral (3), disagree (2) and strongly disagree (1). A Likert scale is a set of statements (items) offered for a real or hypothetical situation under study (Joshi et al., 2015). Participants were asked to show their level of agreement (from strongly disagree to strongly agree) with the given statement (items) on a metric scale. The scale was used to understand about the opinions/perceptions of participants related with single latent variable (phenomenon of interest) (Joshi et al, 2015). Semi- structured interview was employed to obtain information on identifying the impact of the Guideline for the utilization of DACF on Building Construction Delivery.

### **3.6.2 Interview**

Poised with the edge to substantiate the impact effected with the guideline for the utilization of DACF on Building Construction Delivery, qualitative content analysis was employed to analyse the semi- structured interviews conducted on respondents. Content analysis is a research method for subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns (Hsieh and Shannon, 2005). Same, a semi- structured interview is described as a dual interview which combines both components of structured and unstructured interview and affords the researcher the luxury to use open-ended and closed- ended questions to clarify and/or further expand certain issues (Connaway et al., 2010). This was paramount as it aided the researcher in collecting detailed information and granted him control over the flow of the process with the chance to clarify certain issues (Connaway et al., 2010). As proposed by Mayring (2000), there exist two different techniques for qualitative content analysis; inductive and deductive approaches. According to Chinn and Kramer (1999)

inductive data moves from the specific to the general, so that particular instances are observed and then combined into a larger whole or general statement. On the other hand, deductive approach as contended by Burns and Grove (2005) is dependent on an earlier theory or model and therefore moves from the general to the specific. Similarly, in the inductive approach, codes, categories or themes are directly drawn from the data, whereas the deductive approach starts with preconceived codes or categories derived from prior relevant theory, research, or literature (Cavanagh, 1997; Kondracki, Wellman, and Amundson, 2002) in (Elo and Kyngäs, 2007). Based on the nature of the study, any of the approaches is functional (Elo and Kyngäs, 2007). Relatively, the inductive process was adopted for this analysis as there was no previous knowledge on this subject or if any, it stood fragmented (Lauri and Kyngas 2005). Interestingly, Elo and Kyngäs, (2007) revealed that content analysis works perfectly with quantitative data. Respectively, a quantitative summary of the key features in the data was presented.

### **3.6. 3 Inductive process of content analysis**

Mayring (2000) in using this approach for data analysis broadly classified the processes under four main core steps; (1) Selecting the unit of analysis (2) creating categories (3) establishing themes and (4) interpretation of results (Fig.2). Explicitly, he defined these steps as;

Selecting the unit of analysis, being the initial step, involved deciding which data will be analyzed by focusing on a selected aspect of data depending on the research question after thoroughly reading and re-reading through the transcribed content from the interview. This is followed by creating categories which he explained as a means to compress a large number of texts into fewer content-related categories. Inclined to this

assertion, Weber, (1990) added that a category refers to items with similar meaning and connotations. Next came the establishment of themes which he described as a way to link the underlying meanings together developed in the categories. Subjective in nature, coding in qualitative content analysis might slightly differ among researchers (Elo and Kyngäs, 2007). These themes evidently formed the basis for interpreting and analyzing the results which they explained as the concluding part. Here, the results of the analysis are reported as both a broad quantitative summary of the themes and a more descriptive qualitative summary of the key findings.

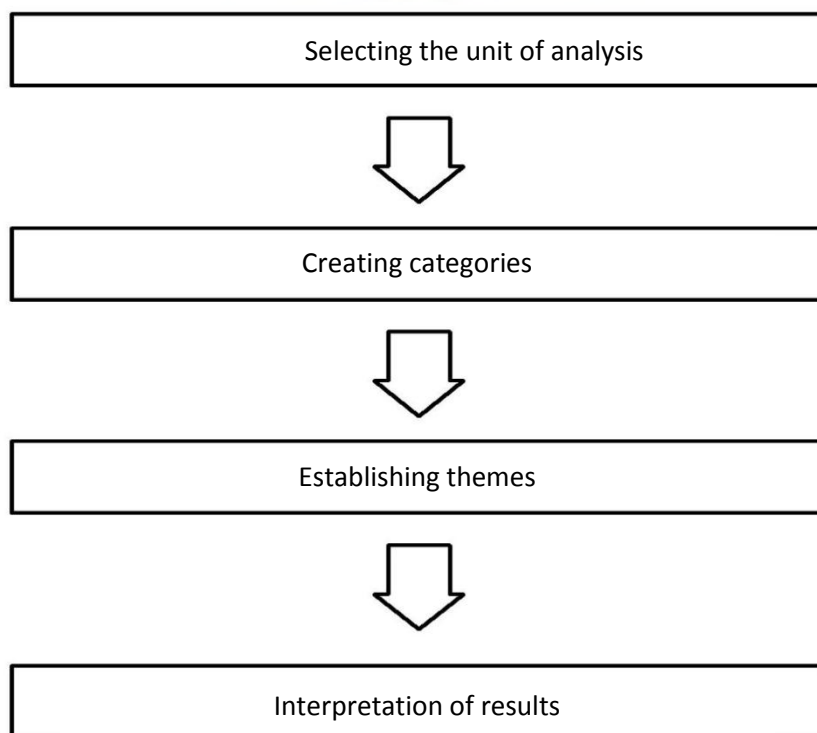


Figure 3.5. Flow Chart for Inductive process Content Analysis (Author’s Construct, 2020)

### 3.7. Validation of instrument

According to Frisby et al. (2014) Validity is the extent to which an instrument accurately measures what is supposed to measure (Frisby *et al.*, 2014). To ensure the accuracy of



information, the questionnaire was given to the supervisor whose recommendation upon thorough scrutiny was used to formulate the instrument that had the ability to obtain the expected relevant data. After the design, a pilot study was conducted among experts in the various Metropolitan, Municipal and District Assemblies. They were asked to assess the comprehensiveness of all the items in the questionnaire for clarity and appropriateness on the factors affecting the delivery of building construction projects funded by District Assemblies common fund (DACF). The experts were allowed to exclude unimportant factors and add factors they perceive necessary. The questionnaire was then subjected to rating and the content validity index (CVI) computed using the formula;

Average of CVI =  $\frac{\text{number of items rated valid}}{\text{all items in questionnaire}}$ . The recommended validity of 0.7 (Amin, 2005) obtained rendered the questionnaire valid for data collection. Content validity refers to how accurately an assessment or measurement tool taps into the various aspects of the specific construct in question (Shuttleworth, 2009).

### **3.8. Reliability of the Test**

The questionnaire was pre-tested on nine selected respondents who shared the same characteristics as the actual group to ensure reliability. This was done to ensure consistency and dependency of the research instrument and its ability to tap data that will answer the objectives of the study. Next, the Likert scales for obtaining the raw data from the instrument were subjected to a reliability analysis from which Cronbach's coefficient alpha was computed. Securing a value of 0.941 attested to the fact the items met the recommended reliability standard. According to Hair et al. (2010), the acceptable lower

limit for the Cronbach's alpha is usually considered to be 0.7, when reached will make the questionnaire reliable for data collection.

### **3.9. Data collection procedure**

Upon formal introduction and familiarization with the selected areas of study through a visit, an introductory letter was obtained from the Head of Department (HOD) of Construction and Wood Technology Education, University of Education, Winneba-Kumasi campus. After, permission was sought from the appropriate quarters from the selected areas of study to collect data from their respective companies. The questionnaire was self-administered to the District coordinating directors, finance officers, head of works, planning officers, budget officers, procurement officers, internal auditors, administrators, general secretaries, programs coordinators and researchers to seek the necessary information on the factors affecting the delivery of DACF building construction projects in Ghana, the effects of the factors affecting the delivery of DACF building construction projects in Ghana and measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana. and the impact of the Guideline for the utilization of DACF on Building Construction Delivery. With respect to the interview, fifteen (15) of the professionals were engaged. The process took place in the office of each interviewee with a time span of between 30 minutes to 1 hour. In ensuring as well as increasing the reliability of the responses, all the interviews were recorded. To reach the purpose of the interview and in turn avoid any ethical considerations, interviewees were previewed on the need of the research through a list of questions (Appendix 2) and that the interview were to be recorded.

### **3.10. Data analysis procedure**

The quantitative data collected from the field through the use of structured closed ended items was analysed on Statistical Package for Social Sciences (SPSS) software and the qualitative aspect obtained through audio recording was done through content analyses – analysing and interpreting verbal data or behavioural data (Thomas, 2006). The reliability of the questionnaire that was used in the survey was determined using Cronbach's Coefficient Alpha.

#### **3.10.1. Research Question One: Identify the factors affecting the delivery of DACF building construction projects in Ghana.**

Questionnaire was used to obtain data for this objective. The items on the questionnaire was rated on a five-point Likert scale from strongly affected, affected, neutral, unaffected and strongly unaffected. This was further analysed using factor analysis and the corresponding conclusions drawn for this objective.

#### **3.10.2. Research Question Two: Identify the effects of the factors affecting the delivery of DACF building construction projects in Ghana.**

Likewise, a questionnaire with items rated with the Likert scale scheme and corroborated with observation was utilized under this objective. Descriptive statistics was used to analyse this objective and ranked subsequently with the appropriate justifications achieved. Kendall's Coefficient of Concordance was correspondently used to establish a degree of agreement among respondents on the variables. The ratings on the items were from strongly agree, agree, neutral, disagree and strongly disagree.

**3.10.3. Research Objective Three: Develop measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana.**

On the measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana, questionnaire with the same degree of rating with the Likert scale from strongly agree, agree, neutral, disagree and strongly disagree will be used. One sample T – test was applied to rank the variables as Spearman’s correlation was equally engaged to determine the relationship that existed between the independent variables to arrive at the appropriate conclusions for the objective.

**3.10.4. Research question four: To identify the impact of the Guideline for the utilization of DACF on Building Construction Delivery.**

The information analysed was dependent on the responses extracted from respondents. Through the use of interview, this feat was achieved. Qualitative content analysis thus was employed to derive the requisite conclusion for this objective.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### 4.1 Introduction

This chapter reports the analysis of data obtained for the study in accordance with the corresponding objectives prescribed for this survey accordingly. Consistent with the objectives in its organization, the demographic characteristics of respondents was presented in the first part. Results on the need to identify the factors affecting the delivery of DACF building construction projects in Ghana was captured in part two. Next was identifying the effects of the factors affecting the delivery of DACF building construction projects in Ghana which also constituted the third part. Following this was developing measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana which was presented in the fourth part. The Fifth part constitutes the results obtained from the impacts of the Guideline for the utilisation of DACF on Building Construction Project Delivery.

The data analysis is in two sections; which are quantitative and qualitative analysis. The quantitative analysis adopted the use of factor analysis, descriptive analysis and one sample t-test. The qualitative used content analysis on the respective variables. Pertaining to the former, 334 questionnaires were self-administered to three regions; Greater Accra, Ashanti and Bono East Region for a period of over three months. 173 questionnaires representing 52% of the response rate was appropriately collected and used for the study. According to Mugenda and Mugenda (2003) in Nii and Danso (2018) and affirmed in Yehuda and Holton (2008), this rate is acceptable as a response rate of 50% is adequate for a study. The remaining were upon collection were partially responded to, or in some

cases not responded to at all. These were rendered invalid. Out of this number (173), the participants drawn were District Coordinating Directors (26), Finance officers (26), Head of Works (24), Planning Officers (22), Budget Officers (26), Procurement officers (22), internal Auditors (3), Administrators (14), General Secretaries (1), Programs Coordinators (5) and Researchers (4) as shown in Table 4.1.

## 4.2 Demographic Characteristics

The outline of respondents' demographics expressed descriptively is presented in table 4.1. Featuring on the table includes respondents' academic qualification, agency, status in agency, work experience and professional body respectively.

