

UNIVERSITY OF KWAZULU-NATAL

**The role of ICT in enhancing transparency in public funds management in the
Democratic Republic of Congo**

By

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ACRONYMS

ASADHO	Association Africaine de Defense des Droits de l’Homme
BCC	Banque Centrale du Congo
CDLS	Computerised Driver’s License System
CDP	Gross Domestic Product
CEAS	Capability, Empowerment, Applicability and Sustainability
CEEAC	Communaute Economique des Etats de l’Afrique Central
CEPGL	Communaute Economique des Pays des Grand Lacs
CES	Capability, Empowerment and Sustainability
CIELC	Independent Commission on Ethics and the Fight Against Corruption
CIF	Cost Insurance and Freight
CII	Centre Informatique Interministeriel
CMVRS	Computerised Motor Vehicle Registration System
COMESA	Common Market for Eastern and Southern Africa
DANIDA	Danish International Development Agency
DGDA	Direction Generale des Douanes et Accises
DGI	Direction Generale des Impots
DGRAD	Direction Generale des Recettes Administratives et Domaniales
DPMER	Direction Provinciale de Mobilisation et Encadrement des Recettes
DRC	Democratic Republic of Congo
E-Budget	Electronic Budget
E-Government	Electronic Government
E-Payment	Electronic Payment
E-Procurement	Electronic Procurement
E-Taxation	Electronic Taxation
eTransparency	Electronic Transparency
FPI	Fonds de Promotion de l’Industrie
ICT	Information and Communication Technology
ICT Policy	Information and Communication Tecnology Policy
ICT4D	Information and Communication Technology for Development
IT	Information Technology
iTax	Integrated Tax Administration System
LAN	Local Area Network

MPR	Mouvement Populaire de la Revolution
MS	Microsoft
NGO	Non-Government Organisation
OCC	Office Congolais de Control
OGEFREM	Office de Gestion du Fret Multimodal
ONATRA	Office National de Transport
PEODESY	Integrated Payroll and Human Resources System
SADC	Southern African Development Community
SIDA	Swedish International Development Agency
SMS	Short Message Service
SQL	System Query Langage
TA	Tax Administration
TIN	Taxpayer Identification System
TRA	Tanzanian Revenue Authority
TV	Television
UK	United Kingdom
UN	United Nations
USAID	United States Agency for International Development
VAT	Value Added Tax

ABSTRACT

ICT includes any communication device namely radio, television, cell phones, computer, and satellite systems that retrieve, store, manipulate, receive, or transmit information electronically in digital form. Transparency refers to openness and honesty, and is considered as a pillar of good governance. ICT is actually applied for the purpose of increasing efficiency, citizen participation and transparency in government procedures and functions. Using the Capabilities, Empowerment, and Sustainability (CES) Model, this research investigates how ICT can be used to enhance transparency in public funds management in the DRC. It investigated processes in place for public funds collection and allocation; identified the challenges related to the implementation of ICT for improving transparency in public funds collection and allocation; and establishes the determinants of ICT for transparency in public funds management. At the national level, interviews were conducted with government officials from the National Ministry of Finance and the National Ministry of Budget. At the Provincial level, interviews were conducted with government officials from the Provincial Ministry of Finance and the Provincial Ministry of Budget and tax officials from the institutions that are concerned with funds collection (DGRAD, DGI and DPMER). Findings revealed that there are few mechanisms in place to ensure transparency in public funds collection and ICT is not used in public funds collection and allocation. Further, findings revealed that the challenges of using ICT for public funds collection and allocation are political, socio-economic and technical. In addition, findings revealed that there are lack of mechanisms to ensure the implementation of ICT in public funds collection and allocation and the barriers of using ICT in public funds collection and allocation were presented. Furthermore, findings revealed that there is a lack of formal mechanisms to inform the community about the taxes and ICT is not used in any process of paying taxes within the community. The barriers of using ICT in the community were presented and solutions were provided to ensure the use of ICT for public funds management. This research suggests a framework for the adoption of ICT to enhance transparency in Public Funds Management in the DRC.

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CHAPTER 1: INTRODUCTION

1.1. Introduction

Corruption is an obstacle to the effectiveness of service delivery in many countries (Anderson, Recanatini et al. 2004). Corruption is a barrier to development as it restricts the provision of services to the population (Campos, Estrin et al. 2010). It can take many forms such as the case of government officials requesting bribes from citizens for service delivery (Moran 2001, Morris 2011).

In a country where state capacity has been destroyed and where everything needs and deserves urgent attention, the government has the unenviable responsibility of making hard choices about programs and actions that create an enabling environment for development and prosperity. The major urgent development programs that the government can make in practice are rebuilding infrastructure, schools and hospitals, rehabilitating agriculture, revitalising the economy and creating jobs. However, none of these urgent actions can be implemented if minimum security is not ensured, if the administration is not at all able to provide the basic services that people have been deprived of for years, if there is no clear strategy for economic development, if state institutions are not able to effectively manage the most important economic sectors like mining, agriculture, forestry, tax collection and administration, and manage revenues, development will be slowed.

Corruption in the DRC is not new. It finds its origins in the very model of management of the independent state of the Congo, where an individual could take advantage of immense wealth that abounds in the Congo Basin, to the detriment of its protectorate (Kodi 2007, Kodila Tedika 2013). No progress can be made if acts of corruption, as well as all kinds of crimes and human rights violations continue to be perpetrated with impunity, and if these behaviours continue to be the norm because of a corrupt and poorly functioning justice system.

However, in order to handle the corruption issues, many countries have already adopted ICT as a mean to improve transparency using E-procurement, E-taxation, E-governance and SMS systems (Chêne 2012); but, in the DRC, paper based systems are still in use which allow direct human interaction between the authorities and the citizens for acquiring any service to the government and hence open the gates to corruption. The DRC does not effectively use ICT for tax collection and budget execution, and the management is hence characterised by a lack of transparency.

Many researchers have considered ICT as a tool to fight corruption by increasing transparency

through automation of human labour, prevention and detection of corrupt behaviour, amongst others ((Torero and Von Braun 2006, Spider 2011). It is in this context that this research investigates the potential use of ICT to increase transparency in public funds management in the DRC. The Capability, Empowerment and Sustainability model (CES) was adopted to assess the role that ICT can play to enhance transparency in public funds management. Using the interviewees' responses from the National Ministry of Finance and the National Ministry of Budget at the national level; from the Provincial Ministry of Finance and the Provincial Ministry of Budget, the DGDA (General Directorate of Customs and Excises), the DGI (General Directorate of Taxes), the DGRAD (General Directorate of National and Administrative Resources) and DPMER at the provincial level, and the Interviewees' responses from the civil society representatives at Fizi, Uvira, Waluungu and Kabare territories, at the local level, this study investigated how ICT could be used to enhance transparency in Public funds management in the DRC. The study developed a framework to guide the implementation of ICT in public funds collection and allocation, after identifying the mechanisms for funds collection and allocation in the DRC, the challenges in ICT implementation, the use of ICT for public funds collection and allocation, use of ICT to address issues related to transparency and accountability in public funds collection and allocation, and the public perceptions of using ICT as a mean to address transparency and accountability issues in the DRC.

1.2. Background to the Study

The DRC has suffered a long period of war; this has led to the lack of good governance, poor management of resources, corruption and repeated political crises (Nelson 2013). According to CPI (2015), DRC is the 19th of the 20 most corrupt countries worldwide, and the factors that influence corruption in the country include poor governance, weaknesses in the functioning of government institutions and lack of media independence.

Witness (2004) highlighted that, in the DRC, Customs and excise administration is characterised by poor equipment and infrastructure, and customs officials provide services, in declaration of goods, which should be paid at a government fixed amount but at times are paid at lower price and sometimes escape the payments.

In the DRC, citizens are poorly informed about legitimate fees payable and subsequently, a large portion of the population is also uninformed about their own rights (Freedom House, 2010). The collection of taxes does not consider the accountability of the tax officials to the citizen and in this regard, taxes are collected informally and do not follow the legal norms (Freedom 2009).

In addition, the country has minerals and shares borders with different countries like Burundi, Rwanda, Tanzania, Angola, Congo Brazzaville, Uganda, Central African Republic, Sudan, and the Republic of Zambia and there are business exchanges between all these neighboring countries. Further, to improve efficiency in funds collection and allocation and combat fraud, the Government of the DRC has established some measures such as the improvement of key public services namely DGDA (General Directorate of Customs and Excises), DGI (General Directorate of Taxes), DGRAD (General Directorate of National and Administrative Resources) and other services implemented for collecting funds.

According to Chêne (2012), ICT implementation, which takes into consideration of various stakeholders such as government officials and civil society, can be an important tool for transparency and accountability, and assist in combating corruption in funds collection and allocation. In addition, Zinnbauer (2012) indicated that ICT can be used in many ways to enhance transparency in public funds management. It can establish a transparent information communication flow between government officials and citizens. These factors have the potential for improving transparency in funds collection and allocation. However, in the DRC, funds are still largely managed manually which opens up room for corruption, bribery, fraud, and other related practices that impact negatively to the wellbeing of the citizens (Gjerstad 2007). Additionally, there are limited ICT facilities to manage and make information available regarding funds collection and allocation (Chatama 2013). Therefore, implementation of ICT for public funds collection and allocation is most important to ensure transparency in public funds management in the RDC.

1.3. Research Problem

The problem of poverty is linked to corruption at institutional level in developing economies (Carballo 2010). According to Gupta, Davoodi et al. (2001), corruption affects the poorest and most vulnerable disproportionately, increases costs and reduces access to services such as health care and education. Hence efforts must start and be targeted at this level to rid developing economies of corruption. A country that is afflicted by corruption cannot maximise the potential of its citizens. Corruption affects all facets of the economy, society and political existence of a country, leading to underdevelopment (Faisal and Jafri 2017). Endemic institutional corruption in Africa is increasing (Uneke 2010). According to Manzetti (2014), corruption worsens poverty and exacerbates inequality as resources are diverted from the poor and the underprivileged. In addition, corruption compromises future generations by depriving children and young people

of resources for development in developing economies. Strengthening governance and reducing corruption are thus key elements in achieving the desired development in developing economies (Grindle 2004).

According to Renn, Webler et al. (1993), transparency is the principle according to which the decision makers concerned can understand the facts and figures resulting and the process that resulted in those decisions. Transparent governance means that public officials act openly, knowing that their decision-making is visible to the citizens. A clear sense of organisational responsibility and the assurance that governments are efficiently managed and free of systemic corruption are important components of a transparent government. The notion of public scrutiny, participation and accountability is closely connected with the concept of access to information (Rosair and Taylor 2000). In general, the information gap in developing economies is likely to be reduced by e-government solutions, which allow citizens to become more aware of the policy process, by providing access to information and services.

In practice the right of access to information is however purely formal if the citizen cannot critically interpret the contents to generate a knowledge of a specific fact and thus participate and intervene in the public arena sufficiently. Countries have made claims for different reasons to pursue the targets of sustainability and have chosen various solutions, in particular to adopt measures aimed at reducing corruption and bribery in all its forms. Many have taken advantage of ICT as a means of increasing government transparency and reducing corruption. The development of a global information era, which is fostered through extensive internet access, has helped to raise awareness of the difficulties or shortcomings of traditional political actors as well as of decisions and representative institutions, including in remote and developing regions (Dahlgren 2005). Thus, E-government technologies can assist to limit discretion and hence curb arbitrary opportunities for corruption. It increases the chances of exposure by keeping detailed data on transactions, allowing the corrupt to be tracked and linked to their wrongdoing.

However, there are many cases of corruption reported in DRC. Many mechanisms, including administration reform and law enforcement, were put in place but corruption is still reported at a higher level, especially in public funds management. There are many sources of public funds in the DRC. Despite all the funds collected in the country, the citizens are still living a lower standard of life compared to other countries with the same national revenues or with the income less than what is collected in the DRC. This is a consequence, in part, of poor service delivery. In 2017, the DRC was ranked 161 of 180 most corrupt countries in the world, according to the report of Transparency International (Thirlwall and Pacheco-López 2017).

In an attempt to address issues, the government has put in place mechanisms for improving transparency in public funds collection and allocation. These include President Kabila's initiative called "Tolerance Zero", administrative reforms and law enforcement. MinisteredelaFonctionPublique (2009) provided the resolutions to fight corruption in the DRC. The following are the resolutions of this forum: to establish the National Council of Ethics, an advisory body for technical advice on the moral integrity of personalities called to perform high office; to create the Independent Commission on Ethics and the Fight Against Corruption (CIELC); to create a government agency for the fight against corruption, with substantial resources; to organize the synergy of the control and anti-corruption bodies to organise a national extension campaign of Decree-Law No. 017/2002 of 03 October 2002 on the Code of Conduct of the Public Agent; to deposit the instrument of ratification of the United Nations Convention against Corruption, and to ratify the African Union Convention on Preventing and Combating Corruption, as soon as possible, as well as the international signature and agreements to strengthen mutual legal assistance; to elaborate, adopt and promulgate a decree related to the Declaration of the assets of the Public Agents; to improve the wages and conditions of work of the Public Agents in order to protect them from precariousness and corruption; to apply positive and negative sanction in all areas of public life; to accelerate reforms of state structures; to prosecute strongly and punish all those responsible for corruption at all levels and to declare a national anti-corruption day in the DRC. These resolutions were taken as the main strategies for improving transparency and accountability in Public funds management in the DRC. Unfortunately, the implementation was not effective. Also, these initiatives are minimally reliant on ICT, and there was little indication that the government planned to fully integrate ICT into the battle against corruption. While ICT is used in many countries as a useful mechanism to entrench and ensure transparency, this was not the case in the DRC. It is possible that the introduction of eTransparency measures in the DRC would lead to a decline in corruption, and improve the utilisation of public funds to the benefit of citizens. In the DRC, transparency in public funds management is considered the domain of law enforcement and administration reform alone. The use of ICT to enhance transparency in Public Funds Management in the DRC is seldom mentioned. It is apparent that DRC does not have a suitable technological mechanism for ensuring transparency in public funds administration. Hence, this research advocates the applicability of ICT in collecting and allocating public funds. It sought to find out from national, provincial and local perspectives, the prospects of using ICT, what it entails for ICT to be implemented as a tool for transparency in public funds management and the approach (framework) that should be adopted for effective utilisation of

ICT for transparency in public funds collection and allocation.

Thus, this study investigated how ICT could be used to promote transparency in public funds collection and allocation in the DRC, and proposed a framework for the adoption of ICT in public funds management in the DRC.

1.3. Research Objectives

- To investigate processes in place for public funds collection and allocation;
- To investigate the use of ICT for public funds collection and allocation;
- To identify the challenges related to the implementation of ICT for improving transparency in public funds collection and allocation;
- To establish the determinants of ICT for transparency in public funds collection and allocation;
- To develop a suitable framework for the implementation of ICT for public funds collection and allocation

1.4. Research Questions

The main research question for this study is: How can ICT be used to enhance transparency in public funds collection and allocation in the DRC?

This question leads to the following questions with their subsequent questions:

- 1. *What are the current mechanisms in place to ensure transparency for funds collection and allocation in the DRC?***
 - What are the strategies currently used to collect and allocate public funds in the DRC?
 - Is there any policy used to address the issue of transparency in public funds collection and allocation in the DRC? How can its application be ensured?
- 2. *How is ICT used currently to collect and allocate public funds?***
 - What are the ICT tools being used for Public funds collection and allocation?
 - What is the current plan for ensuring the use of ICT in public funds collection and allocation?
- 3. *What are the challenges related to the implementation of ICT for funds collection and allocation?***
 - What are the problems related to the use of ICT in public funds collection and allocation?
 - What are the opinions of the personnel to the introduction of ICT in public funds collection and allocation?

4. *What are the determinants of ICT for transparency in public funds collection and allocation?*

- What are the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation?
- What are some of the activities undertaken as part of the mechanism (s) highlighted above?
- Can ICT-led tools be better for ensuring transparency in public funds collection and allocation than the actual mechanism (s)?
- What are the barriers to using ICT for public funds collection and allocation?

5. *What are public perceptions of using ICT as a mean to address transparency and accountability issues in public funds collection in the DRC?*

- What are the formal processes for paying taxes within the community?
- What are the mechanisms in place to inform the citizens about the taxes?
- What are the barriers to using ICT for public funds collection in the community?

1.5. Theoretical framework underpinning the study

This study applied the Capability, Empowerment and Sustainability model (CES) (Grunfeld 2011), a revised version of the Capability approach model, as the guiding theoretical framework. It assessed the role that ICT implementation in selected public sectors can play to enhance transparency in public funds management. This approach allowed the researcher to assess how ICT capabilities would empower public funds collectors and allocators to manage such funds in a transparent way. The CES is built of the following components: Capabilities, Empowerment and Sustainability. In this study, Capabilities was considered in order to identify the current use of ICT to collect and allocate public funds and the challenges related to the implementation of ICT for public funds collection and allocation. The point of departure of this research is the assumption that in order to organise and maintain the collection and allocation of funds, ICT should be put in place as a mechanism to ensure transparency in funds collection and allocation. The Empowerment construct is built on the ICT-led tools that are used to ensure public funds collection and allocation. The Sustainability construct was considered to ensure the use of ICT in public funds collection and allocation. This implies the monitoring and maintenance of ICT-led tools and ensure that the government officials and citizens are willing and able to use these tools for public funds collection and allocation.

1.6. Methodology, Data Collection and Analysis Techniques

This study adopted an exploratory design methodology. The qualitative approach was considered due to the nature of the study. A purposive sampling technique was adopted to select the sample. Interview guides were used as research instruments because data was collected through interviews. Data was analysed using Nvivo software for qualitative statistical analysis, and it was collected at three levels, namely, National level, which includes the National Ministry of Finance and the National Ministry of Budget; provincial level, which includes the Provincial Ministry of Finance and the Provincial Ministry of Budget and the Institutions concerned with funds collection (DGDA, DGI, DGRAD and DPMER); and at the local level, it included the civil society representatives of the territories of Fizi, Uvira, Walungu and Kabare. The total number of the respondents was 16, two respondents at the national, ten respondents at the provincial level and four respondents at the local level.

1.7. Significance of the Study

To the best knowledge of the researcher, this research is a pioneering study that investigates the potential use of ICT to enhance transparency in public funds management in the DRC. Thus, findings from this study and the framework that was derived from it would guide various stakeholders in funds collection and allocation in terms of implementing ICT-led solutions to address the shortcomings related to lack of transparency. Thus, it is anticipated that the study's recommendations, if considered may have a positive impact in addressing funds mismanagement in the public sector, thereby contributing to the country's economic gains.

1.8. The Outline of the Study

This study is organised into 8 chapters: Chapter 1 is the Introduction of the Study, Chapter 2 is the Study's context, Chapter 3 is the Literature Review and Chapter 4 presents the Theoretical Framework applied in the study, Chapter 5 concerns the Research Methodology and Chapter 6 presents the Data Analysis, Chapter 7 is concerned with the Discussion of the analysis results, and Chapter 8 presents the conclusion and recommendations.

1.9. Summary of Chapter 1

This chapter is the introductory party of this research. In this chapter the background of the study and the problem statement was emphasized. The purpose of the study, which is to determine how ICT can be used to enhance transparency in Public funds management in the DRC, was highlighted. The research objectives and their related research objectives were highlighted. Further, the chapter highlighted the methodology that was used for this study; this research as an exploratory design and adopted the qualitative study with the purposive

sampling. It also described briefly the respondents from the three levels (national, provincial and local) of the study. Furthermore, the chapter highlighted the data collection and data analysis procedures that were used in this study. It was also highlighted that this study, as a pioneering study that investigates the potential use of ICT to enhance transparency in public funds management in the DRC, contributes significantly to the effective management of public funds. Thus, the framework that derived from this study demonstrated how ICT can be used to enhance transparency for funds collection and allocation in the DRC, thus reducing corruption and fraud.

CHAPTER 2: THE STUDY'S CONTEXT

2.1. Introduction

This chapter presents the study environment and context. All the sites concerned with the study are presented and highlighted. The Public Funds Management process is detailed, including the procedure for funds collection and allocation. It is highlighted that the procedure for funds collection is almost the same with the procedure for funds allocation but the difference is on how the process is handled. This chapter also describes the funds allocation process at the provincial level and the control mechanisms in the DRC, the budgetary resources and charges, and the anti-corruption mechanisms in the DRC.

In addition, this study was conducted at the national, provincial, and local levels. At the national level, the National Ministry of Finance and the National Ministry of Budget were considered as they are respectively managing the collection and allocation of public funds. At the provincial level, the province of south kivu was considered based on the geographical position and the possibility of the researcher to attend this province; and at the local level, four (4) among the eight (8) territories of the south kivu province namely Fizi, Uvira, Walungu, and Kabare were selected based on the possibility of the researcher to reach the civil society representatives as the considered respondents, depending on the road conditions and insecurity.

2.2. The Democratic Republic of Congo

The DRC is a sovereign state, independent and democratic (Cornevin 1970). The official language is French and its national languages are Kikongo, Lingala, Swahili and Tshiluba (Bruneau 2009, Makita 2013). DRC, a former Belgian colony, has been independent since 1960 (Nguya-Ndila 1971). Its current political and administrative organisation is defined by the constitution of 2006 which proclaims the united and indivisible character of the Republic with decentralisation as a mode of State management (Yetilo 2010). It establishes two levels of exercise of state power: the central power and the province within which more decentralised territorial entities that are the city, the commune, the sector, and the chieftaincy as well as of other administrative units such as sub counties without legal personality (Kabamba 2015). The Democratic Republic of Congo has an area of 2345000 km² with an estimated population of 86 million and shares 10744 km of borders with, the Central African Republic and South Sudan in the North, Zambia in the South East and Angola in the South; Uganda, Rwanda, Burundi and Tanzania in the East; and Congo Brazzaville and Angola in the West (Bruneau 2009). The

Democratic Republic of Congo is composed of 26 provinces, 170 cities, 145 territories, 263 communes, 261 chieftaincies and 473 sectors (Englebert 2012), and the sectors and chieftaincies are also subdivided into sub counties and villages. The DRC is composed of Bantu, Sudanese, pygmies and Nilotic (CEJP 2017). According to TradingEconomics (2017), the Congolese trade balance in 2016 was in deficit. The unemployment rate was 43%, according to the estimation of the Congolese Government in 2014 (TradingEconomics 2017). The DRC is a member of the Economic Community of African Great Lakes Countries (CEPGL), the SADC, COMESA and the CEEAC. Paradoxically, the DRC has many valuable natural resources but with a low human development index.



Figure 1: Map of the DRC (CEJP 2017)

2.3. Profile of the South Kivu Province

The province of South Kivu covers an area of 64,851 km², with an estimated population of 7278089 (INS 2019), according to the Provincial Government of the South Kivu (Balagizi, Ngendakumana et al. 2013). The South Kivu is divided into eight territories, four of which were selected in this study due to location. South Kivu has served as a gateway to the various wars of aggression that the country has known and whose consequences are still significant on the socio-economic life of the province (Lumami, Muyisa et al. 2016). The South Kivu province is dependent on other provinces and neighboring countries to ensure the food security of its population (Kabamba 2015). Most industries have been looted, destroyed and closed and the Province of South Kivu is experiencing several problems for the revival of its economy, the most notable of which is the persistent insecurity in the rural areas due to the presence of the uncontrolled armed gangs (Ansoms and Marivoet 2009)



Figure 2: Map of the South Kivu Province (CEJP 2017)

2.4. Profile of the Territory of Fizi

The territory of Fizi is a decentralised entity of the province of South Kivu. It has an estimated population of 1 million (CEJP 2017). The main activity in this territory is agriculture followed by fishing and mining (Ansoms and Marivoet 2009).

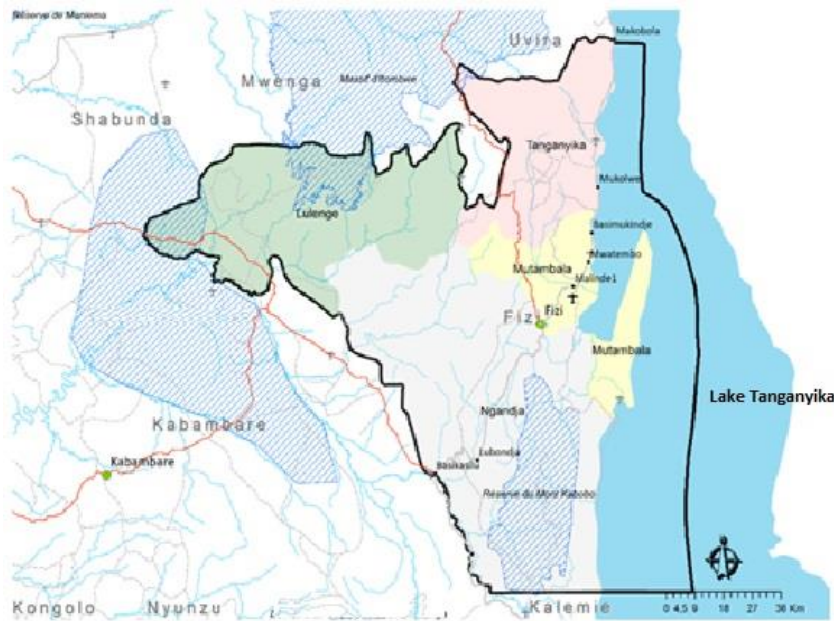


Figure 3: Map of the Territory of Fizi (CEJP 2017)

2.5. Profile of Walungu Territory

According to CEJP (2017), the territory of Walungu is subdivided into two chiefdoms: Ngweshe Chiefdom and Kaziba Chiefdom. In addition to mining and agriculture this region has significant hydroelectric potential (Ndjadi, Nna'ka et al. 2017).