**Table 4.1: Demographic characteristics of respondents**

<b>Characteristics</b>	<b>Category/Option</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Academic Qualification</b>	BSc. Honours	79	45.7
	P.G. Diploma	10	5.8
	HND	33	19.1
	MSc. /MEng.	28	16.2
	MPhil.	7	4.0
	PhD.	16	9.2
	<b>Total</b>		173
<b>Agency</b>	MMDA	129	74.6
	Ministry of Local Government and Rural Development (MLGRD)	18	10.4
	District Assemblies Common Fund (DACF) Secretariat	4	2.3
	NALAG	4	2.3
	Contractor	12	6.9
	Consultant	6	3.5

	<b>Total</b>	173	100
<b>Status in Agency</b>	District Coordinating Director	26	15.0
	Finance officer	26	15.0
	Head of Works	24	13.9
	Planning Officer	22	12.7
	Budget Officer	26	15.0
	Procurement officer	22	12.7
	internal Auditor	3	1.7
	Administrator	14	8.1
	General Secretary	1	0.7
	Programs Coordinator	5	2.9
	Researcher	4	2.3
	<b>Total</b>	173	100
<b>Work Experience</b>	5 years or less	29	16.8
	6 - 10 years	102	59.0
	11 - 15 years	29	16.8
	Above 15 years	13	7.5
	<b>Total</b>	173	100
<b>Professional Body</b>	Yes	93	53.8
	No	80	46.2
	<b>Total</b>	173	100

The demographic characteristics of interest relative to this study reported on the academic qualification, agency resided, status in agency, work experience and professional body. The outcome of the analysis is shown in Table 4.1. Occurring first under academic qualification saw the highest number of respondents making almost half of the total number with BSc. Honors (45.7%). This was followed by bearers of HND (19.1%), then MSc. /MEng. (16.3%), PhD (9.2%), P.G. Diploma (5.8%) and MPhil. (4.0%) respectively in order of magnitude. With regards to the agencies which the respondents belonged,

more than half of the respondents belonged to MMDA (74.6%). The next agency after this and recording 10.4% was the Ministry of Local Government and Rural Development (MLGRD). Contractors came through with 6.9% as consultants registered 3.5%. Both the District Assemblies Common Fund (DACF) Secretariat and NALAG settled for the same spot each at 2.3%. Further, representation of respondent's status in their corresponding agencies had the District Coordinating Directors, Budget officers and Finance officers achieving the top spot with each producing 15.0%. Likewise, they were followed by Head of Works (13.9%), Procurement officers and Planning Officers both with (12.7%), Administrators (8.1%), Programs Coordinator (2.9%), Researchers (2.3%). Internal Auditor (1.7%) and General Secretary (0.7%) eventually. In the case of work experience, respondents, over half of them (59.0%) had worked between 6 – 10 years. Subsequently, those with 5 years or less and 11 – 15 years both had 16.8% with the least (7.5%) going for those with above 15 years' experience. Moreover, 53.8% of respondents belonged to a professional body with 46.2% not belonging to any.

#### **4.3 Identifying the factors affecting the delivery of DACF building construction projects in Ghana.**

In the quest to identify the factors affecting the delivery of DACF building construction projects in Ghana, respondent's opinions were subjected to factors analysis to appropriately categorize the components into desired dimensions as represented in Table 4.2. Five main factors were selected in the entire process. Various options were explored in arriving at the factors. First, although the eigenvalue with its thumb rule of 1 or greater made out seven factors, the scree plot shown in Figure 4.1, upon close examination and review pointed out to five factors. Again, basing on the 5% of variation explained, five



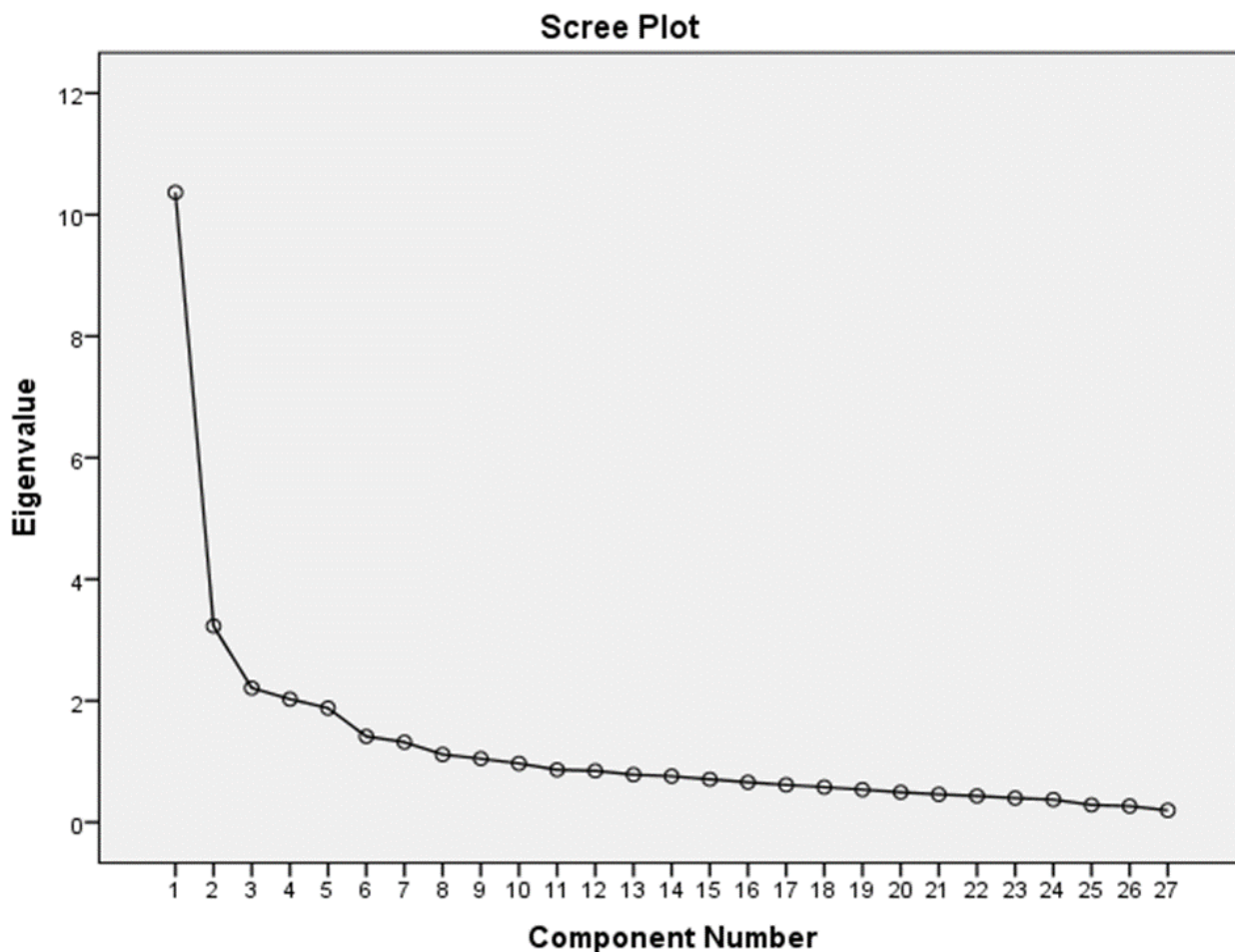
factors clearly were able to make this cut cumulating to about 57%. Moreover, the five factors had theoretical considerations thus making them interpretable. Two factors less of these requirements were discarded eventually. Regarding the variance explained, the respective individual percentages of 29.77%, 9.27%, 6.34%, 5.82% and 5.39% accordingly were assigned to component 1, component 2, component 3, component 4 and component 5 (Table 4.2).

**Table 4.1: Total Variance explained**

Component	Extraction Sums of Squared			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative	Total	% of Variance	Cumulative %
1	10.367	29.767	29.767	5.553	15.944	15.944
2	3.229	9.271	39.039	3.145	9.030	24.974
3	2.209	6.343	45.382	3.490	10.021	34.995
4	2.027	5.819	51.201	2.763	7.934	42.929
5	1.879	5.394	56.595	2.929	8.409	51.337

Extraction Method: Principal Component Analysis





**Figure 4.1: Scree Plot**

Comprehensively, the factor loadings with its corresponding components obtained using the Varimax method of rotation in identifying the factors affecting the delivery of DACF building construction projects in Ghana is illustrated in Table 4.3.

**Table 4.1: Factors affecting the delivery of DACF Building Construction Projects in Ghana.**

Causes	Component				
	1	2	3	4	5
Contractor's Financial Difficulties	<b>0.747</b>				
Poor site management	<b>0.731</b>				
Inefficient contractor's selection method and procedure	<b>0.699</b>				
Poor Communication	<b>0.620</b>				
Skill labour Shortage	<b>0.578</b>				
Inapplicable Guidance for the Utilization of DACF		<b>0.787</b>			
Inadequate DACF Allocation for MMDA's projects		<b>0.629</b>			
Delay in disbursement of DACF Fund		<b>0.621</b>			
Excessive Bureaucratic Conditions		<b>0.610</b>			
Poor project planning		<b>0.537</b>			
Equipment and tool Shortage			<b>0.634</b>		
Inadequate logistics			<b>0.618</b>		
Material Shortage			<b>0.638</b>		
Construction Slipups and Defective Works				<b>0.528</b>	
Weather and other Environmental Challenges				<b>0.594</b>	
Design Changes and Variation				<b>0.430</b>	
Inadequate human resource to carry out supervision					<b>0.594</b>
Unrealistic time line for project delivery					<b>0.548</b>
Lack of coordination and cooperation of stakeholders					<b>0.537</b>

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser

Five factors were loaded onto component one and two with the remaining components each having three consequently. Loading onto component one were the factors; Contractor's Financial Difficulties (0.747), Poor site management (0.731), Inefficient contractor's selection method and procedure (0.699), Poor Communication (0.620) and Skill labour Shortage (0.578). This was labelled **Contractor Related factors** and explained 15.944% of the variance. Next was component two also with five factors with factor loadings consisting; Inapplicable Guidance for the Utilization of DACF (0.787),

Inadequate DACF Allocation for MMDA's projects (0.629), Delay in disbursement of DACF Fund (0.621), Excessive Bureaucratic Conditions (0.610), Poor project planning (0.537). This component was tagged **Project Funding Related factors** also explaining 9.030% of the variance. Component three came following with three factors constituting; Equipment and tool Shortage (0.634), Inadequate logistics (0.618) and Material Shortage (0.638). This was labeled **Supply Chain Related factors** equally explaining 10.021% of the variance. Similarly, component four had three factors which included; Construction Slipups and Defective Works (0.528), Weather and other Environmental Challenges (0.594) and Design Changes and Variation (0.430) as it was named **Site Related factors** and explained 7.934% of the variance. Loaded under the fifth component were the factors; Inadequate human resource to carry out supervision (0.594), Unrealistic time line for project delivery (0.548) and Lack of coordination and cooperation of stakeholders (0.537) and was subsequently marked as **Client Related factors** and explained 8.409% of the variance.

#### **4.3.1 Component one: contractor related factors**

Contractor related factors under this principal component explained 29.767% of the total variance with five factors. These included, Financial Difficulties, Poor site management, inefficient contractor's selection method and procedure, Poor Communication and Skill labour Shortage. Gamila (2017) posits that poor communication among construction parties is considered one of the leading factors to cause an impact on the main project components such as cost, time and quality of construction projects. Buttrussing this assertion, Nii and Danso (2018) identified excessive cost and time overrun, poor quality standard work, imprecise assessments due to lack of information, criteria being very

complex and difficult to apply in practice among others as the challenges to the contractor selection criteria in Ghanaian construction industry. Many now believe that the public sector system of bid evaluation, which concentrate much on bid price, is one of the major challenges of project delivery problems (Holt et al., 1994; Ellis & Herbsman 1991; Bower 1989) in (Kissi et al, 2018). Affirming this claim, they explain that contractors, when faced with shortage of work are more likely to submit low bids simply to stay in business in the short term and with the hope of somehow raising additional income through 'claims' or cutting costs to compensate for their low bids. The outcomes from the study reach a decision with Gamila (2017), Nii and Danso (2018) and Kissi et al. (2018) and comes to bear that contractor related issues of DACF building construction projects at MMDA's is subdued and this affects the effective delivery of building construction project funded by DACF at the local level. This is imperious for the managers of the economy to put the DACF high on the precedence and provide the requisite measures for the effective delivery of construction projects in the country.

#### **4.3.2 Component two: project funding related factors**

The principal component accounted for 9.271 % of the total variance with five factors loading onto it. These included; inapplicable guidance for the utilization of DACF, inadequate DACF allocation for MMDA's projects, delay in disbursement of DACF Fund, excessive bureaucratic conditions and poor project planning. According to Amponsah (2018), Simon (2018) and Modern Ghana (2018) delay in disbursement as well as untimely release of funds nested from inapplicable guidance for the utilization of DACF tend to pose a major challenge to the operations of the fund at the local level. Khalid and Farah (2019) in consonance with this submission also argue that poor planning and management of the construction projects may lead to several negative

effects on the duration and completion of projects. This claim is linked to Igwe et al (2018), Ahadzie and Amoah-Mensah (2010) who equally advocate that poor project management practices have in the recent past contributed to the abandonment of mass house building project as well as poor project planning and implementation culture which indicates an anti-thesis to development. In spite of these, Ahadzie and Amoah-Mensah (2010) proposed that contractors should prepare and adhere to realistic programme schedule. The findings of the study in consistent with the observed affirmation by Igwe et al. (2018) and Ahadzie and Amoah-Mensah (2010) postulate that DACF building construction project planning and funding procedures is not serving the purpose expected at the local level, which in effect hindering the effective delivery of building construction projects required. This agitation ponders the need to review those procedures to satisfy the local needs at the MMDA's in Ghana.

#### **4.3.3 Component three: supply chain related factors**

Principal component three had three factors loading onto it and defined 6.343% of the total variance. These factors were; equipment and tool shortage, inadequate logistics and material shortage. Another crippling effect on the efficacy in delivery of DACF on building construction projects extent from the availability to the adequacy of materials for the intended projects. Kissi et al. (2018) established that inadequate logistics in the construction processes in various MMDAs have brought most construction projects to a standstill. They reiterated further that when materials ordered is not supplied to the right quantity, there is a clear case of material shortage and hence it effects on a successful project delivery. Danso (2014) affirms this assertion that, plant and equipment shortage as result of it high cost leads to poor work delivery in the Ghanaian construction industry. In the plight of these, it has become necessary for the managers of the economy to make

it easy to access materials, equipment and logistics needed for the construction activities since the findings of the study concords with the reverted assertions.

#### **4.3.4 Component four: site related factors**

The principal component described 5.819 % of the total variance with three factors loading onto it. These included; construction slipups and defective works, weather and other environmental challenges and design changes and variation. In this regard, Kissi et al. (2018) indicated that lack of precision in measurement from plans and specifications lead to mistakes in construction and extension of the project duration. They advanced their position further by adding that the weather and its attendant environmental challenges act as a great deal of a challenge to project delivery. However, in consonant with the study, it is essential for Works Department of the various MMDA's to intensify their work supervision as materials, equipment and logistics becomes available, since notwithstanding the satisfaction all aspect of building construction project delivery indicators, poor site management will render it ineffective.

#### **4.3.5 Component five: Client Related factors**

Then principal component clearly explained 5.394 % of the total variance with three factors loading onto it. These were, inadequate human resource to carry out supervision, unrealistic time line for project delivery and lack of coordination and cooperation of stakeholders. Danso (2014) reinforced this assertion indicating that poor workmanship of construction project in the construction industry is as a result of poor supervision. In their suggestion, Oseghale et al. (2015) were emphatic that construction firms pay extra money for labour, so as delay in schedule in their construction programmes as a result of skilled labour shortage. Consolidating this idea were Kissi et al. (2018) who accentuated that

unrealistic timelines for project is a huge challenge in project delivery amongst PWDs in Ghana. Moreover, they argued further that lack of stakeholder's involvement in a project affect project delivery. This was consistent to Gavizon (2013) assertion that, it is easier to get to the objective of the project when all of the participants of the team are rowing in the same direction. Relatively, Modern Ghana (2018) suggested that projects that were planned in consultation with assembly members were more successful in contrast with those that were done in consultation with government's medium-term development plans (MTDPs). This assertions in-line with findings of the study demonstrates that management of DACF building construction project at MMDA's is not effective; but according to Yasuyuki- (2015) it was demonstrated that physical infrastructure development improves the long – term production and income levels of an economy in both the macro economy and endogenous growth. In regard with these, MMDA's should involve stakeholders throughout the life cycle of the project and adopt modern trends of project management techniques through seminars in order to plan their projects effectively.

**Table 4. 1: KMO and Bartlett's test**

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.856
Bartlett's Test of	Approx. Chi-Square	1917.019
Sphericity	Df	351
	Sig.	.000

A Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and a Bartlett's Test of Sphericity were carried out on the data to warrant the use of factor analysis (Table 4.4).

Recording a KMO value of 0.856, the Bartlett's test in turn gave high relationships



among the variables (Chi-square = 1917.019, df = 351,  $p < 0.000$ ) thus signifying the adequacy and suitability of applying this tool.

#### **4.4 Identifying the effects of the factors affecting the delivery of DACF building construction projects in Ghana.**

Descriptive statistics was used to rank in identifying the effects of the factors affecting the delivery of DACF building construction projects in Ghana. The outcome is presented in Table 4.5. The criteria employed in the ranking process projected mean values of three or greater ( $\geq 3.0$ ) as the degree of measure for the main key effects of the factors affecting the delivery of DACF building construction projects in Ghana. Therefore, any mean value below 3.0 is not considered a key factor.

**Table 4.1: Effects of factors affecting the delivery of DACF building construction projects in Ghana.**

<b>Effects</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rank</b>
Cost and time overrun	3.88	1.109	1
Poor quality Standard work	3.74	1.384	2
Unexploited completed project	3.70	1.202	3
Contractor bankruptcy or liquidation	3.64	1.248	4
Causes accident/disaster	3.52	1.184	5
Loss of workers and profit	3.47	1.301	6
Loss of stakeholders trust and confidence	3.40	1.104	7
Wastage of materials and resources	2.88	1.202	8
Dispute among Contractors and clients	2.81	1.178	9
Generate waste/scrap to harm the Environment	2.80	1.141	10
Project team isolation and conflict	2.77	1.084	11
Resource Shortages	2.77	1.090	12
Project overall failure	2.47	1.255	13

Obviously from Table 4.5, it was noted that there were considerable factors that affected the delivery of DACF building construction projects in Ghana. These factors were ranked

according to their levels of mean as indicated earlier. They included; cost and time overrun (3.88), Poor quality standard work (3.74), Unexploited completed project (3.70), Contractor bankruptcy or liquidation (3.64), Causes accident/disaster (3.52), Loss of workers and profit (3.47) and Loss of stakeholder's trust and confidence (3.40). These were the most ranked factors according to the data obtained from respondents for this study.

#### **4.4.1 Degree of Agreement among respondents in identifying the effects of the factors affecting the delivery of DACF building construction projects in Ghana.**

Appropriately, the seven key effects of factors that affected the delivery of DACF building construction projects in Ghana obtained descriptively were further analysed using the Kendall's Coefficient of Concordance ( $W$ ). The Kendall's coefficient of concordance ( $W$ ) is the measure of the degree of agreement among  $m$  (number of judges) of  $n$  (number of items) ranks (Shaibu et al., 2018). This tool allowed for determining the significant degree of agreement among the participants in rating the seven key effects independently. Here, participants acted as judges or raters and each variable represented an item being judged (Nyangwara and Datche 2015). Kendall's  $W$ , ranges between zero (no agreement) and one (complete agreement) (Engur et al., 2015). Thus, in ascertaining the veracity of agreement among participants on the seven key effects of the factors identified as affecting the delivery of DACF building construction projects in Ghana, Kendall's Coefficient of Concordance ( $W$ ) was obtained using the

formular;

$$W = \frac{12 \sum D^2}{m^2 (n)(n^2 - 1)} \quad (1)$$

Where;

$W$  represents the coefficient of concordance,  $D$  is the difference between the individual sum of ranks of the raters or judges and the average of the sum of ranks of the items,  $\sum D^2$  denotes the sum of the squares of the difference,  $m$  is the number of judges/respondents and  $n$  symbolizing the number of items/variables being rated (Legendre, 2010).

Interestingly, Kendall's Coefficient of Concordance ( $W$ ) only gives the degree of agreement among the ranks assigned by the different judges on the different variables (Legendre 2010). However, the hypothesis and significance of Kendall's  $W$  can further be tested using the F – test (Shaibu et al., 2018). This was presented as;

Null hypothesis ( $H_0$ ): There is no significant degree of agreement among participants.

Alternate hypothesis ( $H_a$ ): There is significant degree of agreement among participants.

The significance of Kendall's  $W$  was obtained from the F – statistic given by;

$$F = \frac{(m-1)W}{(1-W)} \quad (2)$$

Where;

$F$  means Fisher's test – statistic,  $m$  is the number of judges/respondents and  $W$ , Kendall's Coefficient of Concordance (Legendre 2010).

**Table 4.6: Degree of agreement of the effects of factors affecting the delivery of DACF building construction projects in Ghana.**

Field	W	Chi-square	Df.	Sig.	Decision
All key effects	0.076	59.225	6	0.000	Reject $H_0$

Significant at 0.05 with Kendall's Coefficient of Concordance ( $W$ ) value of 0.076, it is expedient to conclude that there exists a significant degree of agreement (Table 4.6).

Here, there is enough evidence to reject the null hypothesis and conversely accept the alternate hypothesis. In this effect, it can be said that there is significant degree of agreement among participants regarding the seven key effects of the factors identified as affecting the delivery of DACF building construction projects in Ghana.

#### **4.4.2 Cost and Time overrun**

Cost and time overrun effect pulled a mean value of 3.88; and was ranked first as the extreme effect of the factors affecting the delivery of DACF building construction projects in Ghana by respondents. Cost and time overrun effect act as a great deal of a challenge to delivery of DACF building construction projects in Ghana. Nii and Danso (2018) indicated that construction projects are subjected to excessive cost and time overrun as a result of the challenges to the contractor selection criteria in Ghanaian construction industry. With the same view point, Gamila and Rahman (2017); Laura Porreca (2017) attribute this deficiency to poor communication which incurs not only cost overruns but also time overruns and consequently project failure. Reiterating further, Edmonds and Miles (1984); Ofori (1989); Konadu-Agyemang (2001); in Ahadzie and Amoah Mensah (2010) asserted that project management inefficiencies in many instances have led to time and cost overruns of more than 100% in the implementation of numerous housing projects. Consequently, Danso and Antwi (2012) identified clients delay of payment certificates as the main factor causing cost and time overruns in telecom tower construction in Ghana. In-line with these deliberations, respondent indicated that cost and time overrun has been a dilemma in the MMDA's DACF construction project, where dozens of projects exceeds the time and budget line as result of poor cash flow syndrome of DACF.

#### **4.4.3 Poor Quality Standard work**

This variable had a mean value of 3.74 and was ranked second as one of the major effect that affects DACF building construction project at MMDA's. It has been noted that building construction project with poor quality standard work waste resources and create discomfort to end users. Danso (2014) corroborates this claim emphasizing that poor supervision of work and use of inferior or adulterated materials were identified as the major causes of poor workmanship in the construction industry. More so, MMDAs' inability to supervise construction projects effectively has resulted in a lot of conflicts, variations and poor site co-ordination (Kissi et al. 2018). Again Nii and Danso (2018) argue that selecting a contractor for construction project is a difficult decision to be taken by a client because it may lead to construction delivery problems or successful delivery of the project. The aforementioned deliberations in line with the response indicates that DACF project at the MMDA's suffers poor quality standard work as a result of lack of logistics and equipment for supervision. Furthermore, cutting corners to earn profit and also contractors constraining to complete the works as a result of the market inflation due to poor cash-flow constrain of DACF which always leads to delay in completion of works leads to poor quality standard work. Hence averting this challenge will curb the situation.

#### **4.4.4 Unexploited completed project**

Standing imperious and affecting the delivery of DACF building construction projects in Ghana is unexploited completed projects which had a mean value of 3.70, indicating a major effect to DCAF building construction project. Ansah (2011) hinted that delay payment leads to abandonment of projects resulting in possible delay which virtually renders the project not available at the time required. In harmony to this affirmation,

Ankukumah (2016) noted that projects are rejected by end-users/community as a result of poor inclusion of stakeholders in project delivery. In spite of these occurrences, stakeholder's involvement in the MMDA's project delivery is a challenge. This has resulted in abandonment of several public infrastructure projects. Delay of DACF building construction project is mostly caused either by financial liquidity or obstruction by stakeholders. With regards to this finding it is imperative to review DACF method of approach of project delivery at the MMDA's

#### **4.4.5 Contractor Bankruptcy or Liquidation**

Emanating under this umbrella of factors affecting the delivery of DACF building construction projects in Ghana is contractor bankruptcy or liquidation with a men value of 3.64. According to Ansah (2011), financial hardship for the construction companies and its impacts are sometimes so harsh that some companies have to close down. In consonance with this perspective, Ramachandra and Rotimi (2011) adds that delay and loss of payment is a serious problem in the construction industry of many countries. These affect the cash flow of contractors which is critical to meeting their financial obligations. Payment defaults by the principal leads to insolvency of contractors and in turn other parts of the project chain. In the same dimension, Mohd Badroldin et al. (2016) posit that late payment from the client has become a habit in the construction industry and this practice had caused many implications such as bankruptcy, the higher contract sum due to higher risk. Reflecting on the preceding's, postulate the need to review DACF fiscal management of building construction project at the local level (MMDA's) which is always confronted with difficulties hindering effective delivery as it is been pointed out by the findings.