Figure 4: Map of the Territory of Walungu (CEJP 2017)

2.6. Profile of the territory of Kabare

The Territory of Kabare was officially established in 1923 and includes two chieftaincies, namely: the chieftaincy of Kabare (with 14 groups) and the Nindja chieftaincy (with 3 groups). Agriculture, livestock, fishing and quarrying are the major economic activities in the region (CEJP 2017). Its population is estimated at 535.114 habitants (Ganza, Cirezi et al. 2019).

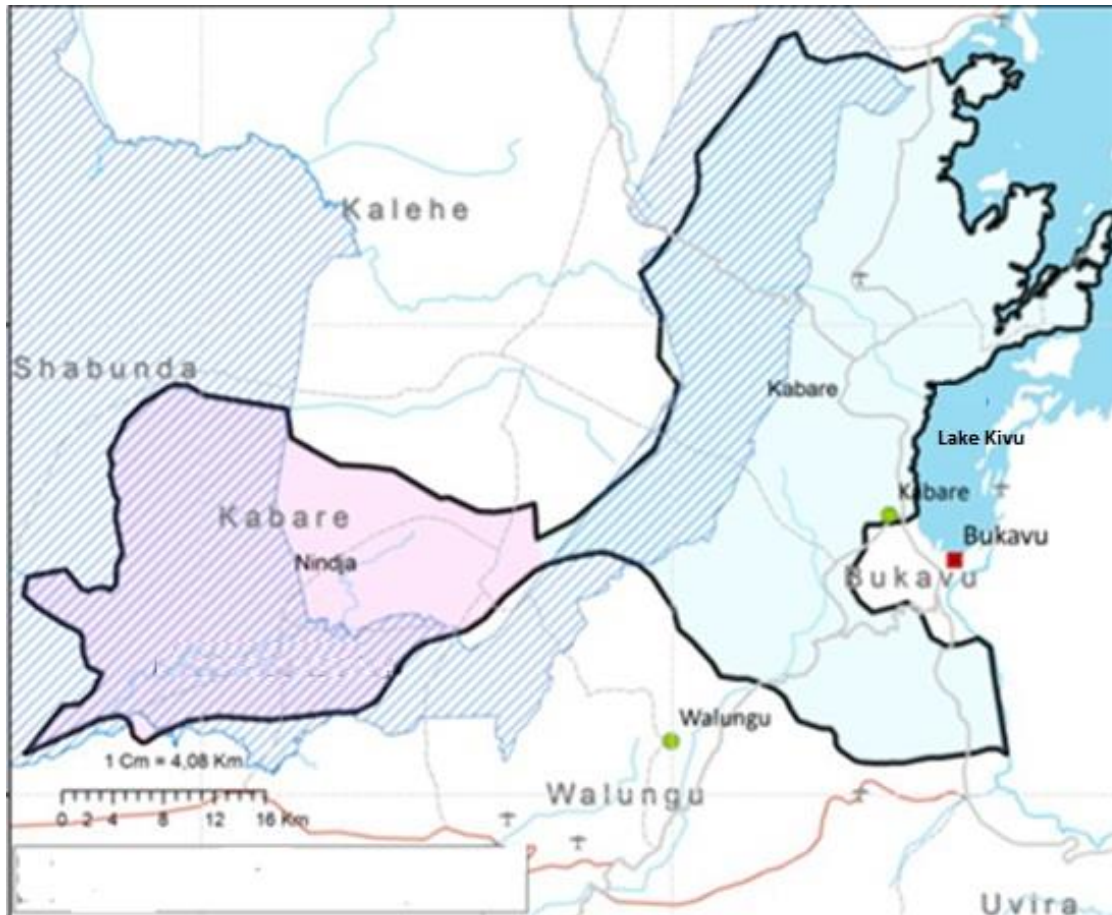


Figure 5: Map of the Territory of Kabare (CEJP 2017)

2.7. Profile of the Territory of Uvira

According to CEJP (2017), the territory of Uvira has an estimated population of 11 million. The region contains rich mineral resources and the main economic activities are agriculture, small and large trade, sale of agricultural products, fishing and livestock (Ansoms and Marivoet 2009).

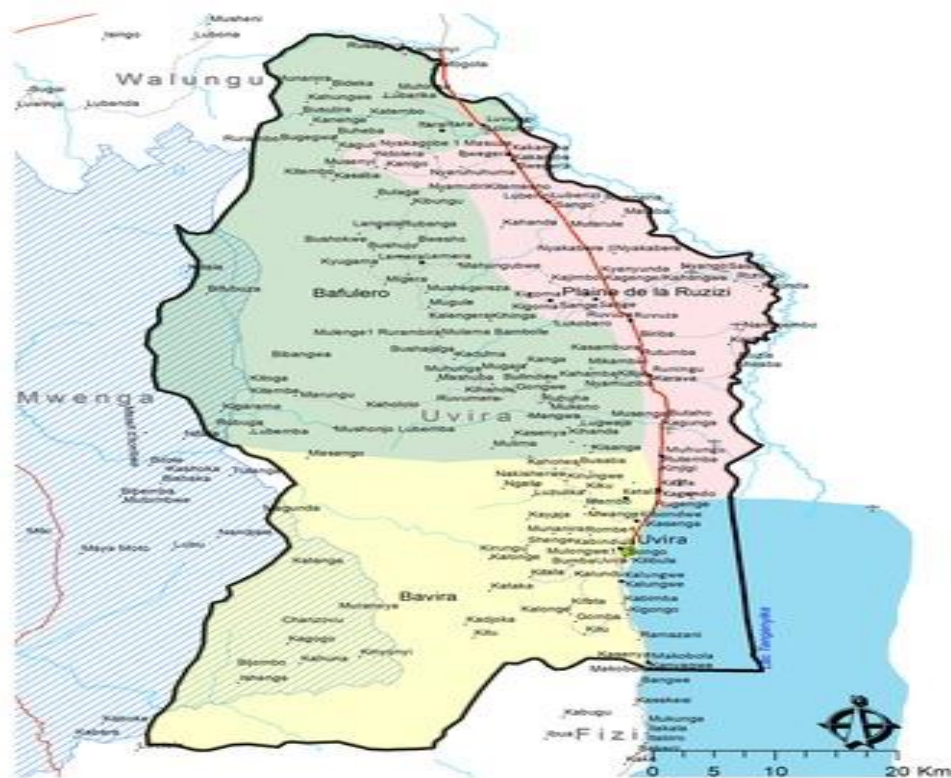


Figure 6: Map of the Territory of Uvira (CEJP 2017)

2.8. Public Funds Management in the DRC

In the DRC, public funds are managed at three levels: national, provincial and local levels. At the national level, public funds are managed by the central government, the provincial government and the Decentralized Territorial Entities which are the Municipality (Mairie), Township (Commune) and Sector/Chieftaincies (Secteur/Chefferie) (Ministère des Finances 2011). All these local entities have the autonomy to collect and allocate the funds independently, based on their local needs and/or budgets.

Tsurukawa, Prakash et al. (2011) listed agencies responsible for tax collection in the DRC including DGDA (Customs Authority), DGI (Tax Authority), DGRAD (General Direction of Administrative Incomes), FPI (Industrial Incentive Fund), OCC (Import and Export Control Agency), OGEFREM (Office of Maritime Freight Management) and the ONATRA (National Office of Transportation). However, according to Bietenhader and Bergmann (2010) the tax regime of the DRC is underdeveloped and a third of revenues consists of customs and excises revenues, which is considered the largest contributor. Tax revenue in the DRC as a share of the GDP, are among the lowest in the DRC (Bietenhader and Bergmann 2010). They highlighted the need to enhance transparency and efficiency in the administration of taxes and to increase supervision over revenue authorities at provincial level.

Formally, public funds consist of revenue from the State, taxes and duties, and loans (Malele

Mbala and Karsenty 2010). Public revenue is therefore mainly constituted by taxes, state revenues, administrative revenues, customs duties, royalties, miscellaneous income from different administrative divisions. In addition, public expenditure is mainly financed by taxes (Englebert 2012). The tax takes various forms: income tax, turnover tax, Value Added Tax, customs taxes and other revenue collection mechanisms (Karsenty 2006). It provides most of the revenue that is introduced into the public sector of the economy. Taxes are generally the main source of funding for the state (Englebert 2012). The tax remains a compulsory levy and imposed by the authority on taxpayers, according to their ability to contribute to the achievement of objectives set by the public authorities (Malele Mbala and Karsenty 2010). The administrative and state revenues are collected by the General Directorate of Administrative, National and Participation Revenue (DGRAD) (Mbala and Karsenty 2010). Customs revenue are collected on goods crossing borders. The collection of these funds is the domain of the Directorate General of Customs and Excise (D.G.D.A), and other taxes are collected by the Directorate General of Taxes (DGI), but at the provincial level, every province has its service or institution concerned with the provincial taxes (Melmoth 2007, Mbala and Karsenty 2010).

2.8.1. Public Funds Collection Procedure

According to the Ministère des Finances (2011), revenue collection and payments follows the following steps:

Commitment (Engagement)

It is a phase during which the generating department makes sure of the existence of the facts likely to be generating a claim for the benefit of the Treasury of the State.

The liquidation

It is an operation which consists of the revenue generating service to determine the amount to be paid by the taxpayer to the State, for example, the tax rate. This is actually the calculation of the amount to be paid by taxpayers, the tax rate to the established bases of taxation.

The Authorisation

Authorisation is an ex-post control of recognition and liquidation of transactions. As an important phase in the execution of a tax payment, it consists first of all in a regularity and conformity check of all the operations of recognition and liquidation of the recipe. Then, the order is given to the financial stakeholder to collect the debt of the State, using the document called Perception Note.

Payment

This operation consists of collecting the sums due to the State after the completion of the formalities of recognition, liquidation and authorisation.

The first two phases (commitment and liquidation) go back to the assessment service (actor), while authorisation and payment are the responsibility of the authorising department, the DGRAD, DGI, and DGDA in specific cases.

The current procedure for the collection of fees, taxes and royalties due in respect of administrative, judicial, public and participatory revenue derives from the following texts:

- Decree No. 007/2002 of 2 February 2002 on the method of payment of debts to the State;
- Order No. 076 / CAB / MIN / ECO-FIN & BUD / 2002 implementing measures of Decree 007/2002;
- Ministerial Circular No. 002 / CAB / MIN / ECO-FIN & BUD / 2002 of 11 February 2002 on the method of payment of debts to the State.

According to these texts, the taxpayer obtains a collection note from the competent services (DGRAD, DGI, DGDRAD), in which is entered the amount of fees due. The taxpayer presents himself with the collection note at the counter of the central bank, a commercial bank or an approved financial institution, or from the accountant assigned to the financial management or ETD at the local level where the banking institutions are not represented; the bank gives the taxable person as proof of payment: an installment slip and payment certificate for payment in cash; a debit notice and a payment certificate for payment by bank transfer; and the perception note issued by the bank.

2.8.2. Public Funds Allocation Procedure

According to the Ministère des Finances (2011), the Funds allocation is devoted to the analysis of the stages through which a public expenditure passes. Thus, in accordance with the General Regulation on Public Accounting, the procedure for executing public expenditure is structured around four stages each having a different purpose. The first three stages, namely; the engagement (commitment), the liquidation, and the authorisation constitute the administrative phase. The last step which is that of payment constitutes the accounting phase. The following are the six stakeholders that directly execute these four steps:

- Credit Manager: For provisional commitment and liquidation;
- The Directorate of Budgetary Control: for control of the regularity of the commitment and the liquidation;
- The Minister of Budget (Minister's Office) or his delegate: for the validation of commitments and liquidations;

- The Treasury and Authorisation Department: for verification of the elements of the liquidation as well as for ordering and the publication of the Computerised Payment Orders (OPI);
- The Minister of Finance (Minister's Office) or his delegate: for the validation of the orders;
- The Central Bank: for disbursement of funds or bank transfer;
- The Principal Public Accountant: for the payment.

Below are the four (4) steps in the implementation of a Public Expenditure in the DRC:

Commitment (Engagement)

The commitment of a public expenditure is made by the Credit Manager. In the exercise of his budgetary responsibilities, he is assisted by the Sub-Credit Manager who is an official of the Ministry of the Budget assigned to the expenditure service. The Credit Manager instructs the Sub-Investment Manager for the preparation of the file and the establishment of the Commitment Voucher. The Commitment Voucher is the unique commitment document. Any use of another document is prohibited. The commitment voucher books are pre-printed with serial numbers and cannot be edited using computer. The Commitment Voucher is multi-imputed, so that it can equally well be used for a single transaction or for several expenses of a different nature for the same section, the same chapter, and for the benefit of the same beneficiary or for the same accounting code (Ministère des Finances and Ministère de Budget 2010).

The Sub-Credit Manager physically transmits the file to the Credit Manager. He signs the Commitment voucher. In the context of the computerisation of the expenditure departments, the Sub-Credit Manager within the institutions, ministries and other public services of the State, will accept the file approved by the sector manager and bring it to the Reception Pool of the Budget Control Department (DCB).

Liquidation

According to the Ministère des Finances and Ministère de Budget (2010), the purpose of the liquidation of public expenditure is to verify the reality of the debt and to determine the requested amount. It is made in the light of the documents to establish the acquired rights of creditors. The liquidation of a public expenditure brings together two distinct and complementary operations: the verification of the reality of the debt, which means the recognition of the achieved service and the determination of the amount of the expense. The liquidation is carried out by the Credit Manager. It is confirmed at the Budgetary Control Department by the issue of a liquidation sticker. In view of the contract letter, the supplier

delivers the goods ordered to the Credit Manager or performs the service. If the delivery is partial, the commitment must be modified by the Credit Manager at the Budget Control Department (Ministère des Finances 2011). The Credit Manager can either re-enter a commitment request for a smaller amount. If the Credit Manager has nevertheless accepted the partial delivery, he has the obligation to reduce the amount of the commitment to allow the Authorising Officer-Delegate to authorise, otherwise the rejection of the payment.

The Credit Manager signs the final invoice with words "service done" instead of a receipt for small repairs or small supplies, the amount of which does not exceed the threshold set by the regulations. The service-made certification is countersigned by the Budget Controller.

In view of the certified invoice "service done" in the case of a delivery or service, the Sub - Credit Manager completes the part of the sticker reserved for the payment request. The scanned Commitment voucher is brought to the Reception Pool of the Budget Control Department to be attached to the file.

The file is sent to the Liquidation Unit of the Budget Control Department.

The liquidation officer enters the additional information in particular:

- The date of liquidation and the liquidation authority;
- The number and date of the final invoice;
- The references of the order letter (date, number, object, amount);
- The references of the report of reception.

The unit of the Budget Control Departments edits the provisional liquidation listings to be sent to the Minister of the Budget via the Director of Budget Control as well as the rejection listings (Ministère des Finances and Ministère de Budget 2010).

Authorisation

According to Ministère des Finances and Ministère de Budget (2010), authorisation is the administrative act giving, in accordance with the result of the liquidation, the order to pay. It is therefore the signature of the payment order and not the transfer order of the payment documents to the Central Bank of the DRC. At the end of the liquidation, the Budgetary Control Department, in view of the certified "service done" invoice including supporting documents, transmits the expense file to the ordering control pool via the secretariat of the Authorising Officer-Delegate who immediately edits the acknowledgment of receipt discharging the Directorate of Budgetary Control. The Authorising Officer-Delegate Control Pool checks the formal regularity before ordering. To do this, the expense file is called on the screen by one of the controllers designated according to the work plan (the file number is on the sticker). This action allows the controller to identify itself to the folder. The controller cross-checks the

number of documents relating to the commitment voucher against those originally entered, and additionally collects the new documents in support of the liquidation. At the end of this check, the expenses file can be rejected or accepted (Ministère des Finances 2011). If the expenses file is accepted, the controller of the authorisation validates, one by one, the files whose liquidation is strictly in accordance with the commitment.

Payment

Payment is the act by which the state frees itself of its debt. This operation is carried out by the Central Bank of the DRC or the Public Accountant of Expenses. The Central Bank of the DRC receives the computerised payment orders (OPI) issued by the Treasury and Authorisation Department. It organizes the payment of the expenditure according to the modalities defined in the computerised payment order. It electronically edits and returns the debit notices and other statements required by the State Cashier Agreement, including the recorded transactions journal and the disbursement reports.

In case of rejection of payment titles for non-compliance or insufficient information, incorrect label, payment address or bank details not mentioned, the Central Bank of Congo returns electronically the Computerised Payment Orders to the Direction of Treasury and Authorisation for correction (Ministère des Finances and Ministère de Budget 2010).

After the effective payment by the Central Bank of Congo and the receipt of the debit notice, the Direction of the Treasury and Authorisation updates the payment file by receiving the debit notices; the accounting payables file; and the difference between the final orders and those transferred to the Central Bank (Ministère des Finances 2011). The Treasury and Authorisation Department also follows up between the payment documents sent to the Central Bank and the titles paid actually, because even if blocked by the Treasury, an authorisation is an accounting balance.

The Principal Public Accountant informed by the Direction of Treasury and Authorisation by means of the transfer certificate, withdraws the necessary funds from the counter of the Central Bank or from an approved financial institution. In particular, the official ensures that the documents received are drawn up by the competent authorities, that the calculations are accurate, and that the payment is made in favour of the real beneficiary or his qualified representative. He also ensures that there are no actions to stop the payment otherwise the funds will return to the Treasury within the legal and stipulated period. He disburses the funds and hands them over to the beneficiaries, who keeps the supporting documents, and passes the accounting entries on the basis of payment orders.

2.8.3. Public Funds Allocation at the Provincial Level

In 2002, the outcome of a review of the Public expenditure recommended the computerisation of the Budget Execution Circuit (Bietenhader and Bergmann 2010). However, currently all the steps related to the Public Expenditures Circuit are managed manually at the Provincial Level, without considering the use of ICT (Ministère des Finances 2011). Lack of using ICT in public expenditure renders the process reliant on human discretion. Hence, the process is prone to abuse due to excessive human intervention in recording, and allocation of resources. In addition, since the process goes through many hands, it is very difficult to maintain transparency and accountability as officials may tend to play the blame game should a query arise. The manual system is in itself defective as paper records can go missing, thus hindering any forensic investigation of corruption.

2. 9. Public Funds Control Mechanisms in the DRC

There are seven control mechanisms used to control the finance in the central government in the DRC. The Administrative Control is used to control the administrative services. The control of the Authorising Officer is based on the availability of revenues and expenditures operations, the exhaustive registration, and the confirmation of the expenditure in the country budget and the monitoring of the program costs in its implementation. The Control of the Public Account consists of execution of the expenditures, and realisations of the revenues. The General Inspector of Finance is an expert in the control of finance and public assets. The parliamentary control is a political control; it ensures the execution of the Finance Act. The Judiciary control is carried out by the management of the Authorising Officer to control the regularity of their act and decisions. The administrative control at the province and Decentralised Territorial Entities are pursued by the local board of control and the General Inspection of Finance (Ministère des Finances 2011). The same control mechanism used at the central government is also applied to the province and the Decentralised Territorial entities for the Judiciary control. However, these mechanisms are not using ICT to ensure transparency and accountability in all these spheres of control which opens up doors for corrupt behaviour. The prevailing manual systems do not ensure effective control mechanisms to detect and report potential or actual behaviour that does not comply with the standard procedures, laws, and regulations or even ethical behavior, as stipulated within the country's institutions.

In fact, the more the manual systems exist within the funds collection or allocation, the more complicated it becomes to enforce accountability. Defective control mechanisms tend to thrive in manual systems. Such control mechanisms do not promote transparency in government officials' dealings as there could be room for falsifying, and discarding paper-based records that

may incriminate corrupt officials, hence promoting a lack of accountability. This further promotes the existing flaws within the funds collection and allocation processes especially corrupt behaviour. Such corrupt behaviour then increases the prospects of fund mismanagement. As corrupt officials engage more and more in funds mismanagement, they (corrupt officials) would want to perpetuate paper-based legacy systems in order to maintain the upper hand on any checks against their corruption.

2.10. Budgetary Resources in the DRC

These are resources presented in the budget in terms of revenue and expenditures. The resources are internal and external. The current, capital, and exceptional resources are considered as three types of resources managed with the Central government in the DRC (Ministere des Finances and Ministere de Budget 2010)

According to Ministere des Finances and Ministere de Budget (2010), current resources are as follows: taxes from the tax authorities; revenue from financial participation and other assets and rights, especially from public enterprises; administrative and judiciary income, loyalty and taxes paid for a service realised with a government institution.

According to the Act No 11/011 of July 13, 2011 relative to Public Finance, the capital resources are the revenue from the assignment of the estate and the assignment for the financial participation and other assets and rights; and Exceptional resources are internal current donations and bequests for the current expenses; internal projects donations and bequests for investments expenses; refund of loans and advances, and the product of internal borrowing. In addition, this Act mentioned that budgetary resources and charges for the province and the Decentralised Territorial Entities are considered as revenues and expenditures.

2.11. Budget Charges in the DRC

According to the Act No 11/011 of July 13, 2011 relative to Public Finance, current expenditure consists of public debt in capital, financial fees, personnel expenses; good and materials; expenditures of benefits and transfers and interventions. Charges are classified per programme, administration or economic nature as defined in the current nomenclature or depending on other classification; with interest on the analysis, monitoring and evaluation. It covers the current expenses, the expenses in capital and the loans and advances. This Act stated that capital expenditure consists of equipment, construction, reflection, rehabilitation, addition of work and edifice, property acquisition.

During the Public Expenditure Review in 2002, the authorities recommended the computerisation of the Budget Execution Circuit (Bietenhader and Bergmann 2010), but all the steps of the Public Expenditures Circuit are managed manually, without considering the use of

ICT (Ministere des Finances and Ministere de Budget 2010). Bietenhader and Bergmann (2010) highlighted that even if public expenditure to GDP ratio is the highest in the DRC, it is still among the lowest in Sub Sahara Africa.

2.12. Anti-corruption Mechanisms in the DRC

The DRC has legal and Institutional mechanisms for transparency and accountability, but there are still many challenges due to poor governance (Matti 2010) as cited in (Chêne 2010).

Legal Mechanism

The government of the DRC, with the pressure from the international community, has initiated an anticorruption campaign during the transition period; this led to a legal framework to combat corruption Freedom (2009). However, in the DRC, there is poor political will to fight and address corruption; and the implementation of the legal framework is ineffective (Kodi 2007). The 2006 constitution of the DRC includes the Public Officials Code of Ethics, with which all government officials, from the President to the public workers have to comply with, unfortunately, compliance with this code has been weak. According to Freedom (2009), citizens are unaware of their rights because they are not informed about any laws or regulations which affect their living conditions, and also, they are not well informed about their obligations.

Institutional Framework

Ethics and Anti-Corruption Commission

In 2003, the government of the DRC created Ethics and Anti-Corruption Commission to oversee the institutions mandated by the constitution during the transition period. Resource constraints, combined with a lack of vision, and poor strategies have hampered the functioning of this commission (Kodi 2007); and the 2006 constitution did not include this provision; and in 2010, the President of the DRC presented Zero Tolerance initiative to fight corruption which involved civil servants at all levels were involved, but was not successful (Freedom 2009).

The State Auditor and the judiciary

According to Freedom (2009), there is an ineffective audit body in the DRC and the Judiciary is undermined with the executive. Unfortunately, there is little progress in the judiciary reform and there is no independence as they are facing many problems related to political interference and generalised corruption. In addition, the government of the DRC initiated an audit in the judiciary in 2004, but only 20% of the population is accessing judiciary services and that out of Kinshasa (Matti 2010) as cited in (Chêne 2010). In the DRC, the judiciary has poor equipment and it is under-financed with poor infrastructure and underpaid staff; it lacks the legal texts and resources. This leads to non-application of the legal framework (Kodi 2007).

Other Stakeholders

Media: the constitution of the DRC guarantees the freedom of speech but its application is not effective because of restrictions presented with the government, as journalists are working under pressure, they are intimidated and arrested, and some radio stations were banned, but radio and televisions are still providing space to debate issues related to political and social life (Stiftung 2009).

Civil Society

Civil society organisations and the Opposition's Parties are facing many problems as they are exposed every time to intimidation and harassment. When they are talking about corruption, civil society faces pressure from the government authorities. The worst example is from the year 2009 where the president of ASADHO, an NGO based in the province of Katanga, dealing with human rights, was sentenced to one year in prison, after publishing a report which showed the kickbacks from illegal mining (Freedom 2009).

2.13. Summary of Chapter 2

This chapter described the context of the study site, from the country perspective to the territories. The engagement, liquidation, authorisation and payment are considered as the procedures of funds collection and funds allocation. It was highlighted that all these procedures are done manually without considering the use of ICT. The control mechanisms include; the Administrative Control, Control of the Authorising Officer, Control of the Public Account, Judiciary control, Parliamentary control, and Control of the General Inspector of Finance are detailed in this chapter. However, there are no ICT-led mechanisms applied in the procedures of public funds collection, allocation, and in the control mechanisms.

CHAPTER 3: LITERATURE REVIEW

3.1. Introduction

This chapter discusses the literature that is relevant to this study. The literature defined corruption and exposed the causes that hinder the applicability of transparency measures in public funds management. It was revealed that corruption has many consequences, and affects the living conditions of the population. Also, literature presents the different types of corruption and reveals that most of them are prevalent in the DRC. In addition, the current situation of the use of ICT in the DRC is also highlighted. Further, the literature discusses E-government for service delivery and presents the E-government models. Additionally, literature presents how ICT in terms of web based systems and websites, radio, television, and mobile phones are used in fighting corruption. Also, literature discusses how social media can be used in enhancing transparency and accountability. Furthermore, the literature discusses the determinants and challenges of using ICT in public funds management.

3.2. Overview of Corruption

Corruption appeared in many ways over the past years. Many researchers have defined corruption, demonstrated its impact, the different types of it and how it can be combated (Rose–Ackerman 2008). According to Andvig, Fjeldstad et al. (2000), many activities can be qualified as corruption practices including bribery, fraud and extortion. Macrae (1982) defined corruption as an arrangement containing a private exchange between the demander and the supplier which includes the use of public funds for private gain. Rose-Ackerman (1978) examined corruption by considering the problem of the principal agent, which has an effect on the division of labor and exchange. It is argued that, the principal gives the services to be performed by the agent on its behalf (Laffont 2003). The most used definition for corruption was defined with the World Bank, as cited with Tanzi (2004). It has defined corruption as the abuse of public power for private gain. According to Tanzi (2004), though not all corrupt behavior results in the payment of bribes; even a minister who wants to realise public projects in its hometown, an employee who creates job missions for a simple work or an employee who wants to assist his relative while others are waiting on the queue are involved in corruption without receiving bribes.

Corruption can manifest in different ways in which there are bribery which is the benefit received by a government official, as a payment; embezzlement, which is not strictly speaking as corruption; it is related to bribery except that it does not include the private sector.

According to de la Torre Campos, Radler et al. (2017), corruption is the abuse of entrusted power for private gain and it can be classified depending on the sector where it arises and the

money lost as petty, grand and political. According de la Torre Campos, Radler et al. (2017), Grand Corruption is the act committed at a higher level of government that distorts policies or the central functioning of the country, and enables the leaders to derive benefit at the operating expense of public goods. Petty Corruption was defined as the everyday abuse of entrusted power by low and middle level public officials in their interaction with the citizens who frequently access basic goods or services like schools, hospitals, police services and other basic needs. In addition, de la Torre Campos, Radler et al. (2017) defined the Political Corruption as the manipulation of institutions, policies and rules of procedures in the allocation of resources and financing by political decision makers who abuse their position to maintain the status, power and wealth. Danida (2013) defined corruption as the misuse of entrusted power for private gain. This definition is related to the definition of the de la Torre Campos, Radler et al. (2017) and it corresponds to the idea of corruption in International Anti-corruption convention and in the Danish penal code. Danida (2013) highlighted that corruption involves everybody whose livelihood, life or happiness depends on the integrity of people in place of authority and it undermines the democratic institutions and values. It has also confirmed that corruption is known as bribery, fraud, embezzlement or extortion; and corruption does not only involve money, it also includes the favouritism, protection, case processing and extra services as the form of providing services for gaining some advantages. Hendrix (2005) defined corruption as the abuse of entrusted authority for private gain. According to this definition, it is not only the public sector which is affected with corruption, the private sector as well as NGOs and other offices are also involved in corruption and the private gain does not concern only the person involved in corruption, but also the other private gain includes political contacts and family members.

Victoria (2017) defined corruption as the misuse of public power or position. According to this definition, corruption can occur through unacceptable or unlawful actions taken by public officials or government agencies and/or malfunctioning of the public officials or government agencies and the actions of individuals trying to influence the public sector functioning and decision making improperly. It highlights the aspect of misconduct in public office as a form of corruption and defines any conduct of public officials which is against the law and fails to meet ethical or professional standards or norms required in his exercise of power.

Disch, Vigeland et al. (2009) defined corruption in development cooperation as institutions, organisations, companies or individuals obtaining improper gains by their position in an operation, and thereby causing damage or loss. It includes nepotism, kickbacks and bribery, favouritism, extortion, embezzlement, racketeering, conflicts of interest, and illegal financing

of political parties. In addition, Disch, Vigeland et al. (2009) highlighted that corruption is the act of taking improper actions or the failure to take actions. Nduku and Tenamwenye (2014) defined corruption as the use of public office for private gain. In addition to the different definitions of corruption, Awoko (2017) defined corruption as dishonesty in the social, political and economic activities of people in government or non-government organisations. It added that, in every country or organization, corruption appears in three categories: political, economic and social. Political corruption includes conducting elections in an unfair way, the fraud committed during elections, the segregation and marginalization of the ruling party to the opposition party members, staying in power beyond the constitutional period, taking power by force, and supporting or influencing regionalism. Social corruption includes dishonest behaviour in dealing with people. Political and social corruptions have the potentiality to interrupt the political stability and economic growth and development; and disturb the social and political cohesiveness where they are applied. Economic corruption is seen as the act of bribery from customers of the public services delivery and the act of stealing the financial resources of an organization (Awoko 2017).

PublicSafetyCanada (2014) came up with different ways of defining corruption: it had categorised corruption in many ways or types, like public versus private corruption, where corruption depends on the sector of the act committed. When a public official engages in corruption or an individual is involved in committing corruption acts. Supply corruption involves the act of paying some advantage illicitly. Demand corruption is the act of soliciting or accepting such an advantage. Grand corruption is done at the higher level of government officials and involves the elected officials when dealing with government projects. It is a form of bribe paid in the areas of government infrastructure or larger construction projects. Petty corruption involves the public administration; it is a form of bribe used to enforce public administration to facilitate service delivery. Conventional corruption occurs in the way that government workers or officials solicit and accept bribes. Government officials receive the advantage for their own interest by ignoring the public interest. In addition, PublicSafetyCanada (2014) added that Unconditional corruption occurs when government official work for personal gain; this includes misappropriation, embezzlement, breach of trust and theft. Government officials operate without considering the public interest. Systematic corruption exists where people consider corruption as a routine activity. Government officials, business men and individuals are all involved in such practices and are familiar with it. While individual corruption exists where corruption is considered absent, rare or may be some few people are involved in dealing with corruption but regard it as the routine. Corruption by commission or

omission occurs when a government official performs his duties after getting a benefit from the person in need from a business man (PublicSafetyCanada 2014). In the case of this dissertation, corruption means the misuse of public funds for private gain. It involves the political, economic and social corruptions.

3.3. Types of Corruption

3.3.1. Bribery

According to Nam (2017), there is no universal definition of bribery. What is common for all the definition is that bribery involves somebody appointed to a position who acts willingly in breach of trust, for personal gain. He highlighted that the inducement can take the form of gifts, fees, money, rewards and other related advantages like services, donations, favours and taxes. The Government of Ireland came up with a departmental approach to raise awareness on bribery and corruption. It defined bribery as “a specific offence which concerns the practice of offering something, usually money, to gain an illicit advantage, and corruption as “as abuse of a position of trust in order to gain an undue advantage” (Irish Government 2017). Bribery could be given for different purposes, for a favor, influence, favorable treatment and more; and these are given to government officials who is able to perform the service in need; thus, bribery is illegal, when there is a gift given to a government official for achieving a service (Nam 2017). According to Business Dictionary (2018), bribery is the act of taking or receiving something with the intention of influencing the recipient in some way favorable to the party providing the bribery. Bribery is defined in law as the offer or acceptance of anything of value in exchange for influence on a government/public official or employee (Reuters 2018). Moreover, Nam (2017) highlighted that there is Active Bribery and Passive Bribery. Active Bribery occurs when a person offers, promises, or gives a bribe while the Passive Bribery occurs when a person requests, receives, or accepts a bribe. Both occur in the DRC because people give the bribe, and the government officials are also involved in requesting and receiving bribes. Further, Impact Law (2018) defined bribery as a white collar crime in which money, a favour or something else of value is promised to, given to, or taken from an individual or corporation in an attempt to sway his or its views, opinions, or decisions. The same author focused on the types of bribery and further mentions 6 types of bribery: Bribery by a public official, bribery by a witness, bribery of a foreign official, bank bribery, bribery in sporting contests, and industries prone to bribery. According to Powell (2017) bribery is a crime in which one party offers another party a gift in exchange for preferential treatment in their legal or professional duties. The same author highlighted that bribery can take many forms, for example, bribery of a witness in court, bribery of a public official, bribery of doctors and bribery of foreign officials. All these forms

of bribery are common in the DRC.

3.3.2. Clientelism

Two elements are considered when talking about clientelism, the Patron and the Client. According to Hopkin (2006) clientelism is a form of personal exchange usually characterised by a sense of obligation, and often also by an unequal balance of power between those involved; this definition was supported by Merriam-Webster-Dictionary (2018) when defined clientelism as a political or social system based on the relation of client to patron with the client giving political or financial support to a patron in exchange for some special privilege or benefit. This means that there is reciprocity between the patron who provides a service or goods to the client for giving him back what is required. This is observed in the DRC because there is influence of those in higher positions in politics; the employees in government services depending on their influence and they appoint those who can be of benefit to them. These definitions are related to the definition of Briquet and Sawicki (1998) when defined clientelism as the relationship between individuals with unequal economic and social status, the patron and clients, that entails the reciprocal exchange of goods and services based on a personal link that is generally perceived in terms of moral obligation". In this definition, two factors are considered the poor economic living status, which involves those who are working at the service of the boss and secondly the economic owners, which also involves those who have the possibilities and work as master for those with lower economy, which becomes an aspect of slave and the master relationship. Another definition of Clientelism concerns patronage. According to Sayari (2011) clientelism is the exchange of a public sector job for political support. This is what is common in the DRC, from the top level, at the government position, to the lower level, the public administration. Jobs, in the DRC, are given depending on political influence. Clientelism is also used as a method of mobilisation during the electoral period. Clientelism happens when materials are distributed in return for electoral support and these materials are distributed to those who have supported or intend to support the candidate (Sayari 2011). According to Horn (2016) not all practices of clientelism are considered as corruption. Some of these practices are allowed, like political jobs are given depending on the influence of the client and how active he is in the political party. Other aspects of clientelism include the possibility of getting goods or services somewhere in exchange for support to your facilitator. This was characterised by the historian Richard Graham when he emphasised on the principle of take there, give here where the client and the patron can support each other as they all support each other at different levels (Roniger 2004). In addition, Robinson and Verdier (2013) highlighted that when talking about clientelism, there is a political exchange, where a politician or the patron gives his patronage or

use his influence to support the client, in exchange of a vote or of support. This implies that the jobs or other favours given are in exchange of a vote or support. Clientelism is common in the public services in the DRC because, most workers are employees depending on the support from influenced politicians. In the DRC, clientelism is used as a mechanism for maintaining influence. According to Nguh and Sanyanga (2013), public resources are used to maintain networks of the clients. The authorities are using the public funds to sustain the political patronage; this includes the replacement of the head of states companies, or enterprises, to the persons close to the influential politicians, and the placement of workers at all the levels.

3.3.3. Embezzlement

According to Edori and Ogaluzor (2018), embezzlement is the act of wrongfully appropriating funds that have been entrusted to your care, but which are owned by someone else. It is also known as an employee theft. It is considered as fraud, defined as the distortion of the truth, or suppression of a fact to bring another to act to his or her damage (Edori and Ogaluzor 2018). There are components which have to be considered for an embezzlement to be taken into consideration; according to Fremont-Smith (2004) the person has to be in a position of confidence and trust with the property or money belonging to someone else; the second aspect is that the person hides the property or takes the property or the person can choose to use the money or property without the consent of the owner; and lastly, the person decides to take ownership of the property or money permanently, without the approval of the owner. In addition, embezzlement is defined by Morgan (2006) as a crime committed by someone in a position of trust. This crime can happen as loss of money from a keeping book scheme. For embezzlement we can consider the fact that money is collected, but instead of registering money in the government treasury, the employee can pocket it. This is common in the DRC. Tax collectors use embezzlement when collecting and mobilising the funds. Wessels (2018) highlighted that embezzlement occurs when money or property is misappropriated or stolen from a business partner, an employee or another person who trusted the embezzler with the asset. Freedman (2012) added that embezzlement is the “dishonest misappropriation of money or property by a person who gained access to the money or property by virtue of his employment” and highlights that there are many situations covered with embezzlement. These include the manager who diverts millions to an offshore account to a cashier skimming off the top. In addition, in Investopedia (2018), embezzlement is defined as a form of white-collar crime where a person misappropriates the assets entrusted to him. According to Wessels (2018), there are many factors that influence embezzlement: Firstly, there must be a fiduciary relation

between the two parties; and this relationship must be of trust and the responsibility of taking care of the money or property and that must depend on the two parties; secondly, the defendant must have received the money or property depending on their relationships than using other means; thirdly, the defendant must have taken the ownership of the money or property or transferred it to someone else; and lastly, there is an intention of the defendant to take the money or property. Reuters (2018) indicated that embezzlement usually happens in the employment and corporate fields; and some of the embezzlers can misappropriate a small amount in a long period while others take a large amount of money at once. Among the causes or causes of embezzlement, James (2016) suggests that there are three factors that influence the employees to commit fraud, these include the pressure or incentive where the embezzlers may need money to solve some problems in the family, or living a lifestyle beyond their income; many think it is an opportunity of having money without struggling and lastly there is the rationalisation that most people who are committing fraud at the workplace are not punished or their act is not considered as criminal, and instead of thinking that when they steal, it is a fraudulent act, which can be considered to them but they believe themselves that they are in the right way and declare themselves to be honest and decent people. TradePress (2018) contributed to what was said about the factors of embezzlement that there must be a motivation of the employees to commit fraud; for example economic factors like bookmaking, overspending, financial distress, or the temptation for employees to access the company assets and information that allows them to believe that the fraud can be committed and not be recognised, and employees may rationalise fraud by convincing themselves that what they are doing is clearly justified.

Embezzlement can happen in different ways. According to Nathan (2018) there are six examples of embezzlement: the first example is Siphoning where employees, especially, for those working in the front line of a restaurant and stores, where they create a way of keeping track of how much they get after their shift is over without entering it into the computer. The second one is the Check Kiting where the criminal can make a series of deposits and withdrawals between several banks and checks grow in value gradually starts and withdrawing money from the other banks. The third example is where a criminal has the responsibility of using the transaction of a company. He used this opportunity to change the allocation of funds to cover his own expenses from certain customers. The fourth one is the use of the company Payroll to take money illegally. The fifth example from Nathan (2018) is the falsification of the overtime records; some employees can falsify their overtime records for earning much money at the end of the month and the sixth example is the kickbacks a vendor, from whom the

company purchases materials in their course of business, agrees to give that employee money, directly to them, if they continue to buy a certain product from that vendor. Reuters (2018) also provided some examples but focused on how the embezzlement takes place in banking companies where the store clerks and the tellers are given lawful possession of money during the transactions. Other examples of embezzlement were given by Wessels (2018). These include how employees embezzle on the job by changing the account books to hide stolen or lost money, moving money from a customer's account into a personal account, taking inventory or office supplies for personal use, depositing vendor cheques into a personal account, charging more than the cost and pocketing the difference, taking bribes and kickbacks, and borrowing money from the cash register. Wessels (2018) assured that embezzlement can happen when someone's entrusted property is abused by someone else and this include using someone else's cheque book or credit card, selling someone's property, and pocketing the proceeds without accounting for it to beneficiaries and changing the books to hide the misuse of funds.

3.3.4. Extortion

Corruption appears in different ways. It may also occurs as extortion, depending on how it happens. According to Reuters (2018) extortion is defined as the crime occurred by false claim of obtaining money or intimidation for obtaining money or property by threat to a victim's property or loved ones. It is emphasised that extortion is the act of gaining a property by for force or threat of violence, harm to reputation, unfavorable government action, and property damage. Extortion is viewed as a form of theft or larceny; it is a felony in all states. In addition, Extortion can also appear in a different manner; a blackmail is a form of extortion in which the threat is to expose embarrassing and damaging information to family, friends, or the public. Extortion can take place over the telephone, via mail, text, email or other computer or wireless communication. If any method of interstate commerce is used in the extortion, it can be a federal crime. Another common extortion crime is offering protection to a businessman to keep his business safe from burglary or vandalism (Reuters 2018).

According to Freedman (2010) extortion is the use of threats to extract money from people. He highlights that extortion in traditional common law is defined as the unlawful taking by a government official of money or property either by threats, or simply in return for performing some official act. Different to extortion, blackmail covers threats made by private persons to gain anything of value, which is not only money or property, but also a sexual favour. In other states of the USA, like in the New York States, blackmail referred to as larceny and includes

the demand made by a private individual as well as government officials (Freedman 2010). To confirm that there is an act of extortion there must be a receipt of money and property or some proof. According to the English criminal court, Extortion is “the obtaining of a benefit by physical force” and in the Scottish criminal law extortion is “the crime of using force to obtain money”. It does not matter that the money is legally or illegally due. In addition, Burton (2007) suggested that Extortion is a crime when anyone under the colour of office extorts that which is not due, or more than is due, or before the time when it is due. According to Gale_Group (2008) extortion is the obtaining of property from another induced by wrongful use of actual or threatened force, violence, fear, or under colour of official right. In addition, many statutes also state that any threat to harm another person in his or her career or reputation is extortion (Gale_Group 2008). They acknowledge that the essence of extortion by a public officer is the oppressive use of the official position to obtain a fee. The officer claims falsely authority to take that to which he is not lawfully entitled. In the DRC, this practice is common in many sectors, the police officers may use the force to collect money illegally or the tax collectors may use their force to collect money in surplus to what is specified, or the amount expected for collection. Traffic officers use to intimidate the vehicle owners for getting money from them; the tax officers also use power to collect taxes by force and intimidate the tax payers to pay the extra cost. According to Gale_Group (2008), four basic ways for committing extortion are: the officer may receive a fee before it is due, he can take a fee greater than what he is expected to collect, he may demand a fee not allowed by law and accept it under the guise of performing an official duty, and lastly, extortion may be committed by the officer who is accepting a fee for services that are not performed.

3.3.5. Favouritism

According to the Mashal (2011) favouritism is the preferential treatment of a person or group over other people or groups in the same unit, such as a classroom, social group or workplace. In this definition, it is found that favouritism affects negatively the morale in the workplace and it is illegal if the action is based on the exchange of sex or the racial preferences. In addition, the Cambridge_Dictionnary (2018) defined favouritism as the unfair support shown to one person or group, especially by someone in authority. In difference to Mashal (2011), favouritism occurs when two people are doing the same thing; but one does not get it, but other gets (Tina 2018). It is advisable for employees to become familiar with the types of favouritism that are practised so that the company can develop effective policies to combat them (Nathan 2018).

However, there are many effects of favouritism in the workplaces. According to Rush (2017) favouritism can lower the motivation of the workers, which can result in the less productivity, because the employees will feel that they are being by passed for promotions, when all the benefits are directed to favourite to the favorite workers. Another effect of favouritism in the workplace is the resentment because workers feel that, it does not matter, even if they work hard, the favourite employees will always be favoured, by getting better benefits and opportunities. Litigation is another serious issue for employers engaging in favouritism because the employees can sometimes take legal action against such employers, and this can result in restitution awards, loss of professional reputation, and court fees. That is why Rush (2017) suggested that if you are an employer engaging in preferential treatment based on gender, ethnicity or sexual favour it is time to stop it. McQuerry (2018) added that favouritism can destroy employee relationships in that the unfavoured employees might become resentful not only to the boss but also to the favored employee. Favouritism can damage reputation and cause the work turnover because those who are not treated well might not provide their full efforts in handling their duties and might seek other opportunities, which can affect the productivity of the company and lose qualified employees. Also, when it comes to the workplace atmosphere, employees who are not favoured might not focus on their duties, but concentrate on rumors which can create the negative atmosphere and lose the credibility of customers.

3.3.6. Nepotism

There are many definitions of nepotism, depending on the domains. In the Business world, Legal (2016) defined nepotism as the practice of showing favouritism toward one's family members or friends in economic or employment terms. For example, offering a job or granting a favor to a family members or friends without considering their merit or qualification. In addition, the Human Resource Professionals defined nepotism as favouritism to relatives due to the blood relationship rather than making decisions based on standard metrics such as performance, personality, achievements and results; and also added that the related term cronyism which is a favouritism to the friends and other non-relatives based on relationship rather than merit (HRZone 2010). Nepotism is defined in the Cambridge_Dictionary (2018), as the “use of power or influence to get good jobs or unfair advantages for members of your own family”. According to Harcourt (2010) as cited in the (Collins_English_Dictionary 2018), nepotism is the favouritism shown to relatives, especially in appointment to desirable positions. He described it as “the unfair use of power in order to get jobs or other benefits for your family or friends”.

Herbert (2018) stated that nepotism is patronage bestowed, or favouritism shown on the basis of family relationship, as in business and politics. In politics, nepotism is so observed and criticised by some authors depending on how it has affected such a field. Nepotism affects many countries, including the USA, where ten of the 45 presidents of the country were accused of nepotism; they had appointed their relatives and sons to the position in the presidential office. In addition, the former president of the Republic of South Africa, Jacob Zuma, was accused of nepotism for appointing his daughter, Thuthukile Zuma, to a higher position, as chief of staff in the Department of Telecommunications and Postal Services (Reilly 2014). Moreover, nepotism is different to Meritocracy, where people are appointed positions due to their merits, contributions to the society and genuine accomplishments which is not in Nepotism where people are rewarded for their political position and their family relations and friendships (Okafor 2013).

3.4. Causes of Corruption

Corruption appears in many ways with different causes depending on the social, political and economic factors. According to MacDonald and Majeed (2011), economic development has a positive impact in reducing corruption as it affects both bribe-givers and briber-takers, as there is law enforcement, and the citizens do not accept corruption and react forcefully to the corruption activities. They added that corruption can be increased in larger governments as there is red tape and higher bureaucracy and the opportunity to seek bribery, this is due to the involvement of larger governments to spend much money or resources in balances, checks and law enforcement. In addition, MacDonald and Majeed (2011) highlighted that, in European countries, the larger government are so effective in corruption control, the higher the reduction of the corruption rate. Competition is another factor that impacts on corruption. MacDonald and Majeed (2011), argued that the higher the competition, the lower the corruption; and competition is the result of openness to trade. In addition, political stability, which is a result of democracy and economic freedom, impacts positively in curbing corruption; and the interactive effects of the history of the country together with the law or political stability, and are most important in explaining corruption. In addition, Treisman (2000) confirmed that the factors that caused corruption are history and culture, economic development, and political stability. According to Begovic (2005), rent-seeking behaviour is the most important causes of corruption, because in many cases people engage in acts of corruption for earning the surplus from somebody else. In this case, Begovic (2005) added that the procedural legislation can be used to enforce the rules and regulations to avoid corruption. In this regard, the deregulation,

as the abolishment of the prohibitive government intervention for the effective functionality of the market forces, is considered as the most useful element for any strategy in fighting corruption. Furthermore, Lomnitz (2017) mentioned that the weak state, characterised by poor economic growth, resulting in an informal economy, and lack of accountability in taxation, impact negatively on corruption. Mike (2017) showed five factors that caused corruption in Africa, namely unemployment, greed, poor accountability, bad governance and high quest for wealth. If there is lack of leadership skills, bad governance is the result and the consequence is the involvement of the government officials to corruption. Greediness is another factor which causes corruption in the African continent because many government officials spend public funds allocated for the development of the country for their private needs. They decide to misuse money for their own interest without solving the main problems in the country. In addition, the lack of accountability also occurs when government officials know that the government does not ask them how they are running the income and expense, or if there is nobody to ask them how they are managing the budget. Also, Africans are involved in many activities to look for money, and this causes the government officials and the people they rule to get into corruption practices. Additionally, Mike (2017) highlighted that the quest for wealth is the major cause of corruption in many African countries, especially in Nigeria; and is also the cause of many African Presidents and government officials to retain power, even when their period of ruling the country is over. Unemployment is also another major cause of corruption in Africa. According to Mike (2017), many unemployed people are involved in corrupt behaviour to secure their jobs, or to find a job, and others are able to use any mean which will help them to make money. Nduku and Tenamwenye (2014) added that the causes of corruption in Africa differ from one place to another, and depend on the political, economic, social and cultural situations. They identified some causes, including lack of accountability and transparency, greed and selfishness, lack of political will, poor leadership, weak government institutions, weak ethical values, clientelism and patronage nepotism, politics of the belly, weak judicial system and constant conflicts and insecurity, lack of popular participation of the public in the government, concentration of the state power and its centralist nature and the negative colonial legacy. Mauro (1996) cited in (Mashal 2011) confirmed that corruption affects the developing countries because the conditions are suitable for corrupted people and the factors that caused this phenomenon are: weak legislative and judicial systems, weak political will, and political instability, as there are many opportunities to engage in corruption and there is a strong motivation to earn illicit income due to low salaries, poverty, lack of insurance, illness, accidents, and unemployment.