#### **4.4.6 Causes Accident/Disaster**

Another key component with a mean value of 3.52 underlying the factors affecting the delivery of DACF building construction projects in Ghana, is its cause to accident/disaster. Ajasa (2012) indicated that, accidents emanate from shortcomings of management and site managers due to non-implementation of safety policies and lack of adequate supervision. Moreover, Kavya and Pradeep (2018) relates to this call stating that accidents are bound to happen when there are lacking organization arrangements, risky practices, and weak frames of mind of development workforce, poor administration responsibility, and deficient wellbeing information and preparing of laborers. Design errors, poor quality of materials and workmanship in similar manner equally contribute to building collapse (Oke, 2011). Putting these instances into perspective to the findings shows the seriousness of MMDA's building collapse, evidence from [newsghana.com](http://newsghana.com), 2019 where collapse school building at Dzorwulu a suburb of Accra killed 2 and injured 6. Collapse of DACF building construction is happening and it is causing disaster and waste of resources which can be used for other relevant issue in the economy. This and many shows how necessary to put in necessary measures to mitigate this situation.

#### **4.4.7 Loss of workers and profit**

Loss of workers and profit is another canker which claimed a mean value of 3.47, situates itself as another key threat affecting the delivery of DACF building construction projects in Ghana. No wonder Abdul Raman and Berani (2006) in Ansah (2011), lays the claim that delayed payment causes the contractor's loss of workers and profit. He continues by suggesting that contractors may not have sufficient funds to tide him over until such time as conflict is resolved, consequently lose workers. In compliance with this affirmation,

Oseghale et al (2015) indicated that construction firms were paying extra money for labour, and Schedule delay in their construction programmes as a result of skilled labour shortage. This assertion confirms together with the results demonstrate the seriousness of how DACF project is abandoned due to lack of financial liquidity. Efficient cash-flow is a major factor for the survival and success of the project. It is clear that, conflict is erupted when project financial obligations are not met as and when it is needed. This and many assertions render the need to review DACF system of construction project funding notwithstanding its effectiveness to other sector of the economy, since construction project is time bound and it is subjected to many contractual implications which its effect will emanate a canker to affect MMDA's building construction project delivery.

#### **4.4.8 Loss of stakeholder's trust and confidence**

Involved as one of the significant effects affecting the delivery of DACF building construction projects in Ghana is loss of stakeholders' trust and confidence, attaining a mean value of 3.40. Windsor (2018) explains explicitly that it is estimated that 1 in 3 projects fail due to poor stakeholder engagement. Stakeholders are critical to project success; failure to communicate regularly with stakeholders can undermine internal support for your project. Consequently, Gamila and Rahman (2017) suggests that low Level of satisfaction among construction parties affect poor delivery of construction project. In point of view from the discussion however affirms to the findings of the need for the inclusion of stakeholders in project delivery processes.



#### **4.5 Developing measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana.**

Variables under this subject were treated to a one sample T-test analysis (Table 4.7) to establish the difference in opinions of respondents aimed at developing measures pertinent to improve on the factors affecting the delivery of DACF building construction projects in Ghana. A controlled or a hypothesized mean of 3.0 was set a threshold value and the results ranked subsequently. The proceeding is further reinforced with an alpha level pegged at 0.05 and which concurrently had all the measures below this level ( $p < 0.000$ ). This indicated a statistical significance of the variables in its function to improve on the factors affecting the delivery of DACF building construction projects in Ghana.

Although all the twelve factors exceeded the mean value which suggested that all the measures are directed towards improving on the factors affecting the delivery of DACF building construction projects in Ghana, the top five ranked measures were regarded as the key measures for the study contrary to those below this range. The factors consisted; Provision of adequate budget before commencement of project (4.05), Involvement of Stakeholders in project delivery process (4.03), Evaluation of Construction Project Critical Success Factors (4.00), Provision of adequate Human Resource and Logistics (3.98) and Continuous Contractors of the Various Construction Firms be encouraged (3.95).

**Table 4.7: Measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana**

<b>Measure</b>	<b>Mean</b>	<b>SD</b>	<b>T</b>	<b>Sig.</b>	<b>Mean Diff.</b>	<b>Rank</b>	<b>Remark</b>
Provision of adequate budget before commencement of project	4.05	1.010	13.618	.000	1.046	<b>1</b>	Agree
Involvement of Stakeholders in project delivery process	4.03	1.176	11.574	.000	1.035	<b>2</b>	Agree
Evaluation of Construction Project Critical Success Factors	4.00	.976	13.470	.000	1.000	<b>3</b>	Agree
Provision of adequate Human Resource and Logistics	3.98	.949	13.617	.000	.983	<b>4</b>	Agree
Contractors of the Various Construction Firms be encouraged	3.95	.945	13.274	.000	.954	<b>5</b>	Agree
Adoption of Multi criteria selection methods to select contractors	3.95	1.010	12.414	.000	.954	<b>6</b>	Agree
To be made mandatory for employers financial capacity and credit	3.93	1.038	11.797	.000	.931	<b>7</b>	Agree
Continuous professional development(CPD) of Construction professionals	3.92	.979	12.347	.000	.919	<b>8</b>	Agree
Awareness creation among organization for effective delivery	3.88	1.005	11.576	.000	.884	<b>9</b>	Agree
Provision and Approval of project Charter for construction project	3.86	1.038	10.838	.000	.855	<b>10</b>	Agree
Separation Physical Project funds from other sectors	3.83	1.121	9.766	.000	.832	<b>11</b>	Agree
Professional Bodies and Government Agencies protection	3.80	1.071	9.867	.000	.803	<b>12</b>	Agree

#### **4.5.1 Provision of adequate budget before commencement of project**

Provision of adequate budget before commencement of project was the first ranked measure with a mean value of 4.05 projected to improve on the factors affecting the delivery of DACF building construction projects in Ghana. These thoughts from the respondents was buttressed by Vaardini et al (2016) who professed that to minimize cost overruns by allocation of sufficient time and money at the design phase, projects owners should endeavor to require availability of adequate funds and selection of a competent consultants and reliable contractor to carry out the work. On the same assertion, Huang et al (2010) admitted that major tasks in public infrastructure projects include: effective allocation; putting the budget to the best use; and maximizing the function of a limited budget. Project budget should be allocated and managed for the client, so that the depreciation of the local currency and inflation does not heavily impact the cost of the project estimated in the local currency (Bentil et al; 2017). With regard to these submissions in line with the findings, postulate the need for the provision of adequate project budget for DACF building construction project. This budget must include the cost from initiation to handing over of project to end user. Hence the need for introduction project charter (local input from MMDA's indicating the type of project and it cost involving the delivery processes and defined roles of the project) of DACF building construction project.

#### **4.5.2 Involvement of stakeholders in project delivery process**

Another measure imperative to improve on the factors affecting the delivery of DACF building construction projects in Ghana is involvement of stakeholders in project delivery process. According to Invensis (2019), stakeholder identification is a continuous process during the entire project life cycle. Identifying them, understanding their level of effect

on a project, and satisfying their demands, needs, and expectations is essential for the success of the project. Additionally, Kahootz (2014) was emphatic on the fact that stakeholders may not be in the driving seat, but they can be extremely useful advocates, sponsors, and agents of change. Kahootz further stressed that, good management of stakeholders will not only clear the path of any possible obstructions but will also promote steady progress and eventually improve the quality of the results you are generating. This assertion affirms to Grace Windsor (2018) indication that pursuance of project success, stakeholder's communication plan should be prioritized in a manner to satisfy their engagement needs or requirements. Hence this assertion hammering the need of stakeholders' involvement in project delivery processes.

#### **4.5.3 Evaluation of construction project critical success factors**

Evaluation of construction project critical success factors defines itself a paramount measure geared towards improving the factors affecting the delivery of DACF building construction projects in Ghana. Ngacho and Das (2015) detailed that evaluation of construction key performance indicators enable the project managers to understand the antecedents and consequents of each factor and their combined impact on overall project performance. Kissi et al (2018) affirms to this indication where he postulated for government ministries to put in place measures for updating, assessing and improving the knowledge base on contract management of projects teams within MMDAs. Affirming to the findings postulate the collaborative need of the variables geared towards the review of DACF building construction project delivery process which will allow evaluation of construction project critical success factors before new funds are allocated for a project.

#### **4.5.4 Provision of adequate human resource and logistics**

Provision of adequate human resource and logistics, a fundamental claim to most enterprises deemed esteemed to meet their requirements formed a central measure to improve on the factors affecting the delivery of DACF building construction projects in Ghana. Consolidating this assertion, Danso (2014) indicates that supervisory team of construction firms, the local authorities and works and housing ministry of Ghana should increase their supervisory activities on workers of construction sites to improve workmanship quality. This idea is complemented further by Kissi et al (2108), pointing out that effective and efficient supervision in the construction industry remains a vital ingredient when it comes to project delivery. Kissi et al further indicated that, there is the need for central government and other managers of the economy to put the needs of PWDs high on the priority list and provide them better incentives and logistics for them to be able to perform their roles effectively. Agreeing to this assertion by the findings proves that, notwithstanding all the effort been incorporated in DACF building construction project delivery, the absence of adequate logistics and equipment to facilitate project supervision is futile to building construction delivery success in the MMDA's.

#### **4.5.5 Continuous contractors of the various construction firms be encouraged to use project management techniques**

A significant pillar which impact greatly on improving the factors affecting the delivery of DACF building construction projects in Ghana is the continuous encouragement of contractors belonging to the various construction firms to use project management techniques. Here, Danso (2014) suggested that regular in-service training and workshops should be organized by contractors to help improve the quality and skills of their

workers. Geared toward the same direction, Kissi (2013) affirms this indication that, there should be Continuous Professional Developments (CPD) of construction professionals through seminar, workshops, and refresher courses. This suggest that upon amendments of DACF project funding there should be regular workshop or seminars for consultants, contractors and relevant officer at MMDA's on new effective project delivery trends on the job market.

#### **4.5.6 Relationship between independent variables on the measures to improve on the factor affecting the delivery of DACF building construction projects in Ghana.**

Further the correlation matrix was performed on the independent variables to determine their degree of association. According to Liu (2013), correlation is performed to test the degree to which two variables co-relate. In establishing this fact, a correlation matrix was carried out on the independent variables on the measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana (Table 4.8). A two tailed bivariate correlation was employed as it was not known the direction the variables would be. This was evidenced by Taherzadeh et al, (2020) who explained that this statistical tool is used to measure the direction and strength of relationship between two variables. As a rule of thumb, the relationship between such variables can be positive, negative or no relationship at all, they emphasized. Interestingly, as per Table 4.7, an overview of the correlation matrix saw a positive perfect relationship between all the variables, an indication of their association and also pointing out to multicollinearity amongst them. In the light of this however, the prime focus was centered on variables whose correlation coefficients were ( $r_s \geq 0.50, p < 0.01$ ).

In this regard, the highest correlation coefficient was found between awareness creation among organization for effective delivery and contractors of the various construction firms be encouraged to use project management techniques ( $r_s = 0.576, p < 0.01$ ). This suggested that, when there is an increase in awareness creation among organization for effective delivery, there will be a corresponding increase in encouragement of contractors in the various firms and vice versa. As suggested by Danso (2014), regular in-service training and workshops should be organized by contractors to help improve the quality and skills of their workers. When contractors are encouraged this way through such processes, they are constantly updated and upgraded in the ethics of their profession and in turn, deliver effectively.

Essentially, continuous professional development (CPD) of construction correlated well with to be made mandatory for employers' financial capacity and credit ( $r_s = 0.571, p < 0.01$ ). This supposes that when continuous professional development (CPD) is made mandatory for employers' financial capacity and credit, it impacts positively on improving on the factors affecting the delivery of DACF building construction project in Ghana. There should be continuous professional developments (CPD) of construction professionals through seminar, workshops, and refresher courses Kissi (2013).