Furthermore, Mele (2014) identified ten (10) possible causes of corruption in African countries namely: the personal greed which leads to unregulated need of money without regarding the moral restrictions; lack of courage or poor awareness in reporting corrupt behavior and the situations in favour of corruption; the decline of ethical sensitivity due perhaps to education or bad learning experience, as many government officials and other private workers lose their sense of service and use their power for private gain; a cultural environment which gives rise to corruption; people admire corruption acts and provide arguments without moral considerations; lack of transparency at an institutional level and in some formal organisations, officials do not want the citizens to know how the budget are managed and it seems that civil society organisations can prevent corruption by showing them that what they are doing is not what is supposed to be done; lack of better regulations and effective control is another factor that promotes corrupt behaviour in many African countries; also, in judiciary services in corrupt countries, the processes are slow; lack of moral criteria in promoting the workers because the consideration is based on the loyalty to those in charge of the leading party; lack of punishment to those who commit corruption in order to have an environment which does not favor corruption. These causes are institutional, organisational and cultural (Mele, 2014).

According to Forson, Baah-Ennumh et al. (2016), the causes of corruption have to be classified into three dimensions, historical roots, contemporary causes, and institutional causes, and these dimensions are considered depending on the preconditions considered as bureaucratic discretionary power, association of power with the economic rent and deterrence, which deals with the probability of being punished. Historical roots and contemporary causes deal with the possibility of getting benefits of corruption, and institutional causes deal with the possibility of being punished. Historical roots impact on corruption because the current legal codes and the administration depend on the influence of colonisers which affect the level of control of corruption due to the poor quality of government. On the contemporary perspective, Forson, Baah-Ennumh et al. (2016) highlighted that rich countries are expected to have stronger institutions than the poor countries; thus, corruption is likely to be higher in developing countries, depending on the relationship between corruption and the real income. It was also emphasised that when government or private agents have monopoly of power over clients, there is possibility of corruption, because government officials or private agents make decisions in discretion without suitable control applied over such discretions. This is due to lack of accountability and poor control mechanisms in decision making (Forson, Baah-Ennumh et al. 2016). It was also contributed that, the foreign aid in terms of money is also the source of

corruption; the main concern is how the aid was made available and how it was used. Alesina and Dollar (2000) as cited in (Forson, Baah-Ennumh et al. 2016) highlighted that there is a weak correlation between the aid inflow and the development of the recipient countries, but strongly correlated to some elements such as historical and cultural proximity between the donors and the beneficiary countries. Another variant of corruption identified by Forson, Baah-Ennumh et al. (2016) is the contemporary democracy which is considered as free elections or electoral competition. On the institutional perspective, they focused on rules that figure out human interaction and behaviour to engage in corruption. This means that corruption exists where there is absence of rule of law; as it was said by the Executive Director of the UN Office on Drugs and Crimes that where corruption exist, the rule of law cannot flourish” (Fedotov, 2012, as cited in (Forson, Baah-Ennumh et al. 2016)). In this regard, the institution which is considered as whistle-blowing is the media or the freedom of the press as they should focus on public interest. In addition, there is also an assumption that lack of accountability, especially for bureaucrats and politicians, opens the gate to corruption (Forson, Baah-Ennumh et al. 2016). According to Adam (2015), the reasons that cause corruption in African countries are based on the culture, because there is an expectation that all the government officials use their position to make money. Also, most African leaders run for their position to make money and consider the population at second level; and those who accumulate illegal prosperity are the people to respect. However, in the DRC, the causes of corruption are historical, economic and political. Corruption affects all the sectors in the DRC. According Tambwe (2010) corruption has its roots in the political and administrative professionalisation and institutional representation as those who are managing the public institutions in the DRC are from a certain political class which give them power and are considered more expert and competent. Tambwe (2010) added that many countries are affected with corruption at higher level; some governments are misusing the public services for their own gain, like the lack of administrative documents in government offices but the same document is sold in black market. Thus, according to Tambwe (2010), these are the causes of corruption in many African countries including the origin of power and neo-patrimonialism which is observed when you get power in an undemocratic manner or getting political or administrative power by means other than democratic or rational, the power will be handed to the one who gave you the position. This is observed in the political and public institutions. Also, the mass poverty, the weakness of the middle class and the unity of the ownership of the public assets and clientelism are other causes of corruption in the as the dominant idea is to assimilate the public resources for their own benefit where each citizen would be entitled to a patrimonial share. This was confirmed by Kadiamuyika et Kazadi (2007)

as cited in (Tedika 2013) that the regime of Mobutu was characterised by neo-patrimonialism and argued that impunity and lack of professional and moral values, and poor salaries are the main causes of corruption in the DRC. Kadiamuyika et Kazadi (2007) as cited in (Tedika 2013) also added that the lack of satisfaction of the basic needs, poor salary, and the province of origin are among the causes of corruption for the magistrate in Kinshasa. Thus, the causes of corruption are the lack of professional ethic, poor salary, poverty, geographical origin, and impunity (Kadiamuyika and Kazadi, 2007) as cited in (Tedika, 2013). In the DRC, the 2019 Finance Law, promulgated in November 2018, provided for a salary increase from 20,000 FC to 25,000 FC (12 USD) for the police, soldiers and teachers, medical staff, and other government workers, and between 38,000 FC to 39,000 FC (23.6 USD) to public administration officials, including Secretary General, Director General, and director. Thus, a bailiff received 118,350 FC or 71.7 US dollars and a Secretary General of Public Administration 192.9 US dollars (Deskeco 2019).

3.5. Effects and consequences of corruption

Corruption affects the living conditions of the community in different ways. According to Desai (2013) identified ways in which corruption hinders the economic development, including high Prices to consumers. This occurs when businessmen and entrepreneurs must pay bribes to get the required or essential permits and then they include this cost onto consumers to buy the product or get the service at a higher price and if they do not pay that extra money they will be subjected to the delay of services. Controversy (2018) also added that corruption can cause a decrease in foreign investment and delay in growth because many investors are not willing to come to the affected country, and the delay of services due to corrupt behavior of the government officials. The second consequence, according to Desai (2013) is that the reduction of investment which leads to the reduced goods and services and inflation. In most cases, in countries where corruption in terms of bribes from entrepreneurs is seen as a tax which can reduce the encouragement to invest. Many investors, especially foreigners, are not willing to come to such countries and this will cause the reduction of goods and services because. This was observed in 2015, at Bukavu, South Kivu Province in the DRC where companies like Olga House/Rafiki Maji Safi, Mineral Hongo and Mugote wanted to close their business due to over-taxation. According to these companies, 71% of their products cover taxes and believe that they are facing a fiscal harassment that threatens their business and may therefore force them to close (Radio_Okapi 2015). According to Controversy (2018), corruption has effects on economy,

society, and people. On the people's side Mind it was highlighted that the following effects of corruption on people including the poor health and hygiene, and the pollution of environment; with corruption, a country with a high potential of fresh drinking, quality of food, and proper roads may face a difficult life due to low quality services; sometimes, even the medicine provided to the hospitals are not of the quality standard. In country where the system is corrupted, there is no quality of service and lack of proper justice because, if you require a service, you will be required to pay some money, and this is observed in many areas in the public sector. Also, if the judiciary system is corrupted, there is no proper justice (Controversy 2018). The same author added that the chance of unemployment occurs in the corrupted countries because they are all involved in nepotism by employing their relatives and friends. Furthermore, Lopez-Claros (2014) added that corruption is a destroyer of human prosperity and gave the reasons that corruption undermines the government revenue. There is a serious problem between the taxpayers and the government officials because poor feedback on the tax paid is observed. Also, the infrastructures, roads construction, and other facilities which undermine the efforts that the government is doing to eradicate poverty are not consistent. Another reason is that corruption changes the decision-making connected with the public investment projects (Tanzi and Davoodi 1997) as cited in (Lopez-Claros 2014). In addition, corruption contributes to the misallocation of human resources. This occurs when officials and the tax payers want to sustain the corruption system. They invest time and effort in the development of skills and build a variety of institutions to support opaque systems, such as a secret bank account and off-the-books transactions (Lopez-Claros 2014). Corruption has also deteriorated the income distribution and allocation. Akçay (2006) revealed that corruption causes income inequality by lowering economic growth. With corruption people can get benefit uncertainly because they will not be aware of how long it will last as there are no enforceable property rights from a transaction involving bribery. Also, corruption is a betrayal of trust because it affects the legitimacy of the state and the moral structure of the bureaucracy, in the eyes of people, which may lead to other forms of crimes like creation of mafias and criminal groups who use financial power to infiltrate legal businesses by intimidating them and they may create protection of rackets and a climate of fear, leaving the police may be helpless and without the possibility of arresting the criminals (Lopez-Claros 2014). According to Baxamusa and Jalal (2014) the consequences and effects of corruption are observed and reaching from nations to societies, but many are still not aware of these consequences and their effects on people or individuals, which cannot be compared to financial well-being because it can affect more than that; even the emotional health. In Jamaica, corruption affects politics, health care, law

enforcement, judicial rulings, gender and sexual harassment, exploitation of the poor and even day to day living. There is also a serious socioeconomic concern as issues like poverty and inequality are observed with public funds directed for private gain (Baxamusa and Jalal 2014). The political instability associated with war in the east is influencing politicians to secure their own backs, rather than the millions of Congolese they are supposed to protect. As a result of corruption and systematic embezzlement, the billions brewed by the government between the revenues of the economy, taxes, and money from the trafficking of resources or from international aid do not benefit the Congolese at all. In addition, Eichstaedt (2011) argued that the government undertakes work regularly, such as the construction of roads, infrastructure, and neighborhood renovations, but these developments are far from sufficient for the Congolese who denounce, especially through the opposition, a poor development, which is limited to the capital, as a showcase of development. Ilorah (2009) highlighted that Favouritism is a scourge because to access important positions, the political leaders consider their relatives as more effective than merit or skills. Corruption escalates appropriate in political life, as soon as an opposition leader starts to get noticed and expresses criticism of the mismanagement of the country, his silence is bought through bribes and promotions to important positions in the administration. This is the reason why the opposition has little influence. For the Congolese, what seems to be lacking in Congolese governance is ultimately a long-term vision, and a means of control over leaders, to ensure that their main objective remains the well-being of all (Wraith and Simpkins 2010).

Concerning the DRC, the selfishness of the leading groups in the DRC, from the colonialism until now, has caused corruption and many effects are observed. The living conditions of the population is based on how the country is led and how government authorities are not considering the population needs in their leadership. There are many effects of corruption on the living conditions of the community. Kodi (2008) wrote on corruption and governance in the transition of 2003 to 2006 in the DRC; he mentioned that the demand for basic metals, such as cobalt and copper, increased as a result of the Vietnam War and stimulated the Congolese economy between 1968 and 1974. The huge revenues from these resources could have allowed the government to lift millions of Congolese out of poverty, but instead they were used by Mobutu to bribe his political allies at home and abroad, and to strengthen his party's grip, the Popular Movement of the Revolution (MPR), across the country. Kodi (2008) highlighted that in November 1973, with the aim of creating a national bourgeoisie which, according to his own words, would boost the development of the country, Mobutu confiscated all the small and medium-sized enterprises and entrusted them to his companions. It was a turning point in the

country's economic history. The beneficiaries of Mobutu's largesse had neither the experience nor the least intention to run businesses. They merely pocketed all available cash from these companies and let them deteriorate. In 1974, most businesses shut down and this led to a recession in the country's economy, which has never recovered. As a result, hundreds of thousands of workers lost their jobs, which increased the high rates of unemployment. The government was losing revenue and, the means to maintain the infrastructure, which was deteriorating rapidly. Inexperienced and incompetent people were appointed to ministerial positions and heads of state enterprises. The newcomers continued the predatory tradition of the ruling elite under Mobutu and began to plunder openly the state's resources. The United Nations commission of experts on the illegal exploitation of natural resources and other forms of wealth of the documented activities during the Transition of the "Unsavoury Politicians" of the DRC government that personally benefited from the situation (United Nations, 2001) as cited in (Kodi 2008).

Mobutu stayed in power not only by using brute force and trickery, but also by using the power of money. The country's armed forces were reserved for the personal protection of Mobutu and his entourage. He used them, as well as the sophisticated intelligence system in place, to intimidate the population and keep them under his control, just as he had learned to do in the colonial army. In addition, he excelled at using money to build new allies and mobilize support from his network of friends inside and outside the country. To generate the large amounts of money, he needed unrestricted access to all the resources of the country, which he managed to do by transforming the national patrimony into personal property and slowly establishing a new regime, neo-patrimonial. It was imitated by power elites, who, like their president, did not see their position in the state as a duty to the country but as an opportunity to build their personal fortune and enrich their loved ones Diangitukwa (2001) and Nzongola-Ntalaja (2002) as cited in (Kodi 2008).

Concerning the issue of the effects of corruption on society and economy, Controversy (2018) highlighted that corruption affects the society in different ways; it causes the disregard for officials because people start talking negatively about officials involved in corruption which also causes the distrust; the lower officials may not even obey the order of the higher officials due to corruption because they will regard them as unimportant for him as they are considering his own interest. In corrupted environment there is lack of respect for rulers; in many countries, higher officials, like President or Prime Ministers lose the respect of the public because they vote for them by hoping that they will improve their living standards but many of these high-ranking officials are just considering the lives of their relatives.

Additionally, corruption creates lack of faith and trust on the governments because when officials are in campaign they assure people that they will work for them and people vote based on that faith but while in power, they become corrupted and forget their duties. With corruption, honest and sincere people are avoiding to apply for some positions to avoid joining the posts linked to corruption (Controversy 2018). Further, Mashal (2011) summarised the consequences of corruption in six (6) points: it lowers the investment, including the foreign direct investment; creates a shift in the composition of government spending from more productive to less productive activities; reduces the economic growth and the efficiency of aid; makes a greater inequality; create a higher incidence of poverty; and expose the country to currency crises. In addition, (Xiao, Lenzen et al. 2018)highlighted how our society is affected with corruption. He has considered the example of India to show the effects of corruption in society. According to him, there are many effects of corruption in politics, administration, and institutions. Corruption undermines democracy and good governance by breaking and disrupting the formal process and undermines the legitimacy of the government and such democratic values as trust and tolerance. It also compromises on the rule of law and violates the basic principles of political belief regarding the centrality of the civic virtue. Corruption during the period of elections and in the legislative bodies distorts representation in policy making and reduces accountability. Concerning the environmental and social effects of corruption, Xiao, Lenzen et al. (2018) added that corruption is a catalyst for the pollution and destruction of the environment. In corrupt countries, their weakness is the failure in implementing the rules or legislation to protect the environment as the officials are so bribed. This is also observed in right of protection for the social worker, for labour and for unionisation. Corrupted officials are able to steal even the state property and undermine the food security even when there are good harvests.

In short, Congolese society ignores the protection of human rights; the agents of the order transform themselves into agents of disorder and insecurity not only against the population but also against the State. It is the privatisation of the management of the violence; a dilapidated economic system: industrial predation, lack of competitiveness, galloping inflation and very high unemployment; an unparalleled development of social inequalities on the one hand between the rich and the poor, on the other hand, between the cities and the countryside; a two-tiered educational system with the consequent illiteracy and loss of children. To this must be added the continuous decline in the academic and university level for the majority of children who still have the chance to study; medical care becomes a luxury inaccessible to the majority of inhabitants; freedom of expression and the right to information only benefit a very small

minority of the population; the blocking of the institutionalisation of political power: absence of both the legal state and the rule of law; elders in general, and politicians in particular, have ceased to be role models.

Corruption also affects negatively the economic growth. According to Robinson (2015) corruption affects the equitable distribution of resources across the population, undermining the effectiveness of social welfare programmes, increasing income inequalities and eventually resulting in lower levels of human development. Furthermore, he stated that corruption generates the economic distortions in the public sector by diverting public investment into capital projects. Besides, corruption causes decrease in the foreign investment, as many investors decide to go back and not invest in the higher-level corrupted country; it also creates the delay in economic growth because with corruption some government officials decide to delay the process if they do not get the bribe. In a corrupt country, the lack of development is observed and there is also differences in trade ratio, as there are incompetent standard control institutes where the low quality product is approved for sale (Controversy 2018). In a corruption environment, many problems are observed, such as poorly equipped schools and hospitals, and elections are determined by money, these are just some of the consequences of corruption in the public sector (Robinson 2015). Hoxha (2016) highlighted that corruption is a global phenomenon found in all countries and the most affected people are the poor; it smothers economic growth and distracts desperately the funds needed for education, public services and healthcare.

3.6. Mechanisms for Public Funds Management

There are many mechanisms applied for public funds collection and allocation. The combination of the strategies and policies set by the government ensures that public funds are collected and allocated fairly and managed as required.

3.6.3. Strategies for Public Funds Collection

Based on this study, the Mechanisms of public funds collection concerns the tax collection process within a country. According to Bawaneh (2017) there are two major mechanisms for tax collection namely Tax Bureaucracy and Tax Farming. Tax Bureaucracy indicates that methods are established by government and the uniformity is maintained by the designed procedures (Banton 2019). While Tax Farming implies that the rights of tax collection is transferred to individuals or private organisations (tax farmers) in exchange of an estimated fee (Stella 1993). This mechanism supports governments in developing countries to minimize the cost of collecting taxes, thus, maximise tax revenue. However, depending on the status of the

state, the government can choose either to use the Tax Bureaucracy or Tax Farming by implementing strategies and policies that may be useful to maximise tax revenue. According to (Mann 2006), government or tax authorities should provide a truth simple return process for most taxpayers, which allows the taxpayers to fill once and the bank account will be debited at the required time. Tax authorities publish the IRS (Internal Revenue Service) provided services to taxpayers namely email assistance, and assistance centers nationwide. They provide meaningful customer service by providing IRS to taxpayers. Tax authorities should also reward compliance by providing coupons, free gifts, and discounts to best taxpayers; and ensure interaction between the taxpayer and tax authorities in useful and trusted means. In addition, tax authorities should provide the code to taxpayers, which is limited and simplified. Tax authorities should also build trust to taxpayers by ensuring that taxes are providing visible changes in the country like improvement of the living conditions, road construction, and other services based on the wellbeing of the citizens. Additionally, it is encouraged to label Taxes to make sure that there is a selective publicity enforcement about taxes gaps; and do not encourage tax evasion.

Further, Estevao (2019) provided ways in which low-income economies can boost tax revenue: **Building trust and provide proof:** citizens need to be convinced on how their taxes are being used and its impact to the government projects realised by these funds. They want to be well informed about taxes and need transparency in the completion of the projects and the collection process of funds.

Keep it simple: it is better to ensure that the taxation system is easier to use to avoid the culture of tax evasion and open the gates to corruption. Therefore, the use of a simple code can create the culture of taxation and bring more citizens and business owners to comply with the payment of taxes.

Go digital: This implies the implication of computer systems in the taxation process. According to Hellerstein, Buydens et al. (2018), payment of taxes create interaction between taxpayers and government authorities, and the use of ICT can deliver significant benefits to taxpayers and government authorities, and improve financial revenue. For taxpayers, there can be significant costs in visiting a revenue office during business hours to make a tax payment. Even paying by mailed cheques presents a fair compliance cost to taxpayer. For payments made in manual ways, there is a cost of manually processing, and there can be a time delay before a taxpayer's account is updated. On the other hand, payment methods that are fully electronic have been shown to be significantly less costly to administer, and typically enable quicker updating of taxpayers' accounts. In addition, Namaliya (2017) argued that the use e-billing, e-payment, prepaid

metering and mobile money are the innovative strategies that help the collection of water fee revenue in Tanzania. He argued that the use of these systems improved the growth and business survival in revenue collection. In addition, Banda (2015) argued that ZIMRA (Zimbabwe Revenue Authority) website was considered as effective strategy to improve revenue collection in Zimbabwe. Further, Hoekstra, Pereira et al. (2013) ensured that the use of databases are important in the identification and follow-up of the taxpayers and argued that the introduction of mobile payments, internet portals and ATM for declarations and payment of taxes is most important because it allows taxpayers to make payments voluntarily, while reducing queues and compliance barriers. Furthermore, Estevao (2019) highlighted that the easiest way to pay taxes is by using the online tax system like e-filing which can allow online tracking of invoices, digital identification, and using other required systems. He argued that the Republic of Kenya is using the mobile system, M-Pesa, to collect taxes and allow the taxpayers to fill and pay taxes, and there is need of strong ICT infrastructure by integrating all the aspects, processes and procedures of tax collection as planned by the government authorities. Therefore, the integration of the tax collection process to the e-governance initiative is most important to ensure effectiveness in tax collection.

Find new source of revenue: There are many opportunities and potentialities in tax collection, depending on the various taxes that exist within a country. In the developing countries, the source of revenue includes custom and excise taxes, property taxes, administrative taxes, and other source of revenue (Estevao 2019). Therefore, government authorities should ensure that new sources of revenue are discovered to respond to the need of the citizens. In addition, the government authorities must build trust by responding to the need of the citizens with the funds collected to avoid tax evasion.

Furthermore, Akitoby (2018) confirmed that many countries are involved in the reforms of tax administration and suggested ways to tax administration reforms including: management, governance, human resources, establishments of large taxpayer offices, smart use of information management systems, more modern registration, filing, and management of payment obligations, and enhanced audits and verification program.

3.6.4. Strategies for funds allocation

The strategies for the budget execution depend how individuals can manage funds, the management of the project budget and the management of the public funds. Concerning this study, the strategies for the allocation of public funds in the DRC are based on the procedures for public funds allocation namely engagement, liquidation, authorization, and payment, as mentioned in chapter two of this research.

Strategies to manage Project Budget

Burns (2018) suggested strategies to manage the project successfully. These strategies are namely to set a realistic budget, avoid scope creep, track staff time, to know the effective bill rate, use the project accounting practices, and utilise comprehensive project management software. They imply that it is better to review the past budget when setting a budget for a project and communicate the changes to the stakeholders as some aspects of the project can change during the implementation. Also, these strategies indicate that a software must be applied to manage the budget and ensure the management of the staff.

In addition, a project budget must follow steps, with essential strategies, to meet the financial needs. According to Bridges (2019) the first step is to use historical data by looking back to the project with the same objectives and learn from the mistakes and success; then, consider the mentorship of the most knowledgeable and experienced experts in project management to ensure the implementation of the project and check the accuracy of figures. During the implementation of the project, the budget is considered as the baseline to measure the project and need to be maintained. Bridges (2019) highlighted that it is better to have a project management software to track the project and ensure the management of the project budget. This software can be cloud-based and may be upgraded as needed.

Further, Bunner (2017) provided tips to manage the project budget namely create a detailed project plan, check in on the budget, track the project, always be active, and use the project management software to track the budget. These imply that the project should be detailed, and reviewed, and that the budget should be in line with the project plan, and ensure that the project budget respond to the project depending on the monitoring of the project phases. Therefore, it is better to ensure the implementation of a robust project management software that can help to track the expenses of the project and manage the budget carefully.

Strategies to Manage State Budget

There are many processes taken into consideration when making the budget for a country, and these processes take a longtime. According to Alade, Abiodun et al. (2014), the following are the processes for a budget in public sector: revenue forecast and development of assumptions, determination of ceilings/envelopes, development of inputs, pre-treasury board meeting, treasury board meeting, legislative budget parley, presentation to the house of assembly, legislative approval, assent by the governor, implementation of the budget, first quarter review, mid-year review, end of budget session, annual review, and review of the current year.

According to the Ministère des Finances et Ministère de Budget (2010), the resources and charges of the province and other Decentralised Territorial Entities consist of budgetary and treasury resources and charges. Depending on Article 7 of Financial Act No 11/011 of July 13, 2011, relative to Public Finance, in the DRC, revenue cannot be allocated to a particular expenditure. Revenue is used to cover expenditures of the Government. In order to allocate funds to specific expenditures, the government of the DRC considered three means: annex budget, special accounts, or particular accountable procedures in the budget of the central government. It is highlighted in this Act that public expenditure is realised in four steps. These steps depend on public financial rules used in the DRC. They are engagement, liquidation, authorisation, which are considered as administrative steps and the fourth step is considered as an accounting step, it consists of the payment of order at the Central Bank.