Further, involvement of stakeholders in project delivery process equally recorded positive relations with variables such as adoption of multi criteria selection methods to select contractors ( $r_s = 0.556, p < 0.01$ ), provision of adequate budget before commencement of project ( $r_s = 0.545, p < 0.01$ ), provision of adequate human resource and logistics ( $r_s = 0.527, p < 0.01$ ) and provision and approval of project charter for construction

project. This assessment connotes that, increasing the involvement of stakeholders in project delivery process will positively influence in an increase in provision of adequate budget, adequate human resource and approval of project charter for construction project conversely geared towards improving on the factors affecting the delivery of DACF building construction projects in Ghana. According to Kahootz (2014) Stakeholders may not be in the driving seat, but they can be extremely useful advocates, sponsors, and agents of change.

Again, adoption of multi criteria selection methods to select contractors registered a positive relation with provision of adequate human resource and logistics ( $r_s = 0.537, p < 0.01$ ). This implies that, to improve on the factors affecting the delivery of DACF building construction projects in Ghana, there should therefore be a continuous adoption of the multi criteria selection methods to select contractors which will directly increase the provision of adequate human resources and logistics.

More so, provision of adequate human resource and logistics correlated positively with professional bodies and government agencies protection ( $r_s = 0.520, p < 0.01$ ). This revealed that when professional bodies as well as the government intensifies protection for their respective human resource and logistics, their demand and efficiency will advertently go up and in effect improve on the delivery of DACF building construction projects in Ghana. In this sense, Kissi et al (2018) advocates that, there is the need for central government and other managers of the economy to put the needs of PWDs high on the priority list and provide them better incentives and logistics for them to be able to perform their roles effectively.



Provision and approval of project charter for construction project had a positive relation with contractors of the various construction firms be encouraged ( $r_s = 0.510, p < 0.01$ ). Entailed in this fact is that, when an increase is experienced in the provision and approval of project charter, it is reciprocated in encouraging contractors in the various firms. An essential ingredient needed for improving on the delivery of DACF building construction projects in Ghana.

Correlating positively consequently was the variable professional bodies and government agencies protection with variables such as to be made mandatory for employers' financial capacity and credit ( $r_s = 0.534, p < 0.01$ ), continuous professional development (CPD) of Construction ( $r_s = 0.513, p < 0.01$ ) and awareness creation among organization for effective delivery ( $r_s = 0.548, p < 0.01$ ). As admonished by Kissi et al (2018) for the need for central government and other managers of the economy to put the needs of PWDs high on the priority list and provide better incentives and logistics for them to be able to perform their roles effectively. This implies that when government and other professional bodies prioritize the needs of the district assemblies in terms of capacity training, logistics, finances and others similar, it stimulates the urge in improving on the delivery of DACF building construction projects in Ghana.

Moreover, continuous professional development (CPD) of construction recorded another positive relation with contractors of the various construction firms be encouraged to use project management techniques ( $r_s = 0.514, p < 0.01$ ). This suggests that an increase in continuous professional development (CPD) of construction will boost the courage of contractors in the various firms. Kissi (2013) opines that continuous professional developments (CPD) of construction professionals through seminar, workshops, and

refresher courses encourages contractors in the various construction firms which is ultimately needed to improve on the delivery of DACF building construction projects in Ghana.



**Table 4.8: Relationship between independent variables on the measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana.**

<b>Independent Variables</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>1</b> Involvement of Stakeholders in project delivery process	1											
<b>2</b> Provision and Approval of project Charter for construction project	0.524**	1										
<b>3</b> Adoption of Multi criteria selection methods to select contractors	0.556**	0.529**	1									
<b>4</b> Provision of adequate budget before commencement of project	0.545**	0.499**	0.490**	1								
<b>5</b> Provision of adequate Human Resource and Logistics	0.527**	0.422**	0.537**	0.490**	1							
<b>6</b> Evaluation of Construction Project Critical Success Factors	0.414**	0.498**	0.436**	0.418**	0.354**	1						
<b>7</b> Professional bodies and Government Agencies protection	0.495**	0.430**	0.421**	0.370**	0.520**	0.461**	1					
<b>8</b> To be made mandatory for employers' financial capacity and credit	0.401**	0.351**	0.370**	0.442**	0.342**	0.329**	0.534**	1				
<b>9</b> Continuous professional development (CPD) of Construction	0.421**	0.417**	0.354**	0.280**	0.392**	0.299**	0.513**	0.571**	1			
<b>10</b> Awareness creation among organisation for effective delivery	0.273**	0.435**	0.339**	0.309**	0.314**	0.373**	0.548**	0.502**	0.476**	1		
<b>11</b> Contractors of the Various Construction Firms be encouraged	0.392**	0.510**	0.380**	0.324**	0.258**	0.373**	0.432**	0.465**	0.514**	0.576**	1	
<b>12</b> Separation Physical Project funds from other sectors	0.131	0.284**	0.247**	0.267**	0.184*	0.279**	0.231**	0.448**	0.263**	0.466**	0.473**	1

#### 4.6 To identify the impact of the Guideline for the utilization of DACF on Building Construction Delivery

Akin to the inductive process of qualitative content analysis, the open-ended questions recorded from the interview conducted purposively from sampled professionals were transcribed appropriately. Units of analysis were identified in the process through reading and re-reading of the written responses from the participants. Typically, this constituted the first stage. Coming next, the identified units of analysis from respondents' comments were sorted and subsequently categorized based on their similarities and differences which consequently were coded. Increasingly, a number of the participants gave multiple responses to questions they perceived very pressing. After, themes were generated from the categories which virtually shared the same relation and meaning. In tandem with the quantitative nature of this method, respondents' comments were categorized under the various themes generated and interpreted eventually.

- (1) What's the average number of Building Construction Project that your Assembly awards a year for the past five years?

**Table 4.9 Average number of building construction projects awarded by the Assembly in a year for the past five years.**

Themes	Number of coded responses	Percentage of coded responses
10 projects	1	6.7%
6 projects	3	20.0%
5 projects	6	40.0%
4 projects	4	26.7%
3 projects	1	6.7%
<b>Total</b>	<b>15</b>	<b>100%</b>

Source: Author's Field survey

Presented in Table 4.8 is the stand established by respondents concerning the number of building construction projects that are awarded annually for the past five years. The findings disclosed that, the greatest number of projects awarded per year by the assembly over the past five years stood at five, representing 40% in total. This was followed by four projects (26.7%), six projects (20.0%) as three and ten projects settled for the least number awarded annually.

(2) From your professional perspective how much budget allocation can assist complete that number of awarded projects for a year?

**Table 4.10 Anticipated budget to assist complete the number of projects awarded annually.**

<b>Themes</b>	<b>Number of coded responses</b>	<b>Percentage of coded responses</b>
3 million – 1 million	11	73.3%
Above 3 million	4	26.7%
<b>Total</b>	<b>15</b>	<b>100%</b>

Source: Author's Field survey

As a Follow up to the preceding question. Table 4.9 puts out the expected budget respondents deemed sufficient to assist in completing projects awarded them annually. Interestingly, more than half of them (73.3%) were convinced that, budget ranging from 3 million to 1 million was adequate enough at least in undertaking such activity. Clearly, 26.7% of them on the other hand indicated that budget beyond 3 million provided a better assistance completing these projects.

(3) From your professional experience how much DACF allocation a year is allocated to Building Construction Projects?

**Table 4.11 DACF allocated per year to Building Construction Projects**

Themes	Number of coded responses	Percentage of coded responses
3 million – 250,000	10	66.7%
Above 3 million	2	13.3%
80% - 60% of DACF allocation	3	20.0%
<b>Total</b>	<b>15</b>	<b>100%</b>

Source: Author’s Field survey

As per Table 4.10, the greater majority (66.7%) of the participants attested that the DACF allotted them every year ranged between 3 million – 250,000. 20.0% admitted that they received between 80% to 60% of the total DACF allotted. Parallel to this submission, only 13.3% of the participants were privileged to amass DACF above 3 million.

(4) Is the DACF allocated to the Assembly annually, adequate enough to finance awarded Building Construction Project in that year to completion without any difficulty?

**Table 4.12 Adequacy of DACF allocated per year to complete Building Construction projects without difficulty.**

Theme	Number of coded responses	Percentage of coded responses
Inadequacy of fund	15	100%
<b>Total</b>	<b>15</b>	<b>100%</b>

Source: Author’s Field survey

Surprisingly, all the participants expressed their sentiment on the inadequacy of DACF allocated to them to complete building construction projects without any difficulty (Table 4.10).

(5) Why do you think could be reason to your view in question –4” above?

**Table 4.13 Reasons for inadequate DACF allocated per year to complete Building Construction projects without difficulty.**

<b>Themes</b>	<b>Number of coded responses</b>	<b>Percentage of coded responses</b>
Insufficient funds	9	40.9%
Delays in fund release	6	27.3%
Existing arears	7	31.8%
<b>Total</b>	<b>22</b>	<b>100%</b>

Source: Author’s Field survey

In relation to earlier question, participants gave their reasons for the inadequacy of DACF allocated per year to complete building construction projects (Table 4.11). Accordingly, insufficient funds (40.9%) emerged as the highest reason for this menace. This was closely followed by existing arears (31.8%) which participants equally touted as a key reason for inadequacy of DACF allocation. In the same bracket, delays in fund release (27.3%) was the least recorded reason from participants regarding this situation.

(6) Do the Assembly able to follow strictly the guideline for the utilisation of DACF without any difficult?

**Table 4.14 Assemblies ability to strictly follow the guideline for the utilisation of DACF without any difficult.**

<b>Theme</b>	<b>Number of coded responses</b>	<b>Percentage of coded responses</b>
Able	8	53.3%
Unable	7	46.7%
<b>Total</b>	<b>15</b>	<b>100%</b>

Source: Author’s Field survey

Admittedly, Table 4.12 highlights participants take on their ability to strictly follow the guideline for the utilisation of DACF without any difficult in their respective assemblies. Undeniably, 53.3% of them professed their ability to strictly follow the guideline as 46.7% proved otherwise. To them, they were not able to strictly follow the guideline for the utilisation of DACF without any difficult in their respective assemblies.

(7) How do you see the future for the utilisation of DACF guidelines and the impact it could have on Building construction project delivery?

**Table 4.15 Future for the utilisation of DACF guidelines and the impact it could have on Building construction project delivery.**

Theme	Number of coded responses	Percentage of coded responses
Bright future	7	41.2%
Reviewed	10	58.8%
<b>Total</b>	15	100%

Source: Author's Field survey

Constructively, a little over half of the participants (58.8%) strongly recommended that, the future for the utilisation of DACF guidelines and the impact it could have on building construction project delivery would be much felt if the whole process is reviewed (Table 4.12). Despite this concern, 41.2% of them were persuaded that the future of this guidelines remained bright. The proceedings advocate the need to review the guideline for utilisation of DACF especially the infrastructure section, to meet the local content at the various MMDA's



(8) In your view what do you think could be the some of the challenges that Building Construction projects funded by DACF is confronting?

**Table 4. 16 Challenges confronting building construction projects funded by DACF**

<b>Themes</b>	<b>Number of coded responses</b>	<b>Percentage of coded responses</b>
Delay in fund release	12	54.5%
Delay in project completion	4	18.2%
Abandonment of projects	2	9.1%
Procurement process	1	4.5%
Increase in completion cost	3	13.6%
<b>Total</b>	<b>22</b>	<b>100%</b>

Source: Author's Field survey

As illustrated in Table 4.13, respondents vividly indicated the challenges that confronted building construction projects funded by DACF. Here, the main challenge identified was delay in releasing funds (54.5%). Following this came delay in project completion (18.2%), increase in completion cost (13.6%), abandonment of projects (9.1%) and the least been the procurement process (4.5%). The common fund newsletter, (2014) maintained that, the late disbursement of the DACF affects the successful completion of many projects at the district level as issued by the Institute of Democratic Governance (IDEG). Further disclosures pointed to the fact that, even regardless of insufficient funds, projects are sometimes awarded awaiting release of funds from the central government; which in itself indicates a sign of poor planning and funds control. Farah (2019), couldn't agree more that, poor planning and management of the construction projects may lead to several negative effects on the duration and completion of projects. The impact of

these, adversely is felt in; cost and time overrun, abandoned projects, poor quality of works and poor performance of projects delivered at the MMDA's.