The expenditure committed and verified with the Authorising officer will be authorised before the payment. The revenue is considered in the budget of the year approved by the Public Accountant. The expenditures are considered in the budget of the year in which they are effectively paid. The payment of expenditures of the provincial and the Decentralised Territorial Entities are ensured by the Public Accountant. The commitment of expenditures made by the Authorising Officer is limited to responding budget credits and depends on the authorisation as planned in the Finance Act. The expenditure chain procedure is executed as follows: the engagement (commitment) is a note prepared manually by the Credits Manager and sent to the Director of Budgeting for verification. Then, it is sent to the Minister of Budget for approval. The Director of Treasury and Authorisation verify the suggestions made by the Minister of Budget and prepare the Payment order. The Minister of Finance validates the order and request the payment to the Central Bank. There are six stakeholders in the Expenditure Chain Procedure namely the Credits Manager, Director of Budgeting, Minister of Budget, Director of Treasury and Authorisation, Minister of Finance, and Principal Accountant.

The constitution of the Democratic Republic of Congo is very clear about the relation between the central Government, the Province and the Decentralised Territorial Entities in its articles 171, 175, 202, 203 and 204. Article 175 of the constitution requires that the Province retains 40% of the national revenue. However, the allocation of funds to the provinces, fixed by the constitution, depends on the effective transfer and the responsibilities in terms of expenditures. For the administrative and judiciary revenue collected in the province and the taxes collected in the field, 40% are retained in the province. The revenue of custom and excise, and the revenue of taxes collected at the enterprises, 40% are sent to the province depending on its contributing capacity and its demography regarding the modalities determined by the Act of the attributions

of the Ministers of Budget and Finance of the Central Government. For the revenue of petrol products, an allocation of 10% is sent to the generating province for maintaining the damaged environment. The Decentralised Territorial Entities have the right of 40% to the national revenue allocated to the province. This is confirmed by the article 115 of the Organic Act No 08/016 which supports the composition, organization and the application of Decentralised Territorial Entities and their relation with the Central Government and province. The Decentralised Territorial Entities must have 40% of provincial taxes with common interest. The 40% depends on the contributive capacity, the demography, and the area of the Decentralised Territorial Entities.

Alade, Abiodun et al. (2014) highlighted that the budget of the state is run in four stages namely Conceptualisation where the estimation of revenue project, preparation of policy guidelines, determination of revenue envelopes, and other circular activities are carried out; preparation to perform the issuance of call circular, pre-treasure board meeting, treasure board meeting, presentation of house of legislative defense, legislative approval, and signing into law; to ensure the implementation of the budget by monitoring monthly rendition reports, revenue tracking, and budget officers meeting; and reporting depending on the plan as defined in the Finance Act. However, many countries adopted the use of ICT, as a strategy, to ensure efficiency and effectiveness in public funds delivery. The use of ICT has several advantages for the government officials to respond to the needs of the citizens and the business owners. Therefore, the use of E-Governance is needed in order to ensure direct participation of citizens, reduce corruption and enhance transparency, expand government participation and increase convenience; thus, support, promote, and stimulate good governance (Backus 2001).

3.7. Current situation of ICT in the DRC

During the decade 2005-2015, African countries built a lot of information and communication infrastructures (Mubanga 2018). This has resulted in a high penetration of mobile telephony (over 70%) and a significant increase in the proportion of Africans with access to the Internet. In this context, there has also been an increase in the provision of broadband infrastructure: fixed and wireless: growth has been meteoric in mobile broadband infrastructure with mobile broadband penetration rates increasing from 2% in 2010 to nearly 20% in 2014. Although almost all countries are now connected to submarine fiber optic cables, fixed broadband access is still low: less than 1% penetration; while mobile broadband quickly closed the gap and is now showing double-digit growth, from 10.9% in 2013 to almost 20% in 2014 (Mubanga 2018). Despite this somewhat flattering picture, several challenges must be overcome to

improve access and connectivity in Africa. These include, among others: the broadband infrastructure divide as the gap is widening in the provision of infrastructure between developed countries and Africa on the one hand, and between urban and rural Africa on the other; the insufficiency of the national terrestrial fiber network which limits access in under-equipped countries; which has the corollary of making regional interconnection of the terrestrial fiber network problematic between African countries; the high cost of access to ICT infrastructure (submarine cables) and expensive services.

However, the cost of acquiring and / or accessing resources and updating information remains very expensive. For example, in 2013, while Europe had the highest internet access rate in the world with 77% of the population connected, in Africa, with 7% of households connected, was the lowest. In addition, the quality of access is poor in many African countries, reflecting the poor quality and inadequate ICT infrastructure. An important variable in the high cost of access is that many African countries are landlocked and land connections between countries are very poor. The penetration rate at the end of 2016 was 13% which is still very low compared to data from the ITU (International Telecommunications Union) where the average is 90% for developed countries, 40% for developing countries and 29% for Africa, of which the DRC is part (Mubanga 2018). Thus, despite the expansion of access, Africa continues to face several challenges in this area, in particular: inequalities of access, while the price of access to ICT, and in particular the Internet, is on the decline all over the world, it remains significantly high in many African countries , denying equitable access for citizens and preventing African businesses from being globally competitive and the weakness of local content with limited capacity to accelerate the development and hosting of African content.

In the DRC, the growth of telecommunications networks and services has been confirmed mainly with the development of mobile telephony, driven by the investments of private operators and by the implementation of the first section of the National Back Bone of fiber optic. The Internet access segment has grown in recent years with the expansion of mobile telephony and the use of "smart phones"; but it remains very limited and the bandwidths offered in the DRC are very limited, due to the notorious lack of broadband infrastructure. The development of ICT requires a legal and regulatory framework in tune with the realities of cyberspace where information circulates at great speed and technological advances are made at high speed. In 2009, many independent networks, whether declared or not, use direct satellite connections to international providers. The legal framework governing the sector - based on a market model where a public operator develops a reference network providing other operators

with interconnection (IXP) and national and international transmission capacities. The creation of a regulatory authority (Autorité de Régulation de la Poste & des Télécommunications du Congo or ARPTC) by the legislation adopted in 2002 constituted an important transition towards a market organization in line with global developments in the sector. However, the ability of the regulator to exercise its responsibilities in strict neutrality requires the allocation of sufficient resources for its operation in the DRC, which cannot be taken for granted. In the meantime, a decree of the Prime Minister was signed on May 8, 2014 by the Prime Minister for the establishment of a "Cell for the Computerisation of Public Services of the State" (CPISPE) supposed to pilot the creation of the National ICT Agency, but its entry into application in early 2016 more than 18 months late has not yet provided a master plan for computerisation and the creation of the National ICT Agency. The penetration of ICT in all areas of life is very low. The ICT Development Index established by the International Telecommunications Union (ITU), which measures the level of advancement of information and communication technologies (ICT) in more than 170 countries, in 2017, with an index of 0.95, placed the DRC in 171st place out of 176, by considering the 3 sub-indices namely: access to ICT, use of ICT and ICT skills (ANDREEV, GREBENKINA et al. 2019).

In 2012, the Internet penetration rate was 2%; the latest figures that the Regulatory Authority of the Post and Telecommunications of Congo (ARPTC) has just recorded shows us a progression which reached in June 2015, 48% of penetration rate for the mobile telephony and 8% of rate penetration for the Internet on a reputed population of 70 million inhabitants. In addition, in most Congolese administrations and companies, manual processing predominates with the same consequences as before: slowness in processing and ease in falsifying data, delay in consulting files and documents, lack of reliable statistics, struggle of transmitting and communicating information between the various administrations and companies and even within them without a common strategic vision, an overall plan, and without prior consultation. The Administrations and Ministries have developed their own IT solutions (applications and intranet) and thus built IT silos that it will be complicated to urbanise. Further to office automation, operational management applications, in particular those that manage the expenditure chain or taxes, are not entirely satisfactory and do not allow G2G, G2B or G2C communication. Therefore, there is a need of implementing ICT for service delivery in the DRC.

3.8. E-Governance Capabilities in Service Delivery

According to Backus (2001) E-Governance is defined as the application of electronic means to ensure interaction between government and citizens and between government and businesses, as well as in internal government operations to simplify and improve democratic, government and business aspects of Governance. In addition, Behara, Varre et al. (2009) defined E-Governance as the use of modern information and communication technologies by government to improve effectiveness, efficiency and service delivery to citizens and promote transparency. Kumar, Shukla et al. (2013) highlighted that government functionalities, citizen participation and organizational efficiency are enhanced and provided by E-Governance. Further, Kalam (2005) stated that E-Governance provide new governance services and products, enhance the participation of the citizens, improve service delivery, and bring the most underserved to the new sphere of governance. Behara, Varre et al. (2009) added that E-Governance is most important in the empowerment of citizens through access to government information and direct interaction and participation, enhancing transparency and accountability, and the improvement of the relationship between government to businesses, government to citizens and internal relation between the government for effectiveness and efficiency in service delivery. Therefore, the government provides services and implement policies in the government sector, government to government (G2G), government to citizens (G2C), government to business (G2B), and sometimes government to employees (G2E) (Behera, Varre et al. 2009).

According to Heeks (2001), e-government means everything from online government services to the electronic exchange of information and services with citizens, companies and other branches of government. E-government has traditionally been regarded as the use of ICTs to improve public agency efficiency and provide public services online. The e-government framework was later extended to include government use of ICTs to carry out a range of interactions with citizens and businesses, as well as open government and ICT data, to enable governance innovation (Gupta and Jana 2003).

E-government is defined as using ICTs to provide public services to citizens and companies more efficiently and effectively (Marche and McNiven 2003). Bannister and Connolly (2012) stated that e-governance is the use of ICT in government operations and the achievement of digital public ends. The underlying principle of e-government, which is supported by an efficient institutional framework on e-government, is the improvement of public sector internal functions by reducing financial costs and transaction times, so that workflows and processes can be better integrated and resources can be used efficiently in the various public sector agencies, with a view to sustainable solutions. Innovation and e-government can make

governments around the world more efficient, deliver better services, answer citizens' demands for transparency and accountability, and be more inclusive and thereby restoring citizens' trust in their governments (Scherlis and Eisenberg 2003).

In addition, e-government applies the functions and procedures of the government with the aim to enhance efficiency, transparency and citizen participation by means of information and communication technology (ICT) (Halachmi and Greiling 2013). The e-government definition shows how ICTs are used as a tool to support good governance development. Appropriate use of e-Government enables greater efficiency and effectiveness in governmental tasks, improves processes and procedures, improves the quality of public services and enhances the use of information in decision-making processes and improves communication between different governmental offices (Fang 2002). E-government promises to improve the efficiency, responsiveness, transparency and legitimacy of governments and to create a rapidly growing goods and services market with a range of new business opportunities (Ndou 2004). According to Microsoft (2017) the tax administration is currently being impacted by a number of technology trends, including Big Data, analytics, AI, machine learning, the Internet of Things (IoT), mobility, and cloud computing. They can increase taxpayer satisfaction and empower tax agency employees as well as optimize operations and modernize services when taken individually or in combination. Sousa (2018), highlighted that none of the sustainable development issues such as life sustainable food security, universal clean energy, sustainability, sustainable water security, and healthy and productive ecosystems, could be achieved without good governance. Therefore, there is need to guarantee the public's right to information and access to government data, in order to reduce corruption and ensure accountability.

A popular way to conceptualize e-government is through the distinguishing of three spheres of interaction with technology (Bhuasiri, Zo et al. 2016). Interaction between governments focuses on the use of technology to enhance the internal efficiency of public bureaucracies by, for example, automating routine tasks and quickly sharing information among ministries and agencies. Interactions between government and business usually involve using the Internet to reduce government costs in purchasing and selling goods and services from businesses. The interactions between government and public use the Internet for delivering online public services and transactions and improving service design and delivery, through the inclusion of rapid mechanisms for electronic feedback, such as immediate polls, Web surveys and emails. Thus, e-government defines clearly the following nomenclatures: Government-to-Government (G2G) requires the exchange of data and electronic exchanges among public actors. It covers exchanges at national level between the intra- and inter agencies, and exchanges between the

national, provincial and local levels. Government-to-business (G2B) covers transactions specific to the business (e.g. payment, sale and purchase of goods and services) and the delivery of corporate services line. Government-to-Consumer/Citizen (G2C) involves initiatives designed as public service consumers and citizens to facilitate people-to-government interaction. This involves interactions in the delivery of public services and in the consultation and decision-making process.

E-government also develops along a similar path that begins with broadcasting, interaction, transaction and finally integration. The presence of the government would be done by static web pages and unilateral communication in broadcasting mode. Similar to a brochure or leaflet is the size of earlier government websites. The public's value is that government information is open to the public; processes that improve democracy and services are described and more transparent. The government can also internally interact (G2G), by electronic means, distribute static information.

There are several applications which stimulate interactions between government and the public (G2C and G2B). People can ask questions by e-mail, search engines, download documents and forms. It is a fact that (simple) requests can be completed online 24 hours a day. This would normally have only been possible during the opening hours at a counter. Internally (G2G), public authorities use LANs, intranets and emails to communicate and exchange data. The public could conduct (financial) transactions with the government at the transaction stage.

This requires higher processing capabilities, as well as payment gates and security. Full transactions without going to an office can be carried out in this situation. E.g. online services include the provision of income tax, property tax filing, license extension and renewal, visa and passport and online voting. Phase three is complicated by security issues and customization. For the legalization of transfers of services, e.g. digital (electronica) signatures are necessary.

Finally, e-government reaches a stage of integration, where departments work together to avoid duplication of efforts in a significant way and a single-stop contact point is established to handle the procedures of all departments concerned. In this period, all information systems are integrated in one (virtual) counter and the public can get G2C and G2B services (Ronchi 2019). However, the application of E-Governance depends on the different layers. According to Mohammed (2017), the various layers of E-Governance are divided into two categories: framework or architecture layers and layers to cover the challenges. The architecture layers include infrastructure layer which contains different infrastructures like network, storage, backup, and other IT infrastructures; E-government or Integration layer for the integration of different services or organisation data into one web portal; data layer, which integrates the

database from different services of the government; and the application or information layer, which includes applications used for e-governance. The layers to cover the challenges comprise Access layer which involves end user and communication channels applied by users to access government services; E-Government layer, where web portal, service oriented architecture, and authentication portal are comprised. The organisation layer includes the application layer, business process layer, data layer, and infrastructure layer; and the National E-Governance Strategy layer Mohammed (2017). In addition, Behera, Varre et al. (2009) highlighted that the various layers of E-Governance are namely Client layer which involves users; Presentation layer which concerns user management and personalise features; Channel delivery layer which contains the secured gateways; Security layer which involves security proxy server and the URL; Infrastructure service layer involves the cloud computing like IaaS, PaaS, and SaaS; Business layer concerns business services, user management, content management services, workflow services, search, and notification; Management and Monitoring layer contains application, network, infrastructure management, integration to various departments like data level integration, application integration, service level integration; Data layer includes data server, document repository, and directory server; and Integration layer which contains service communication infrastructure.

Further, there are different maturity models of E-Governance. Fath-Allah, Cheikhi et al. (2014) defined E-Governance Maturity Model as a set of stages that determines the maturity of the E-Governance portal. It works as a guide for the quality of the e-portal. All these maturity models comprise the different stages applied in E-Governance. Below is the list of maturity models, with different stages, as presented by Fath-Allah, Cheikhi et al. (2014).

Table 1: E-Governance Maturity Models

Maturity	Stages
Layne and Lee Maturity Model	<ul style="list-style-type: none"> - Catalogue - Transaction - Vertical integration - Horizontal integration
Andersen and Henriksen Maturity Model	<ul style="list-style-type: none"> - Cultivation - Extension - Maturity - Revolution
United Nations Maturity Model	<ul style="list-style-type: none"> - Emerging information - Enhanced information services - Transaction services - Connected services
Alhomod Maturity Model	<ul style="list-style-type: none"> - Presence on the Web

	<ul style="list-style-type: none"> - Interaction between the citizen and the government - Complete transaction over the web - Integration of services
Hiller and Belanger Maturity Model	<ul style="list-style-type: none"> - Information - Two way communications - Transaction - Integration - Participation
Almazan and Gil-Garcia Maturity Model	<ul style="list-style-type: none"> - Presence - Information - Interaction - Transaction - Integration - Political participation
Cisco Maturity Model	<ul style="list-style-type: none"> - Web presence - Interaction - Transaction - Transformation
West Maturity Model	<ul style="list-style-type: none"> - Bill-board - Partial-service delivery - Portal or the one stop shop portal - Interactive democracy
Moon Maturity Model	<ul style="list-style-type: none"> - Simple information dissemination - Two-way communication - Service and financial transactions - Integration - Political integration
World Bank Maturity Model	<ul style="list-style-type: none"> - Publish - Interact - Transact
Deloitte and Touche Maturity Model	<ul style="list-style-type: none"> - Information publishing - Official-two way transaction - Multipurpose portal - Portal personalization
Howard Maturity Model	<ul style="list-style-type: none"> - Publish - Interact - Transact
Shahkooh Maturity Model	<ul style="list-style-type: none"> - Online presence - Interaction - Transaction - Fully integrated and transformed e-government - Digital democracy
Lee and Kwak Maturity Model	<ul style="list-style-type: none"> - Initial conditions - Data transparency - Open participation - Open collaboration - Ubiquitous engagement

Siau and Long Maturity Model	<ul style="list-style-type: none"> - Web presence - Interaction - Transaction - Transformation - E-democracy
Wescott Maturity Model	<ul style="list-style-type: none"> - Setting up an email system and internal network - Enabling inter-organizational and public access to information - Allowing 2-way communication - Allowing exchange of value - Digital democracy - Joined-up government
Chandler and Emanuel Maturity Model	<ul style="list-style-type: none"> - Information - Interaction - Transaction - Integration
Kim and Grant Maturity Model	<ul style="list-style-type: none"> - Web presence - Interaction - Transaction - Integration - Continuous improvement
Chen Maturity Model	<ul style="list-style-type: none"> - Catalogue - Transaction - Vertical integration
Windley Maturity Model	<ul style="list-style-type: none"> - Simple web site - Online government - Integrated government - Transformed government
Reddick Maturity Model	<ul style="list-style-type: none"> - Cataloguing - Transaction
Accenture Maturity Model	<ul style="list-style-type: none"> - Online presence - Basic capability - Service availability - Mature delivery - Service transformation
UK Maturity model	<ul style="list-style-type: none"> - Basic site - Electronic publishing - E-publishing - Transactional - Joined-up E-Governance
Netchaeva Maturity Model	<ul style="list-style-type: none"> - Online Web site - FAQs and email systems - Forums and opinion surveys - Online services - One stop shops

(Fath-Allah, Cheikhi et al. 2014)

3.8.1. E-governance Models

As a result of the different initial conditions, design, expectations and perspectives of better methods of governance, e-government models in developed and developing countries are fundamentally different (Fakeeh 2016). These models have different characteristics depending on the situation and functions of the Governance: standard health and information services, legislation and enforcement, access to officials and offices in government, address common environmental issues via the digital platform, warns the public of any predictable disasters, such as seismic events and floods. The following are the five fundamental e-government models:

Critical Flow Model: According to Saha, Bhattacharyya et al. (2010) an e-government critical flow model is a digital management system which operates in public and private domains. In this model, information such as: violations of human rights, security threats (in the public and private sectors), information on corruption and the green rates of a company has been addressed and accessed.

The basis of this model is the distributing of key value information by means of convergence media or ICTs to the broad public (Fakeeh 2016). This model requires users to understand and strategically use the importance of any data set. It can also involve establishing a position for users who can make a major difference in the implementation of good governance with the accessibility of specific data (Surya and Amalia 2017). The strength of this model is the built-in unique characteristics of ICT that make time and distance redundant. This concept reduces the number of exploitative governments possible because of the lag between data availability between users.

According to Altameem, Zairi et al. (2006) this model is used for the use of the government's assessment of the people, investigation and investigation reports, for the provision of records of violations against human rights and for prosecution of government officials to citizens and non-governmental organisms concerned, to provide information to the electoral bodies about corruption by specific government officials or ministries.

Some projects using this model were successful: The human rights portal in Bangladesh supports changes in human rights across Bangladesh's political limits. This portal helps to resist any social repression for women, marginalized communities, children and the public (Lewis 2011). International Transparency Corruption News operates the daily corruption news website, which reports about all corruption cases worldwide. The Central Vigilance Committee in India has a website which provides free access to information on government officials involved in public corruption lawsuits (Jain 2018). This website allows people to lodge a complaint in accordance with the jurisdiction of a public servant.

Comparative Analysis Model: The aim of this model is to explore information both in private and in public spheres and to compare it with the information that is known, which results in premeditated knowledge and views (Fakeeh 2016). It systematically assimilates, manipulates and campaigns for changes in governance measures and policies using new knowledge products. Benchmarks must be made in order to compare past and current events or to understand the effectiveness of the intercession in two separate situations. The strength of this ICT model is that it can store and instantly share data across every network and beyond hierarchical or geographical barriers, in a retrievable way (Fakeeh 2016).

In order to manipulate how decisions are taken in future, the Comparative Analyse Model lays down conditions of prior preference, particularly in legal and court decisions. It is used to evaluate the performance of a particular civil servant, department or government and allows informed decision-making at all levels of government by providing the background to know how and the justification for the course of action in the future (Sharma, Morgeson III et al. 2018). This model is also used to measure the effectiveness of current policy through learning from the principles and measures that guided e-government in the past (Chatfield and Alhujran 2009).

During ICT access to local information and global products at extremely low cost, developing countries can make use of this model to their advantage. In the absence of strong civil societies and a small public memory, this pattern can become useless or ineffective (Fath-Allah, Cheikhi et al. 2014). This model is based on the availability of additional information for comparison and on people's attitude to study and to develop self-explanatory or strong analysis arguments (Chatfield and Alhujran 2009).

This model is used to conduct research into environmentally friendly Indian industries in India. The Center for Science and the Environment in India (Fakeeh 2016). The main aim of this project is to promote a fair and independent review of the environmental performance of different industries. It seeks to achieve a perspective that supports industry accountability and encourages poor performers to compete. Following evaluation, these companies share their performance online and share their mass views in deciding the greenest industry. A benchmark for evaluating the performance of individual countries regarding their organizations is the UNDP human development index report which uses stored statistical information concerning public health, literacy and national incomes.

Broadcasting/Wider Dissemination Model: This e-government model is based on information distribution that is essential to improved governance (Fakeeh 2016). The model's work is to reach a broader public domain by using ICT, as this information is already public.

An informed citizen quickly understands the governance mechanism and can decide soberly in the exercise of his duties and his rights (Lee-Geiller and Lee 2019). The areas in which these informed citizens ensure that the right methods of governance are used without fear or favor are likely. The Governance Radio Model unlocks an alternative channel for people to access and distribute data from outside sources to the local or public domain. When this model becomes widely spread, the failure to communicate eventually corrects and provides people with information on the government in order for them to reach consensus and decide the course of action in the future (Rose 2005).

This model is essential to the public domain, names, contacts and addresses of officials in the government, the on-line sharing of government legislation and laws, important online judgments/judicial statements, and information on government plans, such as online budgets, security conditions and expenses.

The official website for the Brazilian national e-government offers comprehensive government information and integrates citizens into South African e-government (Fourie 2013). There is a Chapter 2 Network in South Africa that is a center for clear communication and information for social justice. This network distributed information to civil society organizations involved in social justice on research and intelligence, support campaigns and legislative scrutiny. Earth Negotiations Bulletin is a global network service that brings international environmental negotiations and decision-making to the attention of citizens worldwide. It plays a primary role in recording international decisions and taking appropriate measures for governments and people, especially in the developing countries (Fakeeh 2016).

Interactive-Service Model/G2C2G: E-governance Interactive Service Model / G2C2G interactive service system can also be referred to as government model to citizen model to government (Maleka 2016). This model consolidates different models of e-governance and enables people to participate directly in digital governance (Fakeeh 2016). In this model, ICT is used to include all people into the knowledge network, allowing them to communicate interactively. G2C2G fully encompasses ICT potential and uses it to increase transparency and efficiency and involvement in government functions and to save on decision-making time and costs. Citizens are able to access all government services through this model as it creates a channel for government procurement, concern-sharing and tax returns.

It is applied when electronic balloting is carried out while government officials are elected; reports and complaints are filled out by citizens to various government bodies, a comprehensive channel of communication is set up, such as online dialog and video conferencing, opinions and

public debates on issues affecting the citizens of the everyday lives, and using online operations, such as tax filing, collection of revenues and transfers of payments.

In Uttar Pradesh, this e-government model was used to connect rural cybercafés to meet citizens' everyday needs, using a website (Fakeeh 2016). This website offers services such as online registrations and applications, copies of land maps and redress of public complaints. In the Philippines, the model was also used as an online system designed to assist in the clearance of ports, the payment of duty and the delivery of orders for ships to quit. In order to maximize revenue collection, this digital platform reduces cases of graft within government weapons.