- (1) Can you suggest ways for improving the delivery of Building Construction Projects financed by DACF?

**Table 4.17 Ways of improving building construction projects funded by DACF**

<b>Themes</b>	<b>Number of coded responses</b>	<b>Percentage of coded responses</b>
Regular fund release	2	11.1%
Monitoring and evaluation	5	27.8%
Early fund release	11	61.1%
<b>Total</b>	18	100%

Source: Author's Field survey

Given the opportunity, participants impressively suggested ways for ways of improving building construction projects funded by DACF (Table 4.14). In their submission, the majority placed emphasis on the early release of funds (61.1%). Similarly, monitoring and evaluation (27.8%) as well as regular release of funds (11.1%) were raised as prospective ways for improving building construction projects funded by DACF. Farah (2019), proposed that these delays can be reduced or prevented by an increased pre - project planning and successful project management as they are one of the most critical success factors of the construction project accomplishment. This need extensively informed the exclusion of infrastructure section from the guideline of DACF and the introduction of project charter in MMDA's project delivery where moneys are made available before procurement process and its subsequent stages. This will allow and encourage the use of project management techniques as recommended by Danso (2014).

Deducing from the proceedings, the impact identified centered on four main issues enormously linked to the central government and were also outstanding and prevalent throughout the participant's responses. These were; inadequacy of allocated funds to manage projects, delay in the release of funds, poor planning and fund control and inapplicable guideline to manage DACF building construction projects.



## CHAPTER FIVE

### SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Summary of Finding

This chapter lays out the summary of the key findings, conclusions reached and appropriate recommendations drawn with regards to the factors affecting the delivery of building construction projects funded by District Assemblies Common Fund (DACF). The core of the entire study was based on clearly defined set of objectives. These included; identifying the factors affecting the delivery of DACF building construction projects in Ghana, identifying the effects of the factors affecting the delivery of DACF building construction projects in Ghana, developing measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana and identifying the impact of the guideline for the utilization of DACF on Building construction delivery. Data was obtained through field survey with 173 respondents validated for the study emerging from 334 questionnaires self-administered. These were chosen from a population of District Coordinating Directors, Finance officers, Head of Works, Planning Officers, Budget Officers, Procurement officers, internal Auditors, Administrators, General Secretaries, Programs Coordinators and Researchers. 15 of these professionals were interviewed further to consolidate the data obtained all directed at addressing the specific objectives outlined. Accordingly, the key findings emanating from each objective are as follows;

### **5.1.1 Identifying the factors affecting the delivery of DACF building construction projects in Ghana.**

The findings with respect to identifying the factors affecting the delivery of DACF building construction projects in Ghana came up with five main principal components. This was achieved through the use of factor analysis to narrow the respective variables into appropriate dimensions. These were; (1) Contractor Related factors, (2) Project Funding Related factors, (3) Supply Chain Related factors, (4) Site Related factors and (5) Client Related factors.

### **5.1.2 Identifying the effects of the factors affecting the delivery of DACF building construction projects in Ghana.**

In identifying the effects of the factors affecting the delivery of DACF building construction projects in Ghana, the results pointed out to seven main effects. Employing descriptive statistics in analysing the variables which subsequently was ranked with a mean value pegged at ( $\geq 3.0$ ), the effects that came forth were Cost and Time Overrun’, Poor quality Standard work’, Unexploited completed project’, Contractor bankruptcy or liquidation’, Causes accident/disaster’, Loss of workers and profit’ and Loss of stakeholders trust and confidence’.

### **5.1.3 Developing measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana.**

The study identified five key measures geared towards improving on the factors affecting the delivery of DACF building construction projects in Ghana. Using a one sample T- test technique with a hypothesized mean significant at 3.0, Provision of adequate budget before commencement of project’, Involvement of Stakeholders in project delivery process’, Evaluation of Construction Project Critical Success Factors’, Provision of adequate Human Resource’ and Logistics and Continuous Contractors of the Various Construction Firms be encouraged to use project management techniques’ emerged as the key measures in this respect.

#### **5.1.4 Identifying the impact of the Guidelines for the utilization of DACF on Building Construction Delivery.**

The impact of the guidelines for the utilization of DACF on building construction delivery identified by the study were cost and time overrun, abandoned projects, poor quality of works and poor performance of projects delivered at the MMDA's. These evolved from four main situations emanating from inadequacy of allocated funds to manage projects, delay in the release of funds, poor planning and fund control due to inapplicable guidelines to manage DACF building construction projects. These were achieved through interview sections with participants in their respective fields.

#### **5.2 Conclusion**

Building construction project delivery entails planning, design, construction and other processes necessary for organising, executing, completing and handing over of a building facility. Work delivery has been one of the effective means of appreciating value for money in all scope of life especially in the production industry; and for that matter the work delivered must be of good quality. Building facility offer social and welfare benefits, which is a paradigm of fulfilling one of the most basic needs of populace by providing shelter. It also offers people the opportunity to improve their living standards. The quality of the design and construction of these facilities have an impact on the efficiency with which the productive activities and provision of services can be undertaken. Thus, the construction industry influences the competitiveness of enterprises within the economy. These has been one of the key role of MMDA's in both the indigenous growth of the economy, by controlling development in both the public and private sectors of the country. It is testified that, the development of MMDA's building construction project is solidify by central government numerous funding which DACF is the primary source. It is therefore imperative to find prudent factors affecting the delivery of building construction project funded by DACF to

meet its needs particularly in a country like Ghana where its economy is persevering to find its feet. The brain behind the study was to improve on the efficiency of DACF Building Construction Delivery of MMDA's in Ghana to prevent or reduce the setback associated with it; and this will have positive impact on the development of the country; by preventing or reducing monetary waste, hence having a positive impact on the national economy as a whole.

Dependent on the analysis of the data collected, it was identified that five main factors were the factors affecting the delivery of DACF building construction projects in Ghana. These were (1) Contractor Related factors, (2) Project Funding Related factors, (3) Supply Chain Related factors, (4) Site Related factors and (5) Client Related factors

In addition, seven (7) main effects pointed out as the effects of the factors affecting the delivery of DACF building construction projects in Ghana. These were Cost and Time Overrun, Poor quality Standard work, Unexploited completed project, Contractor bankruptcy or liquidation, Causes accident/disaster, Loss of workers and profit and Loss of stakeholders trust and confidence.

Moreover, advancing into developing measures to improve on the factors affecting the delivery of DACF building construction projects in Ghana, five main factors were pointed out by respondent as more pressing ahead of the other relating measures although they all accounted for the same merit, notably were Provision of adequate budget before commencement of project, Involvement of Stakeholders in project delivery process, Evaluation of Construction Project Critical Success Factors, Provision of adequate Human Resource and Logistics and Continuous Contractors of the Various Construction Firms be encouraged to use project management techniques.

Furthermore, the impact of the guidelines for the utilization of DACF on building construction delivery identified by the study were cost and time overrun, abandoned projects, poor quality of works and poor performance of projects delivered at the MMDA's. These evolved from four main situations emanating from inadequacy of allocated funds to manage projects, delay in the release of funds, poor planning and fund control to inapplicable guidelines to manage DACF building construction projects.

The study therefore concludes that, notwithstanding the factor affecting the delivery of building construction projects (Contractor Related factors, Project Funding Related factors, Supply Chain Related factors, Site Related factors and Client Related factors) funded by DCAF in the various MMDA's, its efficiency can be improved while taking a keen look at the measure to improve on the factors affecting the delivery of DACF building construction projects (Provision of adequate budget before commencement of project, Involvement of Stakeholders in project delivery process, Evaluation of Construction Project Critical Success Factors, Provision of adequate Human Resource and Logistics and Continuous Contractors of the Various Construction Firms be encouraged to use project management techniques)

### **5.3 Recommendations**

Based on the findings and discussions of the study, the following recommendations were put out:

1. The guideline for the utilisation of DACF should be reviewed to meet the local content at the various MMDA's by excluding the infrastructure section from the guideline and the introduction of project charter from the various MMDA's annually to serve as a benchmark to determine the type of construction project to be delivered at particular period for each MMDA.



2. DACF budget earmarked (in the project Charter) for a particular building construction project for MMDA's should be provided before commencement of its delivery process.
3. Building construction project critical success factors at the various MMDA's should be evaluated and scored to serve as a preventive measure to put officials on their toes to achieve delivery standard expected by MLGRD.
4. Awareness creation through seminars and training programmes must be intensified by Ministry of Local Government and rural Development on the factors affecting the delivery of DACF building construction project delivery at various MMDA's to enlightening and give them the opportunity to accept, its effect and participate actively in its recommended measures.
5. There should be capacity building and training programmes for professionals in the construction industry to improve on their skill and proficiency work delivery.
6. It should be made mandatory for building construction professionals to get affiliated to a professional association such as Ghana institute of surveyors (GHIS), Institution of Engineering and Technology (IET) and Ghana Institute of Engineers (GHIE).

#### **5.4 Recommendations for future research studies**

The research has opened perspectives on further study on how to:

1. Develop evaluation framework for MMDA's building construction project delivery critical success factors on key performance indicators.
2. Factors to consider for the preparation of project charter for MMDA's construction project.

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## APPENDIX

### APPENDIX A

#### QUESTIONNAIRE

Aborah – Osei Castro (Student ID No. 8171760017)

UEW-K Research Student

Department of Wood and Construction Technology

Kumasi

Tel. 024-7898540

Date: 31/05/2019

**Dear Sir/Madam,**

#### RESEARCH QUESTIONNAIRE SURVEY

I am a final year student at the University of Education Winneba-Kumasi campus, carrying out a project on the topic **“FACTORS AFFECTING THE DELIVERY OF BUILDING CONSTRUCTION PROJECTS FUNDED BY DISTRICT ASSEMBLIES COMMON FUND (DACF)” – THE CASE FOR ASHANTI, GREATER ACCRA AND BONO EAST REGION**

This questionnaire is intended to identify the factors affecting the delivery and the corresponding effects of DACF Building Construction Projects in Ghana as well as identify the measures to improve on the factors affecting the delivery of DACF Building Construction Projects in Ghana. Your consent and help is being sought to enable me carry out this exercise for the betterment of our construction industry.

All information provided by you in this exercise is **strictly confidential** for academic purposes and no information will be disclosed without your consent.

Thank you.

Yours faithfully,

.....

## QUESTIONNAIRE ON

### **FACTORS AFFECTING THE DELIVERY OF BUILDING CONSTRUCTION PROJECTS FUNDED BY DISTRICT ASSEMBLIES COMMON FUND (DACF).**

There are **five parts** of the questionnaire:

**Part A:** Particulars of the respondent / General Information

**Part B:** Factors affecting the delivery of DACF Building Construction Projects in Ghana.

**Part C:** Effects of the Factors affecting the delivery of DACF Building Construction Projects in Ghana.

**Part D:** Measures to improve on the factors affecting the delivery of DACF Building Construction Projects in Ghana.

**Part E:** Recommendations for the effective delivery of DACF Building Construction Projects in Ghana.



Aborah - Osei Castro

(Research student)

MPhil. Construction Technology

UEW-K

For any question(s) or clarification, please contact me on

Tel. No. 0247898540

**PART A: PARTICULARS OF RESPONDENTS (OPTIONAL) / GENERAL INFORMATION**

Please answer the questions below by ticking (√) as appropriate

**1. What is your academic qualification?**

BSc. Honors [ ] P.G. Diploma [ ] HND [ ] MSc. /MEng [ ] MPhil. [ ] PhD. [ ]

**2. Which agency do you belong?**

MMDA [ ] Ministry of Local Government and Rural Development (MLGRD) [ ] District Assemblies Common Fund (DACF) Secretariat [ ] NALAG [ ] Contractor [ ] Consultant [ ]

Others (please specify) .....

**3. What is your status in your agency?**

District Coordinating Director [ ] Finance Officer [ ] Head of works [ ] Planning officer [ ] Budget Officer [ ] Procurement Officer [ ] Internal Auditor [ ] Administrator [ ] General Secretary [ ] Programs Coordinator [ ] Researcher [ ] others, (please specify) .....