Mobilisation and Lobbying Model: This model is the most common E-governance model and has always been of use for civil society organisations, particularly in developing countries, to influence global decision-making procedures (Saha, Bhattacharyya et al. 2010). The models of mobilization are strategically based, the information flow directed at strengthening action and building strong allies. It takes a proactive approach to building virtual communities that encourage strong information sharing and sharing of similar values (Fakeeh 2016). This model and the resources and ideas gathered together through virtual networking methods are the diverse elements of these virtual communities.

This model is being used to conduct electronic ballots during the election of government officials; to fill out reports and grievances by the citizens to various government bodies; to establish a comprehensive channel of communication such as online dialog and video conferences; to hold opinion polls and public debates on the issues of the day-to-day citizens; and doing governance functions in an online platform such as filing of taxes, revenue collection, and payment transfers. Groups that require decision makers to recognize their concerns are requested to be established; advocate for the rights of the marginalised parties to decision-making bodies; encourage public discussions on global issues and themes at any forthcoming conference, and advocate greater participation in decision-making processes.

3.9. Use of ICT for Transparency in Public Funds Management

ICT can help governments to reinvent themselves and to run cheaper, faster, better and to produce new outcomes in their activities. Despite limited numbers there are ICT hardware and software such as computer, internet, LAN, fixed and mobile phone and email used by civil servants in the office in tax administration activities like tax assessment, tax collection, data encoding, tax planning and monitoring activities. Regarding usage of frequency, computer and fixed phones are the highest used form of ICT and it is repeatedly used by employees for tax administration activities. On the other hand, internet and mobile phones are often and

sometimes used by employees respectively. According to Onigbinde (2014), to open the culture of transparency and accountability in the budget execution in Nigeria, the government initiated a project named BudgIT as Nigerian Hub accessible to citizen as an open data initiative to make the budget accessible and available to all, as the citizens need to know how the budget is executed. In addition, since 2011, the government of Republic of Kenya adopted the use of Open Data portal as a strategy for enhancing transparency and ensuring the innovation and efficiency of the government services while in USA and UK, the Open Government Data portals were adopted and established since 2009 (Danida 2012). In addition, Wilson (2019) added that the system monitoring customise alerts and notifications, and auto-discover the system, provide automatic update measurements, easy graphical user interface, and easy installation and operation. According to Kekana (2011), Electronic filing system allowed the taxpayers to electronically file their taxes through the South African Revenue Service (SARS). To reduce the number of manual returns, the system provides secure electronic tax return submission services, where users cannot only submit their tax returns online, but they can also make secure tax payments and update their personal information.

3.9.1. Use of Website and Web for Public Funds Management

The use of a website in tax collection can provide a lot of advantages, it can help taxpayers to be informed about the amount they are supposed to pay and helps them to pay their taxes wherever they are. Jackson (2018) highlighted that a website increases transparency because people are able to search online and find the details about specific items. This can also be applied in fund collection and allocation because all the information regarding the funds collection and allocation processes are displayed online and it is easy to access. Further, the number of internet users is increasing day by day with many facilities. Internet is used with many people to advertise and display their products online more on television. Actually, many organisations and companies are using internet as a mean for advertising and allows interaction between the customers and sellers. All this is achieved through the use of websites and/or the web-based system. A website can be well used in public funds management by allowing tax payers to access the required information about a specific tax. It can also allow interaction between tax payers and government authorities and share information related to public funds online. This will satisfy both parties, tax payers and the government authorities. Also, the Web based system is most important in public funds management to deliver services and information to users. With a web based system, tax payers can be informed about their taxes online and pay using the online payment system. Another major point to consider while using a website and

the web-based system in public fund management is the use of search engines. Customers can easily access the required information with the use of this important tool. Tax payers can search for the tax and make a payment online which is most convenient as it avoids interaction between the tax payers and government authorities.

According to Arthur (2018) databases software are important in tracking valuable information and to help employees to easily access the data. Among these advantages, web-based systems help in Saving Money because instead of using the software that need to pay for license for each computer, the company will use online database which will not only reduce the cost but also avoid the company or organisations investing in servers to store data. Online databases are also flexible because you only need to purchase servers as you need or eliminate them when they are no longer in need and pay only for the amount of storage used. In addition, with the website you can shift the technical support to the one who is managing it. If there is a technical problem, the company in charge of the management of the database will take care of it without paying a professional in ICT. Further, a website provides easy access to the information anytime, anywhere, using different devices because the information is available anytime, which improves production, and helps to improve the efficiency of the service (Arthur 2018).

Thus, using a website and/or a web based system for fund collection and allocation has a great benefit because it allows the tax payers to be well informed about the taxes, and support the transactions; also, the allocation of funds will be realised easily, with no complain, because everybody is well informed about the amount due. The transaction can also be done online or by using the bank transaction and share the related information with the stakeholders.

To ensure that the website or web-based system is working according to your needs or objectives, Nilsson (2017) suggests that it is better to hire a website designer who is able to deal with the following elements: the first element is navigation which includes a well labelled navigation bar or a menu that shows a list of the different web pages; because users access and use the website accordingly. Secondly, it is better to make sure that the website is providing an accurate message, as it is said that too much data intoxicate, the web pages with too much content will also look messy and can seriously confuse the user in reading and accessing information. To avoid that from happening, it is best to streamline the content wherein website designers can easily incorporate the text into their design. In addition, the search engine optimisation and the organisation of the website and the web-based system is most important because, just as when we read in a book, it is comfortable to read a web page from left to right,

top to bottom (Nilsson 2017). Furthermore, the website and web-based system allow interaction between the users. It is possible to share information and get feedback, have an online tour and check what is going on in all the sides. Using a website and a web-based system in public funds management can be most important because it will allow the online transaction and support interaction between the bank and government institutions. Payment can be made at the bank and the concerned institution.

3.9.2. Use of Mobile Phones for Transparency

Now days, people are using mobile phone to be able to communicate. With the mobile phone you can use the Short Message Service and other services like social media, calling one another and making mobile money transactions. When a phone is connected to the internet, you can do more than one thing and communicate via your email, browsing the internet to find information, save business cards, sell or buy online products, or use applications to make hotel reservations or flights. You can also use certain applications, to check the weather, or read the news. The mobile phone has become a very important tool in our society. This device has revolutionised the means of communication and allows everyone to be able to communicate with anyone, and anywhere.

Indeed, mobile phone is most important in today's society as its impacts on living conditions of the community. Actually, the mobile phone is used in almost all sectors of life with specific software developed to perform particular tasks. It is used in the health sector (mHealth), in Agriculture (mAgriulture), ensure the good governance and to maintain transparency and accountability. According to Chêne (2012), the mobile phone allows data collection, information sharing, and access to information to facilitate the flow of information between the government and citizens, between citizens, as well as between government institutions. There are also many mobile phone applications that are developed to support the citizen to provide instant feedback on the quality of services and to report concerned and affected areas (Chêne 2012). According to Hellstrom (2010) as cited in Chêne (2012), the mobile phones is most important in detecting corruption. With the mobile phone, the corruption cases can be recorded and sent to the concerned services. The mobile phone has the ability to be reachable at any time, due to its mobility and network infrastructure, as they can reach the deepest areas. With the mobile phone, there is possibility of real-time interactive dialogue, compared to other traditional media. The mobile phone has become part of the citizens' lives and makes them adaptable to a wide range of their needs and services as it has the possibility to access other media like internet

and has the ability to integrate other services such as mHealth, mGovernance and mTransparency which increase the possibility of easy access to services. Mobile phones are now affordable as they are considered an integrated part of the citizens' lives. The integration of the internet technology to the mobile phone technology has reduced the barricades for poor people to access the mobile phone (Chêne 2012). The mobile phone has proven its efficiency due to its ability of being reachable, and due to real-time interaction, affordability and access to information. In addition, the mobile phone enables the citizens to be mobilised in the anticorruption campaign as it can reach the community everyway, even in the remote areas (Chêne, 2012). It has facilitated the introduction of other services, like mobile money, to make online transactions, without approaching the bank. According to Mohammed (2019) the mobile money App is considered as an electronic wallet service which allows users to send, receive, and store money using the mobile phone. Mobile money is popular in many developing countries. It is an alternative to bank accounts by making easy and safe electronic payments (Mohammed 2019). In Afghanistan, mobile money is considered as an important tool for curbing corruption because it hampers the cash transfers, skimming bill payments and the skimming salaries in public and private sector (Sidamon 2016). According to Blumenstock, Callen et al. (2015), the mobile money is used for paying salaries of the employees in some countries. He highlighted that National Police of Afghanistan discovered that 10% of police officers in their workforce were ghost officers and did not exist but they were paid and their salaries were used by others; the view was implemented for using the mobile money and many police officers believed that their salaries were increased because of a significant increment. The mobile money system has been so successful because the police officers discovered that during the payment of their salaries (Blumenstock, Callen et al. 2015). Mundia (2014) launched an SMS platform in Zimbabwe to report the cases of corruption. The system allows the victims and witnesses of corrupted activities to send SMSs to the platform. The received information was processed on a secured web application and accessed only by the staff of Transparency International Zimbabwe. This information was used to implement anticorruption strategies and public policy for corruption (Mundia 2014). In addition, the Government of Albania, via the minister of State responsible for Anti-corruption initiated an SMS campaign to send text message to citizen who received the service to the state-run hospital to ask them if they were victims of bribe or other forms of corruption at the hospital. The text message was sent directly to the mobile phone of the person who received the treatment or his responsible. Many persons reported the corruption problem in Service delivery (Kunicova 2015). The table 1 presents the list of some projects that was successful in using ICT to enhance transparency.

Table 2: Example of ICT Projects for Transparency

Project	Description	Country
Chanjo	Chanjo is an ICT project to mobilise people and to raise awareness. Social media, Mobile phones and Arts are used in this case. Tanzanian musicians organize music tours and compose and distribute songs that bring awareness on corruptive behaviour.	Tanzania
BungeSMS	SMS and the Web are used in order to promote direct interactions between the governments and citizens. Specifically, SMSs are sent to ask questions to parliamentarians, which depict the kind of interaction that exists between citizen and government.	Kenya
E-Procurement System	Mobile phones are used for online shopping and electronic procurement processing.	South Korea
E-taxation	To avoid direct interaction between tax payers and collectors, e-taxation is used for tax collection and payment for more transparency and efficiency.	Tunisia Sao tome Cape Verde
OPEN	The online tracking system of the municipality licenses allows the individual online applications. The system has an interface that explains to users the anticorruption drive elements. It displays the anticorruption index of the services and provides information concerning rules and procedures followed in granting municipality licenses, monitoring of permits, and license applications' progress	South Korea (Seoul Municipality)
The Bhoomi	The government of India launched the Bhoomi Project for online land records access at Karnataka. This project illustrates the use of	Karnataka, India

	automation to minimize civil servants' land records handling.	
Electronic procurement	In Chile, all traceable records of government transactions are kept online in order to increase transparency and probity	Chile
Central Vigilance Commission	The Central Vigilance Commission of India has launched a website to fight corruption via the internet.	India
Public Alert System (E- Fulusi, Tanzania Police)	Tanzanian police implemented an SMS alert system to allow for anonymous reports on crimes or wrongdoing by police officers, or to request emergency services.	Tanzania
Emergency / notification	In Kenya, post-election 2007, threats and misinformation were floating around using SMS. The Government authorities intervened with the help of mobile operators and sent out a mass SMS stating.	Kenya
Other Shorts codes	In Kenya and Tanzania there are some designated short codes for Crime Stoppers (111) and Anti-corruption (113). In Tanzania, if you call 113 you will be connected to the Prevention of Corruption Bureau (PCB). In Uganda, you can leave anonymous complaints on a special hotline (347387) to the Inspector General of the Government (IGG) for rapid response to complaints. Kenya Anti-Corruption Commission (KACC) has a similar system in place.	Tanzania, Uganda Kenya

eSoko Project (e-Rwanda, Ministry of Agriculture)	Agricultural Market Price Information System that allows farmers to access prices of agricultural commodities in different markets in Rwanda. It is being implemented by the patronage of the Ministry of Agriculture of Rwanda.	Rwanda
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(Chêne 2012)

3.9.3. Use of Radio and Television for Transparency

According to Sehba (2016), Media is the plural form for medium and involves the collective communication sources or mediums including television, radio, newspapers, internet, social media sites, and various relevant sites and blogs. The dissemination of information and knowledge is the main purpose of the media. Radio and television impact the living status of the community in many ways. Arnold and Lal (2012) listed the three mechanisms of media that influence the perceptions and norms of public. The first one is that media acts as a watchdog to monitor the behaviour of government officials and to protect the interest of the public by ensuring transparency and accountability. In this case, the media reports the corruption, abuse of power and misadministration of the government. Arnold and Lal (2012) highlighted that the adoption of ICT is most important for development and in improving public engagement which enhance the good governance and productivity. In addition, public engagement and the community development can be put on the public and politic agenda in order to discuss the problems which affect the public and thereby find the solutions in this regard. Secondly, the Agenda Setters as a mechanism for media influence, is a major tool to expose corruption acts on the political and public agenda and to attract people to get involved in society or community problems (Arnold and Lal 2012). The main issue in discussing about the community problems without the implication of media is not easy because of the consequences that can impact them while discussing matters publicly. Besides, if media dispose a problem to discuss about corruption, the community will be interested and put efforts into the discussion to identify the corrupted officials and understand the cases of corruption. Also, media can put/apply pressure to force government officials to consider the rules and regulations of the country (Arnold and Lal 2012). Media has a major role to play in curbing corruption in the public sector, especially in the democratic countries because it opens the voice of citizens. In countries where media is operating freely and performing the role of watchdog, corruption cannot be assumed to affect the public at high level. This means that corruption is not only the result of poor leadership or the corrupt behaviour of government officials, but also the incapability of the major forms of

media to prevent the spread of corruption, to denounce the corrupt behaviour of government officials and to hold the leadership accountable (Omojola 2010). Furthermore, media enhances the public forum as the mechanism which flows as interaction between the government and the citizens to ensure the discussion on accountability and legitimacy (Arnold and Lal (2012). With the public forum, citizens have the possibility of expressing their voice and presenting their opinions to the government officials, and to exchange views on the issue of corruption. In a democratic state, the citizens have the freedom of expressing their voice to the media and to suggest the solutions to their problems; but citizens are usually unable to express and monitor the corrupt behavior of the government officials and influence them to discontinue with the corrupt practice (Omojola 2010). Therefore, the media should usually act as a catalyst to influence the citizen to monitor the corrupted civil servants and political leaders. It is also playing a major role in our daily lives because it helps us to be informed about what is happening in society and to connect us with the rest of the world. Another role of media is to trade and advertise, this can be considered in curbing corruption, as citizens can organise media to be involved in the anticorruption techniques which can help them to fight corruption by using the television or radio. According to Sehba (2016) media like television and radio help everybody to be informed about different affairs on what is happening around the world. This may help the citizens or the government officials to be informed about the corruption issues if the media is involved or have the possibility of addressing the corruption acts on Radio or Television. In addition, Sehba (2016) highlighted that media gives the immense knowledge and transmits information, and raises the consciousness by providing information that can be analysed and understand what is wrong and right. In a democratic state, media acts as a weapon for democracy, and a watchdog to create public awareness to defend the public interest against the malpractice of political officials and civil servants (Roy 2015). Also, media raise voice against the social evils like gender discrimination, corruption, and dowry by making the citizens aware of what is happening in the community and involving them to fight against such practices and educate the society. Additionally, media provides a true picture of the event or records the telecast (Sehba 2016). Media, as the pillar of democracy, can counteract oppression and injustice in the society. It can hinder politicians to take advantage of their position by misusing public assets or by siphoning public interests for their private gains. Also, media facilitates the government to detect what is happening in the management of the public assets, especially by the ministers, who can be suspended, or be subjected to jail (Roy 2015). According to Sehba (2016), media gets the message across to a wider audience and helps to target the message to the concerned persons. It provides exposure and free publicity for

announcement, event, news, or request, not only for private but also for a group and can help to establish a group as legitimate to increase the profiles among the decision makers and shape their opinions.

Further, there is much potentiality of integrating radio and television in the fight against corruption. What is important to know are the mechanisms that can be considered or applied in using media to engage citizens and government officials for successful collaboration. The main points to consider when using media like radio and television to curb corruption is to understand your audience and to know how these media work. It is better to consider the source of information, how and where do the media get the information, and the appreciation of the media itself. Arnold and Lal (2012) characterised the audience according to their levels of illiteracy and influence. In the rural areas, radio and television are excellent because these media are cheaper and are followed by all the layers including the illiterate; while the educated, leaders, youth, and other influential people use newspaper and social media. Thus, radio and television are better to be used in the rural areas than the city or town. In addition, they are most important in the city and town because the debates concerning corruption that can be argued on the radio and television can be intensified and finished on other media, like social media (Arnold and Lal 2012). In addition, the consideration of the audience and the type of corruption is most important when engaging the media to deal with corruption. Among the most considered ways in which Kenyans are using to fight corruption, the radio is most used, with 90 percent of the population of Kenya receive the corruption news on radio, which is actually considered as the source of information to engage the population and to raise awareness of their rights (Transparency International 2018).

According to Arnold and Lal (2012), the types of corruption (political, grand or petty corruption) and the company objectives, are the most common elements to consider while making efforts on the use of radio or television to curb corruption. On the other hand, the understanding of how the media work matters. After the identification of the audience, it is better to know how to interact with them. Arnold and Lal (2012) suggested the implementation of a reform minded coalition of media partners with editors or journalists to enhance the anticorruption efforts. Some steps are considered regarding the formation of coalition. These include the identification and specification of the issue by defining the objectives of the concerned organization or company, to map the relationships and stakeholders to identify the significant partners in the media, form a coalition by convincing the media partners to join the

coalition, and the sustainability of the coalition to ensure that the anticorruption coalition is not only limited to one issue, but can become more powerful and sustainable if they work together (Arnold and Lal 2012).

Furthermore, media plays a major role in fighting corruption as they reduce the monopoly power of the government officials successfully and enhances transparency and accountability in public management. However, media has to be strengthened in order to be successful and sustainable in curbing corruption. Literature provides some suggestions on how media, like radio and television, can be strengthened. Stapenhurst (2000) suggested that the privatisation of the state-owned media can increase the ability and the capacity of these media to curb corruption. In addition, Nogara (2009) confirmed that private ownership of the radio and television is usually linked to the level of performance and accountability of the government officials.

Sowunmi, Adesola et al. (2010) check up with the demonstration of what is at the heart of transparency and that accountability is the access to information. Media provides the needed information to the citizens which facilitates the public awareness. In addition, the right to information is associated with the accountability of the government officials (Stapenhurst 2000). However, to make the authenticated statements about corruption journalists need to provide verified and reliable information (Arnold and Lal 2012). Additionally, it is better to consider media as having the possibility of responding to the people and government's needs and actions to make sure that journalists play a major role in preserving and promoting anticorruption actions. However, to ensure the accountability of media some problems can occur and become threats to media accountability. According to Stapenhurst (2000), the implementation of programmes specifically designed to undermine or underestimate the perception of media polarisation between the government and private which leads to the inadequate media accountability; the reluctance of the government officials to release information and the lack of freedom of expression to the media practitioners causes the lack of accountability of media. Other factors that can affect media, especially radio and television, to be unaccountable is the journalism culture and capacity to deal with corruption. According to Arnold and Lal (2012) journalists in many countries are used to work as watchdogs, public forum, and agenda-setters and do not have the ability to use investigation techniques to determine if the radio or television can be a useful tool to curb corruption. Thus, changing the journalists' culture and training them in working as watchdogs is necessary to improve their

ability to fight corruption.

Moreover, the role of media cannot be ignored in curbing corruption because radio and television are used in many ways to denounce the corruption acts and to create awareness. Freedom of media is necessary in good governance and the use of radio and television is important in reporting and investigating corruption acts and in raising public awareness (Stapenhurst 2000). However, for media to be effective, freedom of media is needed to allow it to have access to information. Journalists have to work freely, without any intimidation from government officials. In addition, there are factors that influence or affect the role of media to work effectively to combat corruption. According to Sowunmi, Adesola et al. (2010), the access to information, the freedom of expression to access, publish and verify information, the independency of media and the possibility to access financial sources of information are among the main factors that influence or affect the performance of the media. The three other factors as highlighted by Sowunmi, Adesola et al. (2010) concern the media outreach, which is most important when reporting corruption cases effectively. Media is able to reach and inform the audience. Competition in the media is also considered because it allows the media to work strongly for anticorruption and thus, hinder corruption. Credibility of the media is also another factor that helps to curb corruption. It influences the media to work effectively on the issue of corruption.

Media opens doors to people to bring their opinions, for journalists to make investigation, and for conducting debates. Freedom of press is required for the journalist to work and express a democratic environment. Access to information is among the obstacles of the journalists in their investigation because government officials and political leaders used to hide information on sensitive subjects while media is the pillar of good governance when the right of information is given. If citizens are given the possibility to express their voices, then the right to information is ensured to support the citizen to control functioning of the government (Srivastava 2016). Before the implementation of the well-known source of information like media, citizens were struggling to gain information because they were dependent on other sources like rumours, but with the implementation of the act to right to information, which gives the possibility for the citizen to ask information to the right source. Citizens can attain a certain level of transparency in the public sector (Srivastava 2016).

Media is effective in implementing an anticorruption programme because it helps to report incidents of corruption and raise awareness. According to Stapenhurst (2000) as cited in

Sowunmi, Adesola et al. (2010), the way in which media serves as an impediment to corruption can be divided into tangible and intangible effects. Tangible effects is made up of the identifiable ways in which media can perform these functions in which some sort of visible outcomes can be attributed to particular news story or a series of stories. He referred to intangible effects as the checks which are inevitably product of hard hitting independent news and can be characterised by a broadened sense of accountability amongst politicians, public bodies, and institutions. In Nigeria, the former President of the senate and the former speaker of the House of Representatives were subject to corruption charges and were forced to resign (Sowunmi, Adesola et al. 2010). This is amongst the appreciated examples of the role played by the media to enhance transparency because when politicians and other government officials are not able to maintain or lose their jobs due to the stories of the journalists and the legal proceedings, which means the media are at a good position of curbing corruption. Moreover, in Albania, the print and broadcast media are from the political and state-owned institutions. Thus, the opinions of other actors, like the NGO representatives, human rights activists and the public opinions are not respected. Also, the topics covered with the national and local media in Albania, are more politicised (Bino and Kadia 2017). In such a case, media cannot play its role of watchdog. According to (Deane 2016), media plays a major role in ensuring the effectiveness of the social accountability mechanisms, and the freedom of press is important to control the abuse of power. Also, it is possible to restrain those who are involved in corruption by strengthening the critical citizen, the civil society and the free media (Deane, 2016). In Uganda, during the beginning of the leadership of President Museveni, commitment to eradicate corruption was established and the President got the support of the media. Corruption was monitored with the media which brought changes and contributed to the implementation of reforms and democracy with a committed leadership (Nogara 2009).

3.9.4. The use of Social Medias for Advocacy in fighting corruption

The 21st century is characterised with the revolution of the Social Medias. The revolution was observed from the blog where people get to explore social media. According to Hendriks (2013) the Myspace and LinkedIn started in 2000 and Photo bucket and Flickr where used for facilitating online photo sharing. He highlighted that the site like YouTube started in 2005 and gave the way for people to interact and communicate at distance. He argued that Twitter and Facebook became in 2006 the common social networks. In addition, Hudson (2018) defined the social media as a series of websites and applications designed to allow people to share content quickly, efficiently and in real-time. He also highlighted that the social media is considered with

many people currently as apps installed in their mobile phones or tablet but certainly started with computers. Meyliana, Hidayanto et al. (2015) argued that “social media is the collective of online communications channels dedicated to community-based input, interaction, content-sharing and collaboration” and the different types of social media are the microblogging, social networking, social bookmarking, forums, wikis and social curation.

Hendriks (2013) enforced that it is easy for employees to share content using the social media advocacy with some encouragement in terms of gratification. He highlighted that the social media advocacy helps to reach many people at the same time and there is easy interaction and engagement on post shared on social media than using other Medias like radio and television. According to Hendriks (2013), social media advocacy means “talking about a particular brand or company on your personal social media channels” and Employee Advocacy means “employees of an organisation sharing official social media communication of their companies on their personal social media circles”. Today, there are many sites and applications used for social media; and all these are subject to social media advocacy. He argued that these sites and applications can allow users to reach a big number of people at the required time without person to person communication.

Accordig to Bauer (2014), social media is important in fighting corruption for two purposes: commentary, analysis, and advocacy; and investigation and crowd-sourcing.

Jha and Sarangi (2017) mentioned that social media is the external control mechanism of corruption. He highlighted that the spread of the social media creates the audience of the victims of corruption and help them to share the corruption incident. Also, social media act as a cheap mean of sharing information to reach the larger audience and organise the public protests against the corruption behaviour of the government officials. In addition, Bhatnagar (2003) and Andersen (2009) as cited in Jha and Sarangi (2017) added that the use of internet eliminates the direct interaction between the government officials and the citizens, thus, reducing the bribe demand. However, Bauer (2014) highlighted that the integration of the social media with the strategy of reporting ensure the effectiveness of the social media when dealing with corruption. Thus, the support of the government and the private sector is required to ensure the use of social media for anticorruption. Government and private sector should design the policies that impact to eliminate corruption while social media acts as a support unit to ensure the effectiveness of anticorruption mechanisms. Moreover, social media, like an anticorruption blog designed specifically to curb corruption, can have a sizable and measurable impact on transparency and accountability (Enikolopov, Petrova et al. 2018). Based on the study of Jha and Sarangi (2017), social media is effectively used to fight corruption in countries with press freedom.

3.10. Determinants and Challenges of using ICT in Public Funds Management

The application of E-Governance depends on the different layers. According to Mahmood, Tian et al. (2017), the various layers of E-Governance are divided into two categories: framework or architecture layers and layers to cover the challenges. The architecture layers include infrastructure layer which contains different infrastructures like network, storage, backup, and other IT infrastructures; E-government or Integration layer for the integration of different services or organisation data into one web portal; data layer, which integrates the database from different services of the government; and the application or information layer, which includes applications used for e-governance. The layers to cover the challenges comprise Access layer which involves end user and communication channels applied by users to access government services; E-Government layer, where web portal, service oriented architecture, and authentication portal are comprised. The organisation layer includes the application layer, business process layer, data layer, and infrastructure layer; and the National E-Governance Strategy layer (Mahmood, Tian et al. 2017). In addition, Chatfield and Alhujran (2009) highlighted that the various layers of E-Governance are namely Client layer which involves users; Presentation layer which concerns user management and personalise features; Channel delivery layer which contains the secured gateways; Security layer which involves security proxy server and the URL; Infrastructure service layer involves the cloud computing like IaaS, PaaS, and SaaS; Business layer concerns business services, user management, content management services, workflow services, search, and notification; Management and Monitoring layer contains application, network, infrastructure management, integration to various departments like data level integration, application integration, service level integration; Data layer includes data server, document repository, and directory server; and Integration layer which contains service communication infrastructure. Odooyo, Adero et al. (2014) investigated the public service cash management an Integrated Financial Management Information System (IFMIS). They discovered that users of IFMIS in the public sector are having problems with certain complicated features of the system and are also experiencing security, flexibility, and reliability issues, all of which have an impact on cash management in the public sector.

Lewis and Fall (2017) highlighted that the implementation of E-filing taxes and E-procurement enhances governments' capacity to raise and spend tax resources through lower tax compliance costs, enhanced tax collection and competitiveness of public procurement, and a reduction in corruption. The adoption of e-filing systems reduces the cost of compliance with tax as

measured when the taxation is to be prepared and paid, the likelihood and frequency of visits by a tax officer and the tax administration perception as an obstacle to business and growth.

According to Kochanova, Hasnain et al. (2017), developing economies face major tax collection and public procurement challenges due to burdensome rules and harassment by tax officials, increased tax compliance costs discourage investment, encourage tax evasion and undermine the growth of the economy. Therefore, the adoption of electronic government systems (e-government) which automate and simplify government interactions with the private sector may be a possible solution.

According to Fakeeh (2016), ICT increases quality and quantity of information and helps to store, manipulate, process, and present data, which contribute to the organisation of data. Ndou (2004) posited that the use of ICT in tax collection is most important because it allows governments officials in decision making and meet the needs of the citizens. In addition, ICT helps to save time, money and energy to complete tax assessment, make the tax payment system fast and convenient, increase transparency in terms of access of information, and increases the efficiency and effectiveness of service delivery on the side of taxpayers; whereas on the side of the Revenue Office, increases quality and quantity of tax related information, reducing tax evasion and fraud, improves tax revenue assessment and collection, and effective taxpayers data encoding. Further, LEMMA (2018) argued that the use of ICT has enhanced transparency in tax collection; taxpayers are paying online to designated banks and immediately obtaining a receipt. He mentioned that the software monitors the entire process and follows the payments to ensure accuracy. It has been found that the e-tax payment system gives you almost minutes in real time. Moreover, ICT is likely to enhance tax and taxpayer interactions, enhance transparency and accountability in the administration of corporate tax collections. Therefore, the use of ICT facilitates the recovery process and predicts the potential contribution of skills, opportunities, and resources to effectiveness and efficiency. In addition, some challenges have been identified that impede the implementation of ICT in tax collection, including inadequate ICT infrastructure, lack of leadership commitments, inefficient training facilities, poor network connectivity and a lack of awareness. However, at the National School of Finance in the DRC trainings are mostly based in financial management, budgeting, accounting, insurances, and customs (ENF 2015).

According to Chatama (2013), the ICT infrastructure is important in computerising the funds collection system and hence, enable the communication with the taxpayers, facilitate the payment of taxes and get updates from the bank. However, the effective use of ICT in tax collection and administration is needed as issues in managing taxation information are

increasing, due to paper-based information. LEMMA (2018) contented that in terms of accessibility and infrastructure the adoption of ICT in tax collection is defined by perceived utility and perceived ease of use, attitude, intention to use and accessibility.

According to Ndou (2004), there is a positive impact of using ICT in budget execution. They posited that ICT reduces the budget cost, ensure the presentation and control of the budget at the required time, and impact on profitability. LEMMA (2018) alluded that ICT improve service quality, enhance productivity and customer satisfaction, increase financial performance and customer services, and improve convenience and effectiveness; they highlighted that ICT contributes to the organisation of financial documents, it allows taxpayers to appeal and check balances, and making transfer; and help provide efficiency and effectiveness, ensure faster communication and storage and record of data which improve the availability of information and reduce risks. In addition, Haimanote (2016) stated that ICT increases quality and quantity of information and helps to store, manipulate, process, and present data, which contribute to the organisation of data. Ndou (2004) posited that the use of ICT in tax collection is most important because it allows governments officials in decision making and meet the needs of the citizens, in developing economies, therefore it is better to implement the strong or robust systems that respond to the problems of budget execution and allow tax collection. Fakeeh (2016) added that the implementation of e-budget impacted positively in the administration of the budget in Nigeria because it allows to increase awareness in the allocation of funds and resolved the problem of over-budgeting, ensure the follow-up in the preparation of the budget and reduce the processing time and the allocation is done automatically, and ensure the printing of the required documents when the processes are done, and ensure monitoring and evaluation of the state budget. Further, Haimanote (2016) indicated that ICT reduces tax evasion and fraud in revenue collection, for both taxpayers and government officials, increase the funds collected, and allow to process and present large amount of data. They added that the use of ICT helps to encode data effectively and ensure the effective use of stored data; thus, increase revenue collection. Therefore, ICT helps to save time, money and energy to complete tax assessment, make the tax payment system fast and convenient, increase transparency in terms of access of information, and increases the efficiency and effectiveness of service delivery on the side of taxpayers; whereas on the side of the Revenue Office, increases quality and quantity of tax related information, reducing tax evasion and fraud, improves tax revenue assessment and collection, and effective taxpayers data encoding.

According to EKUNDINA (2018), computer literacy and the availability of tax information are among the main factors that influence the use of ICT in revenue collection as they reflects

individuals' ability to understand financial concepts and enable taxpayers to control their personal financial resources and providing information and clarification about taxes. In addition, tax information helps in efficient time utilisation and tax payment is cost effective (EKUNDINA 2018). In addition, Cotton and Dark (2017) stated that the external factors which affect the IT implementation overall government rules and strategies, country infrastructure, community and business IT capacity. Further, the result of the study of Ngacho, Obegi et al. (2014) about the Analysis of factors influencing the implementation of computer based information systems in Public Universities in Kenya demonstrated the important components of the successful implementation of the Information System: support for top management, end-user training, understanding and approval of senior management, the availability of qualified and competent ICT workers. In addition, the minor factors influencing IS implementation were considered sufficient funding, cross-functional teams, external pressure, Information Systems implementation strategy, and adequate IS integration. The Information Systems project is a complex exercise and more research is needed to determine challenges, good practices and solutions to successful execution, as many arguments for Information Systems planning demonstrate (Cotton and Dark 2017).

According to Chatama (2013), the accessibility of ICT facilities enabled the Tanzania Revenue Authority to implement the Integrated Tax Administration System (iTAx). Githinji, Mwaniki et al. (2014) showed that tax collection authorities in Kenya had the advantage of using the mobile money services for collecting taxes, and the services are offered with all the operators in Kenya. Chatama (2013) highlighted that the consistence and compatibility of ICT infrastructure are most important in computerising the process of funds collection to facilitate the payment of the taxes, to get updates from the bank transactions and to allow communication with the taxpayers. However, Haimanote (2016) attested that the lack of awareness of the application of ICT in tax administration in many offices does not give attention to the use of ICT for funds collection and ignore the fact that ICT contributes to revenue collection. In addition, the lack of awareness in the application of ICT and the poor infrastructure, lack of education or bad learning experience, and poor training facilities affect negatively the use of ICT in public funds collection (Haimanote 2016). However, according to Abdulkareem (2015) there is a severe infrastructure deficit in rural areas compared to urban areas in Nigeria, despite the fact that over 60% of the population lives in rural areas; and a big number of citizens cannot access public portals. In addition, Electricity access is often lacking in technologies like pcs, pills or notebooks or even smart phones for accessing e-government services (Pangaribuan 2019). However, in many developing economies infrastructures are concentrated in urban areas, as in

many other developing economies. Residents have not had some of the most basic ICT infrastructure in many villages (Pangaribuan 2019). Further, electricity is not available in many areas and there is no internet. Many citizens therefore cannot access government information or digitally conduct government-related transactions (Waller and Genius 2015). Further, training in ICT is another is most important in carrying out E-government, however, many workers do not have enough skills in ICT that may help them to handle these tasks (Pangaribuan 2019). According to RFI (2019), despite an immense hydroelectric potential, the DRC has one of the lowest electricity access rates on the planet: only 8% of inhabitants have access according to the estimates provided by the presidency, including 1% in the middle rural, against 42% on average on the African continent. In addition, the incidence of poverty is averaged at 80% and the unemployment rate at 84% in 2019 (ANAPI 2020).

There are many socio-economic, political and technological challenges related to the implementation of ICT in funds collection. Mike (2017) revealed that a lack of leadership and bad governance is observed in many African countries and consequently government officials are involved in corrupt practices and not require the use of ICT. Without monitoring mechanisms there is little accountability. He highlighted that many unemployed people are involved in corrupt behaviour, to secure their jobs or to find a job, and others use any means which may help them to make money. In addition, Nduku and Tenamwenye (2014) identified that the lack of accountability and transparency, greed and selfishness, lack of leadership, weak government institutions, lack of political will, weak ethical values, lack of popularity in the government, and constant conflict and security are problems that affects the collection of funds in many African countries. Haimanote (2016) identified the challenges that hinder the application of ICT in tax administration activities. Some of the major challenges are: inadequate provision of ICT, lack of leadership commitment, insufficient ICT training facilities, weak network connection, and lack of awareness. They mentioned the factors that limit the application of ICT in tax administration which are as follows: inadequate ICT infrastructure provision, lack of leadership commitment, city administrators are not active and are reluctant to allocate adequate budget. Insufficient training facilities is another major challenge in the application of ICT for funds collection and allocation (Haimanote 2016). In addition, Kimani (2017) considered the poor integration of ICT as a challenge that affect the use of ICT in many countries, and stated that poor training of the staff and their attitude toward the adoption of ICT, lack of training facilities, lack of commitment in management, and poor training facilities as the main factors affecting the integration of ICT for service delivery. Haimanote (2016) argued that there is a problem regarding network connection which creates slow motion in systems and

affects the service delivery of tax assessment and collection, and also it delays in decisions making of taxpayers' complaints.

Wahyuningsih and Hastjarjo (2013) highlighted that the use of ICT to ensure transparency and accountability in budget execution is facing the following challenges: the poor sufficient funds to disseminate the budget information, lack of access of budget information, the process of accessing budget information is too complicated and bureaucratic, and only citizen who have access to the internet are able to access budget information which is too limited to be useful and comprehensible to the citizens, on the government websites. In addition, Alade, Abiodun et al. (2014) stated that bureaucracy is among the problems that face the availability of information when the budget is handled manually; and Haimanote (2016) insisted that some experts have not adequate awareness about the importance of ICT and do not give it full attention on the application of the technology. Hence, to ensure the successful use of ICT for public funds collection, the government should provide sufficient ICT infrastructure, improve leadership commitment, provide adequate training facilities for both government officials and citizens, improve internet connection, and increase Awareness of technologies.

3.11. Summary of Chapter 3

This chapter is concerned with literature review of the study. It reveals that the causes and effects of corruption in the DRC are immense and cannot be handled without the implication of ICT. In addition, the anticorruption mechanisms implemented in the DRC are all paper based and all the efforts are concerned with law enforcement and administrative reforms. Literature revealed some projects that are implemented successfully in some countries to enhance transparency and provided the relevant ways on how ICT can be used to fight corruption. In addition, lack of leadership and bad governance, lack of accountability and transparency, lack of political will, conflict and security, inadequate provision of ICT, insufficient ICT facilities and lack of awareness, bureaucracy and poor salary, and lack of experience were observed as the challenges and barriers related to the use of ICT in public funds collection and allocation. Further, it was revealed that ICT provides service quality, increase performance, and ensure the availability of information. It also increases quality and quantity of information, increase awareness, increase transparency and accountability, and reduce tax evasion and fraud.

CHAPTER 4: THEORETICAL FRAMEWORK

4.1. Introduction

There are many theories that are used when conducting research related to eTransparency and eGovernance. This study applied the Capabilities, Empowerment and Sustainability Model (CES). The study considered the Conceptual framework to show how ICT can be used for transparency in public funds collection and allocation in the DRC, from the national, provincial, and local levels. In this chapter, the CES Model is presented and every constructs is detailed based on the study. The conceptual framework is also presented and discussed.

4.2. Theoretical Framework

The Theoretical framework is a guide to the preparation of the research approach and the research instrument in analysing and presenting data (Green 2014). According to (Robeyns 2005) Capability Approach is, in nature, a normative theory; it gives an alternative to focus on economic growth by asking the question what are they able to do or to be? The capability approach has a significant influence on the economic development by promoting the well-being of the population (Tjelta 2005). In the 21st century, ICT is given a considerable attention due to its sufficient application in different domain of life. In India, the principal capability that is of interest and important to the population is the freedom of communication in general and the access to the web (Sen 2005) as cited in (Tjelta 2005).

According to Sen (2014) the main concept of the Capability Approach is the functioning of what the individuals or the community value to do or be. The functioning includes many activities including literacy, participating in community activities, as well as contributing to the well-being of the community. The five instrumental freedoms identified by Sen (2014) are: social opportunities, economic facilities, political freedom, protective security and transparency guarantees. The Capability Approach is used in different fields to evaluate the community well-being, especially in welfare economics, political philosophy, and development studies. Many aspects that affect the individual well-being like poverty, corruption, and inequality can also be evaluated using the Capability Approach (Sen, 2014). Policies can be designed and evaluated using the Capabilities Approach, depending on their influence on the capabilities of the individuals. Many questions can be asked when evaluating the capabilities of the individuals. Some can ask if the community have clean water, are healthy, have access to doctors, the accessibility of the important resources for the capabilities are present, adequate food, and they can ask about the educational quality of the individuals (Daojiu 2014). Thus, this approach

covers all the aspects of the well-being of the individuals or the community. That is why the capability is considered in this way as functioning and freedom (Daojiu 2014). The Capability Approach is used in many fields: in academia, this approach is used for empirical applied studies and is different to the philosophical approaches which focus on the happiness of the individual and the fulfilment of the desires (Daojiu 2014).

4.2.1. ICT and the Capability Approach

From a CA point of view, access to ICT is a commodity, not an end in itself, but a means by which somebody can achieve valuable functional qualities. In the CES model, there is a reciprocal relationship between ICT and capacities, in which people are required to benefit from the ICT, which in turn makes communication and free flow of information more easily available, which is essential to the development and sustainability of capacities (Kleine 2013). The focus on users' ability to benefit from the technology in ways that achieve the desired functions is a common thread in most literature linking CA and ICT (Alampay 2003). The CA can be useful to shape ICT initiatives as well as to assess them. Tambini (1999) analyzed media contributions for the improvement of a range of features, including opinions from the CA that the capacity of people to use various forms of infrastructure similar to the abovementioned effective use should be taken into account by those evaluating the impacts of ICT on human development. Thinking about ICTs as a function and capacity would lead to an increase in awareness of the impact of market inequalities in the formulation of policies aimed at greater equal opportunities over what it considered superficial indices, such as commonly utilized access and statistics. Building on the number of web sites, Gigler (2004) found that, even though progress in some of the most impoverished countries is being made, there is still a considerable web gap for people in the development world who can access this web site. He then asked whether the difference was associated with capacity and concluded that it appears to have increased as a result of greater access to information. But that macro-perspective does not sufficiently reflect a lack of effective use of access to information. In addition, Bertot, Jaeger et al. (2010) discussed computerised land records and e-government services under the freedoms associated with guarantees of transparency and how the ICT's had contributed to India's broader development, how they contributed to economic facilities through projects such as telecentres' mobile telephones, better agricultural supply chains, and banking services. Although ICT's contribution to protective security has not been shown for example, the ICT policy freedoms of a project in which slum residents have been strengthened more with the use of the information provided by an NGO. Therefore ICTs are not sufficient to promote

development without social and political intervention (Grunfeld 2011).

4.2.2. ICT and Empowerment

As capacity to self-reliance, one way of thinking about empowerment is that dependence on others is not only ethical, but also practical to undermine individual initiative and effort and even respect for one's self. There is a wide-ranging and complex body of authorisation literature, but the modest purpose of this section is simply to introduce this concept sufficiently carefully to communicate what this concept means when you consider its interdependence with ICT in the conceptual model and the results of the research. There are a wide variety of references to ICT empowerment, often asserting that ICT can empower people in general or has empowered a particular initiative but not properly defined the term. From the CA perspective, empowerment is a capacity that represents expanding the freedom of someone in such a way that they live a life they value and have reason to value. It can also work if someone takes the opportunity for empowerment (i.e. a capacity achievement) (Grunfeld 2011). Empowerment can provide individuals and communities with opportunities to expand their respective capacity. This, in turn, can be helpful. The reality of those without one or more basic capacity, like education, can illustrate that empowerment is their prime priority. They are often deprived, which can lead to a deterioration in their agency and function. Thus, this is a process where individuals or groups are free from domination, be it structures, or relationships (Grunfeld 2011). As mentioned above, individual empowerment is not enough, but the concept requires a wider approach that includes groups, organizations and community, which is key to the conceptualization of empowerment, especially in relation to shared facilities, in order to understand ICT's contribution. Thus, the use of ICT empowers individuals in their daily activities and ensure effectiveness and efficiency in service delivery.

4.2.3. ICT and Sustainability

The concept of sustainable development is defined as development that meets the current needs without compromising the capacity of future generations to meet their own needs (Emas 2015). Despite Sen's references to sustainability, only to a small extent has the Capability Approach Community been involved with this issue, perhaps because of Sen's belief that the literature on the subject of sustainability has paid insufficient attention to the requirement to ensure safeguards. Over and above the CA, the use of ICTs in the fields of management has been considered (Throsby 2003). Governments are then encouraged to use and to encourage ICT as a tool for management, in collaboration with other stakeholders like public policies. In addition,

the government, civil society and the private sector are encouraged to undertake actions in the implementation of projects and programs on sustainable production and consumption, and to provide for the environmentally safe disposal and recycled use of discarded hardware and components for ICTs. In addition, ICTs can help to foster e-government work by providing people with a new and powerful means of participating in government and interacting with officials and open up transparent government processes with the public. Although this can sometimes raise important civil liberties questions, so far as personal data are shared without the knowledge or consents of the individual, ICTs can also play an important monitoring role in making it easier for people to understand how taxpayers' money is used to deliver public goods and services (Ameen and Ahmad 2012). Therefore, there is need of ensuring the maintenance of ICT tools being used and to ensure its upgrading.

Further, the framework that assists to understand these procedures is made by the Capability Approach, where Capabilities is among the three concepts of the Capabilities, Empowerment and Sustainability Model (Tjelta 2005). This model reveals that government officials and citizens need a certain capability to use ICT, to access information and to make successful use of it. Otherwise, confidence can be strengthened with a fundamental level of ICT skills and awareness to enable government officials and citizens to take greater control over their lives and empower themselves. Thus, the meaning of Empowerment. Therefore, empowerment is considered as the pilot in the improvement of ICT infrastructure and its effective use. Sustainability is considered in the maintenance and upgrading of ICT infrastructures to ensure automation in service delivery. Government officials and citizens are strengthened by facilitating them in improving their level in the concerned area, like eTransparency, E-Governance and other related areas (Trond, 2005). Thus, the Capabilities, Empowerment and Sustainability Model is the result of the intersection of the Capability Approach with Empowerment and Sustainability. ICT as a mean of improving transparency in Public Funds Management can be used in many ways and some aspects have to be considered to ensure the application of the CES Model. These include the improvement of ICT in terms of Infrastructure, to learn more advanced skills as ICT is updated day by day, to increase citizens' sustainability, to empower the citizens through the use of ICT and to become familiar with ICT (Tjelta 2005). According to Sen (2001) as cited in (Tjelta 2005) the main idea in the Capability Approach is the expansion of Freedom as the principal mean of development Capabilities was then considered as the freedom of a person to promote or achieve valuable functioning and provide a set of available alternatives (Garnham 1999 and Alkire 2002) as cited in (Tjelta 2005). In this

case, functioning refers to the result of capabilities applied; in other words, real or actual achievements. The figure 7 shows the CES Model.

4.2.1. The Capabilities, Empowerment, Sustainability (CES) Model

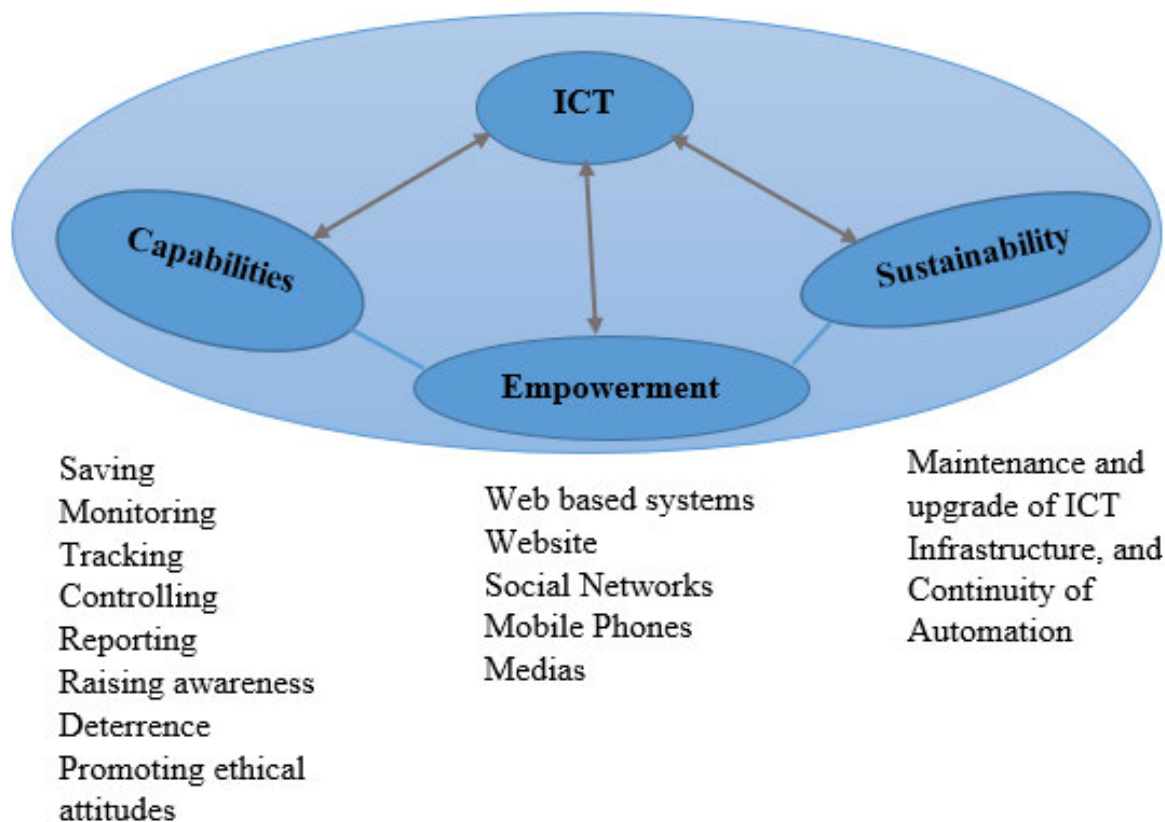


Figure 7: Capabilities, Empowerment, Sustainability (CES) Model

This research approach is used to show the role that ICT can play to ensure transparency in public funds management in the DRC. Empowerment is used to ensure that ICT in terms of Web based system, websites, social networks, Media and Mobile phones could be put in place and thereby the necessity of engaging human agents in corrupt practices. Capabilities is also assured when the opportunity of interaction is removed by displaying information concerning the different taxes on the websites, web-based systems, and social networks, by diffusing the information using media and by sharing the information using SMS or calls and ensuring the online payment using ICT means. These ICT tools can also be used to raise awareness and report cases of corruption. Web-based systems can also be used for E-procurement, E-payment, E-taxation and other means to allow the online monitoring, tracking, auditing and reporting. Online discussions concerning corruption may also be organized using ICT by means of social networks and online forums. ICT in terms of Mobile phones and SMS may also be used to engage people, report the case of corruption and discussions. If capabilities are considered using ICT, the National Minister of Finance, the National Ministry of Budget and the managers of the

services concerned with tax collection and allocation will be able to monitor, track, control, report, raise awareness and promote ethical attitude in collecting taxes and in allocating funds. Sustainability will be guaranteed by maintaining the system and by ensuring the automation of funds collection and allocation to enhance transparency and accountability in funds management. However, sustainability is considered to ensure the continuity in the automation of service delivery to make sure that the systems are maintained, audited, and upgraded when needed. In addition, the appointment of well skilled personnel in ensuring the sustainability is need as systems need to be maintained and upgraded based on the problems affecting the service delivery and actual needs. Therefore, the CES Model is appropriate for this study because it provides a clear capability of using ICT for public funds collection and allocation, ensure empowerment by using computerised systems and ICT tools, and ensure maintenance and upgrade of the implemented systems.