**4. Number of years in the profession (work experience)?**

5 years or less [ ] 6 – 10 years [ ] 11 – 15 years [ ] above 15 years [ ]

**5. Do you belong to any professional Body?**

Yes [ ] No [ ]

**PART B: FACTORS AFFECTING THE DELIVERY OF DACF BUILDING CONSTRUCTION PROJECTS IN GHANA.**

**5. How do you assess the factors affecting the delivery of DACF building construction projects in Ghana? Rank on Likert scale of 1 to 5.**

*Please indicate (√) your level of agreement by ranking each option.*

**5 = Strongly Affected 4 = Affected 3 = Neutral 2 =Not Affected 1 = Strongly Not Affected**

S/N	FACTORS	1	2	3	4	5
1	Inefficient contractor's selection method and procedure.					
2	Contractor's financial difficulties					
3	Skill labour shortage.					
4	Poor Communication.					
5	Poor site management.					
6	Construction slipups and Defective Works.					
7	Weather and other Environmental Challenges.					
8	Equipment and tool Shortage.					
9	Unrealistic Time line for project delivery.					
10	Inadequate logistics.					
11	Lack of coordination and cooperation of stakeholders.					
12	Influence of Process by political Heads					
13	Inadequate Human Resource to carry out supervision.					
14	Delay in disbursement of DACF Fund					
15	Inadequate DACF Allocation for MMDA's projects.					
16	Inapplicable Guideline for the Utilisation of DACF Fund due to delay in disbursement of Fund.					
17	Poor project planning.					
18	Material shortage					
19	Design Changes and Variations					
20	Lack of Credit Facilities					
21	Political and Macro level Economic Factors					
22	Lack of understanding of specifications and Contract Conditions					
23	Excessive Bureaucratic Conditions					
24	Lack of Respect for Contract					
25	Inadequate Knowledge of Construction Project Management Practices by Government Agencies/Public Services					
26	Poor Definition of Construction Project Scope					
27	Poor Understanding of Procurement Practices					
	<b>If Other Factors (Please Specify)</b>					

**PART C: EFFECTS OF THE FACTORS AFFECTING THE DELIVERY OF DACF BUILDING CONSTRUCTION PROJECTS IN GHANA.**

**6. The following are the effects of the factors affecting the delivery of DACF building construction projects in Ghana.** Using a scale of **1-5**, where **5 = Strongly Agree**, **4 = Agree**, **3 = Neutral**, **2 = Disagree** and **1 = Strongly Disagree**; *determine the effects of the factors affecting the delivery of DACF building construction projects in Ghana by ticking (√).*

S/N	EFFECTS	1	2	3	4	5
1	Poor quality standard work					
2	Dispute among Contractors and Client					
3	Contractor bankruptcy or liquidation					
4	Lose of workers and profit					
5	Cost and Time Overrun.					
6	Project overall failure					
7	Resource Shortages					
8	Project team isolation and conflict					
9	Loss of Stakeholders trust and confidence					
10	Unexploited completed project					
11	Causes accident/disaster					
12	Generate waste/scrap to Harm the Environment					
13	Wastage of Materials and Resources					
	If other Effects (Please Specify)					

**PART D: MEASURES TO IMPROVE ON THE FACTORS AFFECTING THE DELIVERY OF DACF BUILDING CONSTRUCTION PROJECTS IN GHANA.**

**7. What measures can help improve the factors affecting the delivery of DACF building construction projects in Ghana?**

*Please rank (√) the following factors on the merit at which they improve on the factors affecting the delivery of DACF building construction projects in Ghana from 1-5 on the Likert scale. 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree 1 = Strongly Disagree.*

<b>SN</b>	<b>MEASURES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>1</b>	Involvement of Stakeholders in project delivery process.					
<b>2</b>	Provision and Approval of Project Charter for Construction project.					
<b>3</b>	Adoption of Multi criteria selection methods to select qualified contractors.					
<b>4</b>	Provision of project budget before commencement of the project.					
<b>5</b>	Provision of adequate Human Resource and logistics for supervision.					
<b>6</b>	Evaluation of Construction Project Critical Success Factors (like Project related factors, Client related factors, Consultant/ Project Managers related factors, Supply Chain related Factors, External Environmental related Factors) on the Key Performance Indicators of a project ( like cost, time, quality, site dispute, project safety and environmental Impact)					
<b>7</b>	Professional bodies and Government Agencies to provide protection to promote well balanced allocation of risk and a fair contract to all related parties					
<b>8</b>	To be made mandatory for employers financial capacity and credit rating to be made transparent to facilitate contractors in selecting employers who are credit worthy and to improve the chances of the Contractors being paid					
<b>9</b>	Continuous professional development (CPD) of Construction professionals through regular seminars, workshop and refresher courses					
<b>10</b>	Awareness creation among organisation such as Government Agencies and Professional Bodies on the need for effective project delivery practices.					
<b>11</b>	Contractors of the Various Construction Firms should be encouraged to use project management techniques in dealing with project					
<b>12</b>	Separation Physical Projects funds from the other sectors and Channelled through the Central Bank to ensure Fiscal Discipline					



**APPENDIX B**  
**INTERVIEW GUIDE**

Aborah – Osei Castro (Student ID No. 8171760017)  
UEW-K Research Student  
Department of Wood and Construction Technology  
Kumasi  
Tel. 024-7898540  
Email: castos1985@gmail.com

Date: 31/05/2019

**Dear Sir/Madam,**

**RESQUEST TO BOOK APPOINTMENT TO CONDUCT INTERVIEW ON  
FACTORS AFFECTING THE DELIVERY OF BUILDING CONSTRUCTION  
PROJECTS FUNDED BY DISTRICT ASSEMBLIES COMMON FUND (DACF) – THE  
CASE FOR ASHANTI, GREATER ACCRA AND BONO EAST REGION**

I am a final year student at the University of Education Winneba-Kumasi campus, at the Department of Wood and Construction Department. I write to kindly book an appointment with you for an interview on the above research topic

This study will like to elicit the views of fifteen (15) Senior Officers at MMDA’s in the study areas on the topic, based on their work schedule and experience in their capacity to ensure effective Delivery of Building Construction projects funded by DACF. The implication of the finding of the study will create the awareness of how well DACF concept on Building Construction delivery has been adopted, operationalized and developed the country, which in effect clarify the need to improve on the efficiency of DACF on Building Construction delivery to assist if not eradicated minimize the canker from the building construction sector as far as MMDA’s in Ghana is concern

We appreciate that the interview is going to take some of your valuable time, however, we urge you to try and participate, as your contribution is very important towards the success of this study.

All information provided by you in this exercise is **strictly confidential** for academic purposes and no information will be disclosed without your consent.

Thank you.

Yours faithfully,

.....



There are **two parts of the interview**:

**Part A:** Particulars of the respondent / General Information

**Part B:** Main Interview questions

**PART A:** Particulars of the Respondent / General Information

1. What is your Job Title?
  - a) Head of works Department
  - b) District Budget Analyst
  - c) District Planning Officer
  - d) District Finance Officer
  - e) District coordinating Director
  
2. Number of years in the Profession (work experience)?
  - a) Below 5 years
  - b) 5 – 10 years
  - c) 11 – 15 years
  - d) Above 15 years
  
3. What age group do you belong?
  - a) 20 – 30 years
  - b) 31 – 40 years
  - c) 41 – 50 years
  - d) 51 – 60 years
  
4. What is the level of your education?
  - a) Diploma
  - b) Bachelor's Degree
  - c) Master's Degree
  - d) Doctorate Degree
  
5. Do you belong to any professional association?
  - a) Yes
  - b) No



**Part B: Main Interview questions**

1) What's the average number of Building Construction Project that your Assembly awards a year for the past five years?

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.....  
.....

2) From your professional perspective how much budget allocation can assist complete that number of awarded project for a year?

.....  
.....  
.....

3) From your professional experience how much DACF allocation a year is allocated to Building Construction Projects?

.....  
.....  
.....

4) Is the DACF allocated to the Assembly annually, adequate enough to finance awarded Building Construction Project in that year to completion without any difficulty?

.....  
.....  
.....

5) Why do you think could be reason to your view in question -4" above?

.....  
.....  
.....  
.....

6) From your professional experience how do you asses the number of DACF projects awarded a year as compared to the yearly allocated DACF by the Central Government?

.....  
.....  
.....  
.....

7) Do the Assembly able to follow strictly the guideline for the utilisation of DACF without any difficult?

.....  
.....

8) How do you see the future for the utilisation of DACF and the impact it could have on Building construction project delivery?

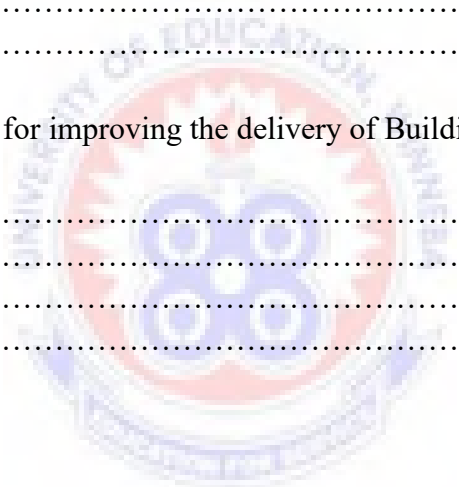
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9) In your view what do you think could be the some of the challenges that Building Construction projects funded by DACF is confronting?

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.....

10) Can you suggest ways for improving the delivery of Building Construction Projects financed by DACF?

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Thank you!

**APPENDIX C**  
**INTRODUCTORY LETTER (STUDENT)**

Aborah – Osei Castro (Student ID No. 8171760017)  
UEW-K Research Student  
Department of Wood and Construction Technology  
Kumasi  
Tel. 024-7898540

9<sup>th</sup> July, 2019

The Head of Department  
Wood and Construction Technology  
University of Education Winneba  
Kumasi

**APPLICATION FOR INTRODUCTORY LETTER**

Please sir, I am a final year MPhil Construction Technology student at the University of Education Winneba-Kumasi campus, carrying out a project on the topic ***“Factors Affecting the Delivery of Building Construction Projects Funded by District Assemblies Common Fund (DACF)” – The case for Ashanti, Greater Accra and Bono East Region.***

In view of this it has become necessary for your approval to assist me get an ***introductory letter*** to gather data from the respective agencies, contractors, consultant and stakeholders on my thesis.

I hope my application meets your consideration.

Thank you.

Aborah – Osei Castro  
(Student ID No. 8171760017)

**APPENDIX D**  
**INTRODUCTORY LETTER (INSTITUTION)**



**UNIVERSITY OF EDUCATION, WINNEBA**  
**COLLEGE OF TECHNOLOGY EDUCATION, KUMASI**  
**FACULTY OF TECHNICAL EDUCATION**  
**DEPARTMENT OF CONSTRUCTION AND WOOD TECHNOLOGY EDUCATION**

P. O. Box 1277, Kumasi, Ghana  
+233 (020) 5111914

[constwoodtech.calttek@uew.edu.gh](mailto:constwoodtech.calttek@uew.edu.gh)

UEW/KC/CW/

July 23,2019

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.....  
.....  
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Dear Sir/Madam,

LETTER OF INTRODUCTION

I write to introduce Mr. Aborah-Osei Castro, a final year student with Index No. 8171760004 pursuing M.Phil. (Construction) Programme at the College of Technology Education, Kumasi (UEW).

Mr. Aborah-Osei is undertaking a research project and wishes to collect some data in your Organisation. His research project is titled “Factors Affecting the Delivery of Building Construction Projects Funded by District Assemblies Common Fund (DACF)” – The case for Ashanti, Greater Accra and Bono East Region.

Please kindly offer him the needed assistance. Thank you.

Yours sincerely,

MICHAEL K. TSORGALI  
AG. HEAD, DEPARTMENT OF CONSTRUCTION AND WOOD TECH.

**APPENDIX E**  
**QUALITATIVE CODING OF INTERVIEW RESPONSES**

Q1	What's the average number of Building Construction Project that your Assembly awards a year for the past five years	10 projects	6 projects	5 projects	4 projects	3 projects
R1	6 Building Projects		1			
R2	10 Building projects	1				
R3	4 projects				1	
R4	4 projects				1	
R5	5 Projects			1		
R6	6 projects		1			
R7	5 projects			1		
R8	4 Projects				1	
R9	3 projects					1
R10	5 Projects			1		
R11	5 projects			1		
R12	5 projects			1		
R13	6 projects		1			
R14	4 Years				1	
R15	5 Projects			1		
	<b>FREQUENCY</b>	<b>1</b>	<b>3</b>	<b>6</b>	<b>4</b>	<b>1</b>
	<b>PERCENTAGE</b>	<b>6.7%</b>	<b>20.0%</b>	<b>40.0%</b>	<b>26.7%</b>	<b>6.7%</b>

Q2	From your professional perspective how much budget allocation can assist complete that number of awarded project for a year?	3 million to 1 million	Above 3 million
R1	GHC 3,829,167.00		1
R2	GHC 3 Million		1
R3	GHC 2,000,000.00		1
R4	1 million Ghana cedis		1
R5	3.5 million Ghana Cedis		1
R6	6 million Ghana cedis		1
R7	2 Million Ghana Cedis		1
R8	3.5 million Ghana Cedis		1
R9	2 Million Ghana cedis		1
R10	2.5 million Ghana Cedis		1
R11	1.5 million Ghana cedis		1
R12	2 million Ghana Cedis		1
R13	1.8 million Ghana Cedis		1
R14	3 million Ghana Cedis		1
R15	6 million Ghana cedis		1
	<b>FREQUENCY</b>	<b>11</b>	<b>4</b>
	<b>PERCENTAGE</b>	<b>73.3%</b>	<b>26.7%</b>

Q3	From your professional experience how much DACF allocation a year is allocated to Building Construction Projects?	3 million - 250,000	80% and below of DACF allocation	Above 3 million
R1	GHC 1,158,628.00	1		
R2	70% of DACF allocation		1	
R3	GHC 2,500,000.00	1		
R4	250,000.00			1
R5	4 million Ghana Cedis		1	
R6	80% is of allocation	1		
R7	1.2 million Ghana Cedis	1		
R8	1.2 million Ghana Cedis	1		
R9	3 million Ghana Cedis		1	
R10	60% of allocations	1		
R11	800, 000.00 Ghana Cedis	1		
R12	800,000.00 Ghana cedis	1		
R13	800,000.00 Ghana Cedis	1		
R14	1.2 million Million Ghana Cedis	1		
R15	4.8 million Ghana Cedis			1
	<b>FREQUENCY</b>	<b>10</b>	<b>3</b>	<b>2</b>
	<b>PERCENTAGE</b>	<b>66.7%</b>	<b>20.0%</b>	<b>13.3%</b>

Q4	Is the DACF allocated to the Assembly annually, adequate enough to finance awarded Building Construction Project in that year to completion without any difficulty?	Inadquate of fund
R1	Is inadequate	1
R2	No, it's not enough	1
R3	No , due to the inflow	1
R4	No,	1
R5	No,	1
R6	No,	1
R7	Not at all, its willfully inadequate	1
R8	No, it's not adequate	1
R9	No, it's not adequate	1
R10	No, it's not adequate	1
R11	No, it is not enough	1
R12	No, its not adequate	1
R13	No	1
R14	No	1
R15	No, it's highly not adequate, there is always difficulty in completion of DACF projects	1
	<b>FREQUENCY</b>	<b>15</b>
	<b>PERCENTAGE</b>	<b>100.0%</b>

Q5	Why do you think could be reason to your view in question "4" above?	insufficient funds	Delays in fund release	Existing arrears
R1	DACF allocation is not enough to fully implement for the projects within the plan period comparing the number of projects awarded.	1		
R2	This is because of the releases of DACF funds, the money is not timely released		1	
R3	Because there is the inflow for the DACF is inconsistent and not regular it is difficult to complete those projects		1	
R4	This is because there is always arrears in the ongoing projects, where any time there is allocation part of the money have to be used to pay the old projects before new ones is considered. The money allocated is not adequate.	1		1
R5	Because the projects are always rolled over, and DACF releases also delays		1	
R6	There is always rollover, there is always arrears for all the releases			1
R7	It's not enough to finance construction projects	1		
R8	Theirs is challenges, the DACF release is not adequate and there is always arrears and several uncompleted projects	1		1
R9	There is always arrears in the projects and the amount release is not adequate	1		1
R10	Moneys are not release on time and there is most often arrears, where old projects are rolled over and new projects awarded which create huge depth on the DACF		1	
R11	DACF allocation is not adequate, not release on time where there is always arrears in the releases	1	1	1
R12	DACF releases delays and the amount released is not adequate as compared to the quantum of work at hand	1		1
R13	DACF releases delays and the amount released is not enough	1	1	
R14	There is always arrears in DACF projects, and this leads to rollover in the old projects resulting in huge depths in DACF projects			1
R15	The funds is not adequate, and the political heads abandons old project and pursue their own leaving huge depths in the project. In addition DACF is overloaded with a lot of projects	1		
	<b>FREQUENCY</b>	<b>9</b>	<b>6</b>	<b>7</b>
	<b>PERCENTAGE</b>	<b>40.9%</b>	<b>27.3%</b>	<b>31.8%</b>



Q6	Is the DACF allocated to the Assembly annually, adequate enough to finance awarded Building Construction Project in that year to completion without any difficulty?	insufficient fund
R1	The DACF allocation is not adequate to the number of projects awarded a year	1
R2	It's willfully not adequate, and it has to be reviewed so much of the money be added.	1
R3	There is always a gap between the inflow and the projects and due to that DACF projects suffer delays and comes to a standstill due to the fact that the DACF fund are not regular and constant.	1
R4	It's willfully not sufficient for the projects initiated	1
R5	The money is not enough	1
R6	The DACF FUNDS is not enough as compared number of projects awarded	1
R7	The projects awarded far outweighs the funds allocated by the Central Government	1
R8	The DACF allocation is not able to mitigate the budget of the awarded projects	1
R9	The DACF Allocated is adequate to complete the awarded projects	1
R10	DACF allocations are not adequate as compared to the number of projects awarded	1
R11	The DACF allocations are not adequate as compared to the projects awarded.	1
R12	DACF releases is not adequate as compared to projects awarded a year and the arrears in the old project.	1
R13	The yearly DACF allocated is not adequate as we compare to awarded project and the various payment arrears of old projects	1
R14	It does not match up, the funds is not adequate	1
R15	The funds released is not adequate as compared to the awarded projects, which creates huge arrears in DACF	1
<b>FREQUENCY</b>		<b>15</b>
<b>PERCENTAGE</b>		<b>100.0%</b>

Q7	Do the Assembly able to follow strictly the guideline for the utilisation of DACF without any difficult?	Able	Unable
R1	No, about 60% followed		1
R2	To a large extent, yes it is followed	1	
R3	No, it is difficult to follow that guidelines		1
R4	They are unable to follow, due to the fact that it mostly does not meet the needs on grounds.		1
R5	The only difficulty is that the Assembly is not able to assess the funds because of the delays, and this results in reviews and rollovers of funds which makes it difficult to follow.		1
R6	No, situations on grounds does not allow so		1
R7	Yes, its followed that's why projects delays	1	
R8	Yes, we are able to follow	1	
R9	No, there is difficulties. It's difficult to follow		1
R10	Yes, we do our best to follow	1	
R11	Practically, there is difficulty		1
R12	Yes, we manage to follow	1	
R13	Yes, we do follow	1	
R14	Yes	1	
R15	Yes, we manage to follow	1	
	<b>FREQUENCY</b>	<b>8</b>	<b>7</b>
	<b>PERCENTAGE</b>	<b>53.3%</b>	<b>46.7%</b>

Q8	How do you see the future for the utilisation of DACF guidelines and the impact it could have on Building construction project delivery?	Bright future	Reviewed
R1	It will be bright if it could be followed accordingly	1	
R2	Future will be bright if the release are coming as it is required, the impact will be negative if the moneys are not released on time	1	
R3	The Guideline is a positive thing on the regulation or utilization of DACF, however it is been directed by the policy of government in power and therefor if we want the guideline to have a greater impact on the people then we should have local content (i.e. people from the local level) should be able to give the guideline on how they want the common fund should be used, but since these guideline is coming from the central Government it impact more especially on the project sometimes becomes very difficult and therefore the future the guideline should come from the local level. Where each district will have it own guideline on how they want to utilize so far as the guideline is coming from the central Government it means that, projects will continue to suffer because some of these projects that is needed by the people are not being considered through the guidelines.	1	1
R4	There is the need for variations in the guideline for utilization of DACF		
R5	There should be a review with respect to number of projects it should be able to fund.		1
R6	There should be review of the guideline for DACF utilization.		1
R7	The guideline is good but it tights the hands of the Assembly, and for the guideline to be followed deliciously, the Assembly should be allowed to prepare its budget for approval before it is release, to this it can be followed.	1	1
R8	It has to be improved because of it set backs		1
R9	It was done in a good intention but the way money is released it has to be reviewed have a local content in the guideline.		1
R10	The guideline should be reviewed to allow for local input		1
R11	The guideline will be ok, if it is specific as the tune of money that should be awarded to allow for completion of awarded projects		1
R12	The guideline is good for the other sectors but for construction projects there is always problems because of rate of releases and the inadequacy of moneys allocated	1	
R13	The guideline is ok, but the releases has to be release on time.	1	
R14	It has to be reviewed		1
R15	It is good to other sectors of the development but for building Construction projects there is always difficulties and which keeps repeating in the auditor general's report. Physical Project portion in the guideline should be looked at and addressed.	1	1
<b>FREQUENCY</b>		<b>7</b>	<b>10</b>
<b>PERCENTAGE</b>		<b>41.2%</b>	<b>58.8%</b>

Q9	In your view what do you think could be the some of the challenges that Building Construction projects funded by DACF is confronting?	Delay in fund release	Delay in project completion	Abandonment of projects	Procurement process	Increase in completion cost
R1	Bureaucratic nature of procurement process				1	
R2	Projects completion will be delayed, Deteriorate of Building as its abandoned				1	
R3	Poor inflow of fund, Inadequate supervision, High cost of projects due delay in release in funds, Low impact on beneficially community due to project delays	1				
R4	Delay in payments, Delay in the completion of the work, It increase the cost of the project due to likely fluctuation in the works due to the delays	1	1			1
R5	Releases are delayed, Number of projects awarded does not matchup with DACF funds	1				
R6	DACF funds does not flow as expected, The DACF is loaded more than expected	1				
R7	Delays in completion of project, Delays in payments of contractor	1	1			
R8	Late disbursement of DACF	1	1			
R9	Delays in completion of projects, DACF releases not adequate	1				
R10	Early release of DACF, Increase in allocation of DACF for MMDA's, There should be local input in the guideline for the utilization of DACF	1				
R11	Late releases of DACF	1				
R12	Delay in completion of projects, Increase in project cost because of the delay in completion of project			1		1
R13	Late release of DACF	1				
R14	Late release of DACF allocation	1				
R15	Late release of DACF funds, Late completion of projects, Abandoned projects	1			1	1
	<b>FREQUENCY</b>	<b>12</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>3</b>
	<b>PERCENTAGE</b>	<b>54.5%</b>	<b>18.2%</b>	<b>9.1%</b>	<b>4.5%</b>	<b>13.6%</b>

Q10	Can you suggest ways for improving the delivery of Building Construction Projects financed by DACF?	Regular fund release	Monitoring and evaluation	Early fund release
R1	Regular release of DACF within the plan period	1		
R2	The releases should be adequate and released on time, Effective Monitoring		1	1
R3	If there is regular and constant flow of funds it will improve it, There should be local sovereign guarantee for DACF projects, where the Government arranges with some banks to give such projects constant flow of money so as and when certificates are raised it will be honored, Regular monitoring and evaluation, Completion of projects before new projects are awarded against the same source of DACF	1	1	
R4	There should strict measures to ensure that the projects is completed as required.		1	
R5	The guideline should not give room to award too much projects the fund cannot cater. The guideline should be specific to the number of projects, Assembly should awards projects they could be able to complete within some specific period, DACF funds should be released on time		1	1
R6	Award a project you can complete within a specific time.			1
R7	Assemblies should submit work plans before DACF allocations is released, and be monitored to make sure it is followed		1	
R8	If DACF is released on time, and contractors paid as the need arise.			1
R9	The criteria to which DACF is located to the Assembly should be reviewed , DACF should be release as required			1
R10	Early release of DACF, Increase in allocation of DACF for MMDA's, There should be local input in the guideline for the utilization of DACF			1
R11	DACF should be released on time			1
R12	Early release of DACF			1
R13	Release of DACF on time			1
R14	Release of DACF as scheduled			1
R15	Early release of funds and increase in DACF			1
<b>FREQUENCY</b>		<b>2</b>	<b>5</b>	<b>11</b>
<b>PERCENTAGE</b>		<b>11.1%</b>	<b>27.8%</b>	<b>61.1%</b>