4.3. Conceptual Framework

Many aspects must be taken into consideration when planning to implement ICT-led measures to enhance transparency in public funds management. These aspects include the perceptions of decision makers, system users, system capability and compatibility. Three levels of analysis considered in this study are institutional level, operational level, and system level. The institutional level is made of the National Ministry of Finance and the National Ministry of Budget, at the Central government in the DRC. The operational level deals with funds collection and allocation hence encompasses funds collectors and where the funds are allocated. The National Ministry of Finance and the National Ministry of Budget have the mandate to train ICT users and enforce the use of ICT for funds collection and allocation. Figure 8 illustrates the proposed conceptual framework:

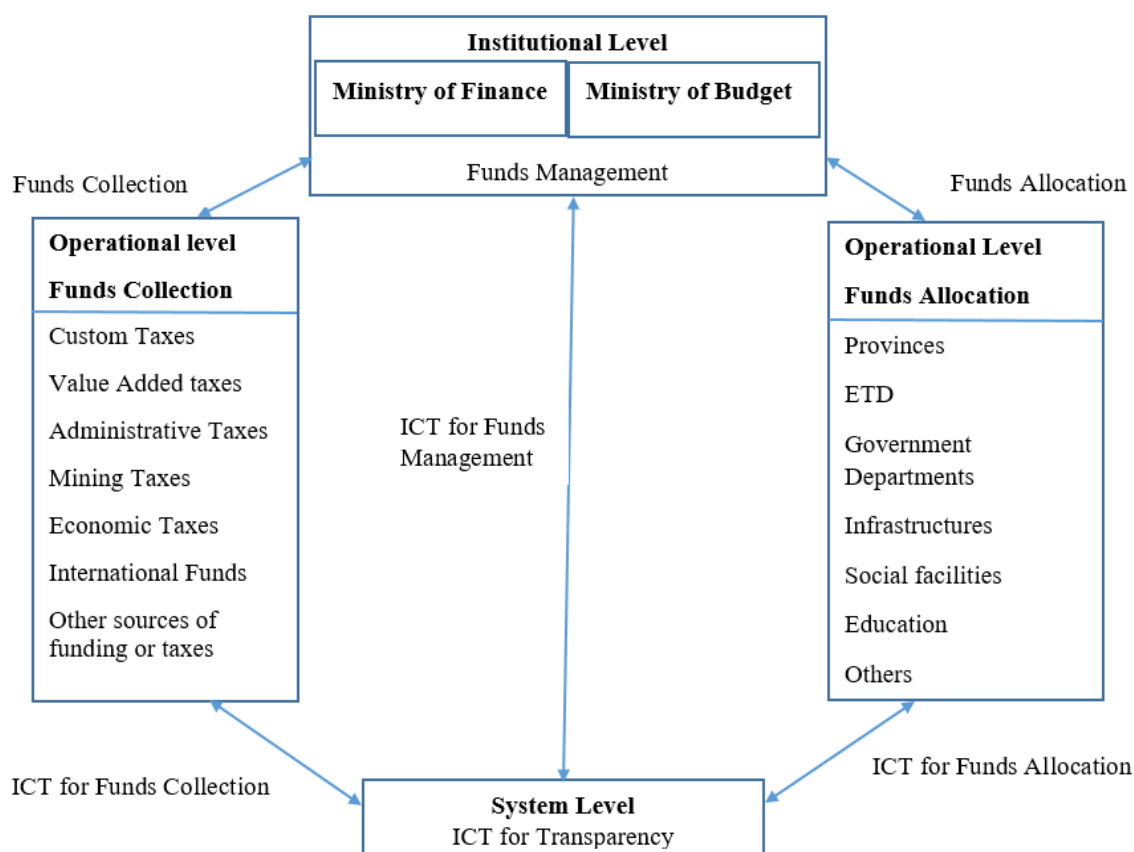


Figure 8: Conceptual framework

At the Institutional level, the National Ministry of Finance manages all the funds collected from/by different services in charge of tax collection in the DRC. The National Ministry of Budget allows the allocation of funds depending on the country budget. The National Ministry of Finance is informed about the funds collected and allocated and follows the expenditure chain using ICT means. It is updated daily regarding the tax collected with different tax collection services and funds allocation in different areas of the country. ICT plays a major role at the National Ministry of Finance and the National Ministry of Budget by monitoring the collection and allocation of funds. At the operational level, ICT is used in collecting and allocating funds. The taxes are collected by economic agents, customs and mining. Other taxes related to the administrative services are paid or collected using ICT. In case of International funds, the collection of such funds is done using ICT. The funds collected are allocated to the government department, the social facilities, different infrastructures, and other services using ICT. At the system level, there is the implication of ICT in funds collection, allocation, and funds management at the National Ministry of Finance and the National Ministry of Budget. ICT ensures the collection and allocation of funds, thus enhancing transparency in funds management.

Table 3: Correlation between the Theoretical Framework, Target Population, Data to be collected, Research Objectives, and Research Questions

Theoretical Framework	Target Population	Data to be collected	Research Objectives and questions
Capabilities, Empowerment, Sustainability (CES) Model	National Level National Ministry of Finance and National Ministry of Budget	Capabilities The current mechanism(s) in place to ensure transparency for funds collection and allocation; The challenges related to the implementation of ICT for funds collection and allocation;	Research Objectives 1 and 5 Research Question 1 Research Objectives 3 and 5 Research Question 3
	Provincial Level Ministry of Finance Ministry of Budget Tax collection institutions (DGDA, DGRAD, DGI and DPMER)	Empowerment and Sustainability The use of ICT in public funds collection and allocation; The determinants of ICT for transparency in public funds collection and allocation	Research Objectives 2 and 5 Research Question 2 Research Objectives 4 and 5 Research Question 4
	Local Level Civil Society Representatives	Capabilities The public perceptions of using ICT as a mean to address transparency and accountability issues in public funds collection in the DRC	Research Objectives 1 and 5 Research question 5

Table 3 shows the correlation between theoretical framework, target population, research objectives and research questions. The theoretical framework adopted for this study is the Capabilities, Empowerment, and Sustainability (CES) Model. The respondents of this study were considered in three levels, national, provincial and local levels. At the national level we have the National Ministries of Finance and Budget. At the provincial level there are the provincial Ministries of Finance, and Planning and Budget and the Tax collection institutions (DGDA, DGRAD, DGI and DPMER). At the national level, the Capabilities aspect of the theoretical framework was considered to determine the current mechanism(s) in place to ensure

transparency, for funds collection and allocation and the challenges related to the implementation of ICT for funds collection and allocation. At this level, research objectives 1 and 5 and research question 1 were considered. Empowerment was considered to investigate the use of ICT to collect and allocate public funds and to establish the determinants of ICT for transparency in public funds collection and allocation. Thus, the research objectives 2, 4, and 5 and research questions 2 and 4. Sustainability is considered to ensure the maintenance, upgrade and the automation of the use of ICT in public funds collection and allocation. This is basically done at the provincial level. At the local level, there are civil society representatives of the four selected territories of the South Kivu Province. The public perceptions of using ICT as a mean to address transparency and accountability issues in public funds collection in the DRC was taken into consideration to evaluate the capabilities of the use of ICT in funds collection. The research objectives 1 and 5 were also considered. Thus, research objective 5 was considered in all the constructs because it concerns the development of a suitable framework for the implementation of ICT for public funds collection and allocation.

4.4. Summary of Chapter 4

This chapter discussed the theory that was used to conduct this study. The study adopted the Capabilities, Empowerment and Sustainability Model as the theoretical framework. Considering the Capabilities, the study posits that using ICT, it is possible to monitor, control, raise awareness, track, promote ethical attitude and report the corrupt behaviour in the funds collection and allocation. By considering Empowerment, it is posited that ICT could be put in place to remove the opportunities of interaction, and the Sustainability is ensured by maintaining the system and ensuring the automation of funds collection and allocation. To ensure the use of this Theoretical framework in this study, the research objectives and research questions were all associated to the Theory, depending on the Capabilities, Empowerment and Sustainability Model.

CHAPTER 5: RESEARCH METHODOLOGY

5.1. Introduction

According to (Rajasekar 2013) Research Methodology is a systematic way to solve the problem. It is considered as a science that studies how research can be conducted or carried out. In addition, (Williams 2007). Differing from the Research methodology, Research method covers all different procedures, algorithms and schemes that help the researchers to collect data and find a solution to the problem (Glass, Vessey et al. 2002). These procedures include the experimental studies, theoretical procedures, statistical approaches and numerical schemes (Rajasekar 2013). The study approach that was used to conduct this research is presented as followed: preparation and formulation of the research objectives and research questions, the literature review on the use of ICT for anti-corruption, the review of the theoretical frameworks, evaluation of the theoretical framework, formulation of the theoretical framework and interview guide, interview for data collection in the field, Data analysis and interpretation, discussion, presentation of the suggested framework to be considered for the adoption of ICT to enhance transparency in the DRC, and conclusion and recommendation.

5.2. Research Design

A good research presents the qualities of being suitable, economical, flexible and efficient (Kumar 2002). By using good research design, reliability of the data is collected, analysed, maximised, and the bias are minimised (Brown 2016). The skills and availability of the researcher, methods of gathering the information, objectives of the problem being studied, availability of monetary support, duration of time for the research work and nature of the research problem being studied are the most important elements that are considered for a research design suitable for a specific research problem (Hakim 2000). There various types of research design are categorised depending on the nature of the study:

Exploratory Design formulates a research problem for an exhaustive investigation; the main objective is the discovery of ideas and insights (Stebbins 2001). This is why the Exploratory Research Design is flexible to give the researcher an opportunity to consider the various dimensions of the research problem. Thus, this research design is an exploratory research design (Myers, Well et al. 2010).

Hypothesis-Testing Research Design: In this research design, researchers test the relationship between variables; the hypothesis that cause the relationship between variables are tested (Wolverton 2009). The causality is considered in this research design because different

procedures are required to enhance reliability and facility deriving inferences about the causality. (Brown 2016).

Descriptive Research Design: According to Brown (2016) the descriptive research design describes the characteristics of a specific individual or group. It provides the predictions of characteristics and facts that are related to situation, group or individual (Lambert and Lambert 2012). The diagnostic research design also shares almost the same requirements as the descriptive research design in that it fixes the frequency of the relationship of one variable with another one (Myers, Well et al. 2010). Research design makes sure that one variable is associated with another. The following are considered when conducting such studies: design of data collection methods, formulation of the objectives of the study, sample selection, data collection, data analysis and interpretation, reporting and discussion of the findings.

This study was conducted through exploratory design as it seeks to formulate the problems and clarify concepts on the role that ICT can play in enhancing transparency in public funds management in the DRC. The purposive sampling was adopted for selecting the sample. This stems from the fact that the researcher has conducted interviews only with participants in selected public departments who are directly involved in public funds management, including funds collection and allocation.

5.3. Research Approaches/Paradigms

According to Schwandt (2001) as cited in (Chilisa and Kawulich 2012), a paradigm is a shared world view that represents beliefs and values in a discipline and guides how problems can be solved. The paradigm considers three aspects, the nature of social reality, known as Ontology, which is how do we know what we know; ways of knowing known as epistemology, which is how do we do what we know? And axiology, to know if what do we believe is true? Thus, the paradigm is important because it assists one to use an appropriate methodology and ask positive questions (Patton 2002) as cited in (Chilisa and Kawulich 2012).

There are many types of paradigms and every paradigm has its reason for doing research (Pratt 2015). The Positivist/Post-positivist paradigm discovers laws that are generalisable and govern the universe; the Constructivist/Interpretative Paradigm understands and describes human nature; the Transformative/Emancipatory Paradigm destroys myths and empowers people to change society radically, and Postcolonial/Indigenous Research paradigm that challenges deficit thinking and pathological descriptions of the former colonised and to reconstruct a body of knowledge that carries hope and promotes transformation and social change among the historically oppressed (Chilisa and Kawulich 2014). In the case of this study, the

Constructive/Interpretativist paradigm is considered because it is in relation to what others are experiencing in the world and the concepts that address the understanding of the world as it appears (Pratt 2015). This paradigm is examined in this study with the ontology, axiology, epistemology and methodology that are used for it (Chilisa and Kawulich 2012).

Ontology: The search for reality is at the core of any research; what is reality? This question is asked because when considering the Constructive/Interpretativist paradigm there many realities as people are constructing them and are mind dependent and social construct (Scotland 2012). Concerning this study, there are many realities on the use of ICT to enhance transparency in Public Funds collection and allocation. Also, there are assumptions that eTransparency strategies are used in different ways for improving the management in Public and Private sectors (Chilisa and Kawulich 2012). Thus, these realities about the use of ICT to enhance transparency are limited to one person or group to another and/or to context. That is why the realities on how ICT can be used to enhance transparency have to be found in this research process.

Epistemology: Knowledge is subjective as it is socially constructed and dependent on the mind. This is the belief of the constructivist/Interpretativist (Marsh and Furlong 2002). The truth about this reality is found within the experience of the human being. In this context, the experience of ICT in funds collection and allocation in the DRC should be well known after experiencing the existing ICT tools in Public Funds Management (Chilisa and Kawulich 2012).

Axiology: The constructivists affirms that reality is mind dependent and constructed; and confirms the subjectivity of the knowledge (Killam 2013). At this level, the value-laden and value-bound are considered. The values are influenced to inform the inquired paradigm, the method chosen for data collection and analysis, the choice of the topic of the study, and how the findings were interpreted and reported (Chilisa and Kawulich 2012).

The research approach used for this study is the qualitative approach as it seeks to know how ICT can be used to enhance transparency in public funds management, from the collection to the allocation of funds, in the DRC.

5.4. Research Instruments design

This study was conducted at three levels: national, provincial and local levels. At the national level, interview was conducted at the National Ministries of Finance and Budget at Kinshasa. At the Provincial level, interview was conducted at the Provincial Ministry of Finance and the Provincial Ministry of Budget, the Provincial offices of DGDA, DGI, DGRAD and DPMER in the South Kivu Province. At the local level, interview was conducted with the Civil Society representatives at the four selected territories of the South Kivu province including the

territories of Fizi, Uvira, Walungu and Kabare. The interview guide was designed depending on these levels. At the national level, interview was designed into two sections, including the section that considers the Current Mechanisms for Funds Collection and Allocation with the aim of identifying the current mechanisms used to collect and allocate public funds in the DRC and discover if there are policies in place to address issues of transparency in Public Funds collection and allocation in the DRC and how these policies are applied. The second section concerned the Challenge in ICT Implementation with the aim of identifying the problem related to the implementation of ICT in Public Funds collection and allocation and assess the opinions of the public personnel to the implementation of ICT in public funds collection and allocation. At the provincial level, an interview guide was also designed into two sections including the section that concerns with the use of ICT for Funds Collection and Allocation, with the aim of identifying the tools that are used for public funds collection and allocation and discover the current plans for using ICT in public funds collection and allocation. The second section, at this level, was the use of ICT to address issues related to transparency and accountability in Public funds collection and allocation. The aim of this section is to identify the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation; to highlight some of the activities undertaken as part of the mechanisms, to discover the barriers that hinder the use of ICT in public funds collection and allocation and to assess the effectiveness of ICT for ensuring transparency in public funds collection and allocation by comparing ICT with the manual mechanisms. At local level, the focus is on the funds collection because the citizens are not involved in funds allocation. At this level, there is only one section which concerns the Public perceptions of using ICT as means to address transparency and accountability issues. The aim of this section is to investigate the formal processes for paying taxes within the community; to investigate the mechanisms in place to inform the community about the taxes and to assess the barriers of using ICT for public funds collection in the community. The theoretical framework that was used for this study is the Capabilities, Empowerment and Sustainability model as stated in the chapter above. All interview questions, in this study, were aligned with this model; this has proved how the objectives and questions of the research were answered using this model.

Table 4: Correlation between the Capabilities, Empowerment and Sustainability Model, Research Objectives, Research Questions, and the Interview Guide

Research Objectives	Research Questions	Interview Guide	Research Model CES
Research Objective 1 To investigate processes in place for public funds collection and allocation	RQ1: What are the current mechanisms in place to ensure transparency for funds collection and allocation in the DRC?	Q1, Q2	Capabilities
Research Objective 2 To investigate the use of ICT for public funds collection and allocation	RQ2: How is ICT used currently to collect and allocate public funds?	Q5, Q6, Q7, Q8, Q9, Q10	Capabilities
Research Objective 3 To identify the challenges related to the implementation of ICT for improving transparency in public funds collection and allocation	RQ3: What are the challenges related to the implementation of ICT for public funds collection and allocation?	Q3, Q4	Empowerment

Budget were contacted. At the provincial level, an interview was conducted to investigate the use of ICT for Funds Collection and Allocation in the DRC; interview questions 5 (what are the ICT tools being used for Public Funds Collection and Allocation?) and 6 (What is the current plan for ensuring the use of ICT in Public Funds Collection and Allocation?) were considered. Also, at this level, interview was conducted to investigate the use of ICT to address issues related to transparency and accountability in Public Funds collection and allocation; interview questions 7 (What are the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation?), 8 (what are some of the activities undertaken as part of the mechanism (s) highlighted above?), 9 (Can ICT-led tools be better for ensuring transparency in public funds collection and allocation than the actual mechanism (s)? and 10 (What can be the barriers of using ICT for public funds collection and allocation?). The Provincial Ministry of Finance, the Provincial Ministry of Budget, the different services concerned with funds collection, including DGDA, DGI, DGRAD and DPMER, in the South Kivu Province were considered. At the local level, interview was conducted to find out the Public perceptions of using ICT as a mean to address transparency and accountability issues; interview question 11 (What are the formal processes for paying taxes within the community?), 12 (What are the mechanisms in place to inform the community about the taxes?) and 13 (What can be the barriers of using ICT for public funds collection in your community?) were considered. The Civil Society representatives from the four selected territories (Fizi, Uvira, Walungu and Kabare) of the South Kivu Province were interviewed.

1.1. Study Site

The DRC has 26 provinces with a surface area of 2345000 square kilometers (Bruneau 2009). The funds are collected and allocated from the national, provincial and local levels. From the national level, the Ministry of finance through its services or institutions, collects funds and allocates them in collaboration with the Ministry of budget. The allocation, at the national level, is made depending on the national budget. At the provincial level, there are services for collecting funds but controlled by the central government, these services provide 40% of the funds collected to the province and 60% is sent to the central government. There are also services controlled fully at the provincial level, these services provide 100% of the funds collected to the provincial government through the Provincial Ministry of finance. The allocation of funds is made by the Ministry of planning and Budget. At the local level, funds are collected and sent to the appropriate service at the provincial level. Funds from international donors are collected and allocated from the National level on project by project basis. At the provincial and local levels, the researcher focused in the South Kivu province as it is difficult

to cover all the provinces of the DRC in a period of the study. The province of South Kivu has a surface area of 64851 square kilometers with 8 territories and located at the eastern part of the DRC, at the border with the Republic of Tanzania, the Republic of Burundi and the Republic of Rwanda. It is bounded to the north by the North Kivu Province and the Province of ITURI, the South by the Province of Tanganyika, to the West by the province of Maniema. At the local level, the research focused in four selected territories of the South Kivu Province, including the territories of Fizi, Uvira, Walungu and Kabare as these are territories with higher contribution in the treasury of the South Kivu province. Also, depending on the conditions of the security and roads, it is difficult for the researcher to reach all the territories. At the national level, the National ministry of Finance and the National Ministry of Budget were concerned. At the Province level, the Provincial ministry of Finance, the Provincial ministry of Budget, in the South Kivu Province were concerned. The services in charge of funds collection at the provincial level, in the South Kivu province, were considered. These services includes DGDA, DGI, DGRAD and DPMER. As stated above, DGDA, DGI and DGRAD are managed at the national level, with the National Ministry of Finance; the province receives 40% of the funds collected with each service. DPMER is managed fully with the Provincial Ministry of Finance because it is a service concerned with funds collection in the province of South Kivu, specifically for collecting the funds related to the provincial taxes.

1.2. Data collection methods

As an exploratory research, interviews were used for data collection while the main theme of this instrument was centered on the Role of ICT to enhance transparency in public funds management. Interviews were conducted in a systematic manner. The process followed a number of interrelated steps. These steps include preparation: thought of various items to be covered in the interview revisions: after receiving suggestions, some items were eliminated, some changed and some new added, a second revision: changes were made on the basis of the results of pre-testing, preparing final draft: after editing, checking spelling, space for response, pre-coding, the final draft was prepared.

At the national level, interviews were conducted to the key personnel of the National Ministry of Finance and the National Ministry of Budget in order to know the current mechanisms in place for public funds collection; to identify the challenges related to the implementation of ICT for improving transparency in public funds collection and allocation and to develop a suitable framework for the implementation of ICT for public funds collection and allocation.

At the provincial level, data was collected from key personnel in the Provincial Ministry of Finance, the Provincial Ministry of Planning and Budget and key personnel of the services

concerned with public funds collection and allocation. Interviews were conducted to; know the use of ICT for funds collection and allocation, establish the determinants of ICT for transparency in public funds collection and allocation, and develop a suitable framework for the implementation of ICT for public funds collection and allocation.

At the local level, interviews were used as the instrument to collect data from the civil society representatives, in order to determine the attitudes of citizens to the introduction of ICT to enhance transparency in public funds collection and to develop a suitable framework for public funds collection. Interviews were coded using Nvivo.

Various steps were considered before starting data collection: the letters containing the aim of the research, from the supervisor, were sent to targeted Ministries and institutions. The concerned Ministries and institutions provided their permissions by signing the gatekeepers consent forms. These forms were then sent to the University to request Ethical Clearance, as an approval for data collection from the University. Ethical Clearance was then granted and the research proceeded for data collection.

At the national level, data were collected in the Ministry of Finance and the Ministry of Budget. In the Ministries of Finance, the researcher was guided to the ICT Division, where the interview was conducted with the Manager of the office. At the Ministry of Budget, the Division where the researcher was led to the Expenditure Chain Management office. At the Provincial level, the research was conducted in the Ministry of Finance and the Ministry of Budget in the South Kivu. Concerning the different institutions, in DGI, the Researcher was oriented in the Offices of Computer Division and the Office of Funds mobilisation. In the DGRAD, the researcher was guided to the Division of Funds Mobilisation and the Division of Scheduling. At the local level, interviews were conducted with the civil society of the territories of Fizi, Uvira and Kabare. Some limitations were observed during the data collection because some respondents were not interviewed due to various reasons. At DGDA, respondents refused to be interviewed due to the sensitivity of the topic of the study as it is related to anticorruption. In addition, at DGI, the researcher was requested to do the interview with one respondent only as the questions were related and the responses should be the same. Further, the researcher was not able to reach the civil society representative of the territory of Walungu due to security issues. The interview questions were translated into French as the official language of the DRC but Interview was held in the two language, French and Swahili because some respondents were combining both languages. During the interview, some respondents agreed to have their voices recorded and others refused.

1.3. Target Population

At the national level, the National Ministry of Finance and the National Ministry of Budget were considered the target group to determine the current mechanisms in place for public funds collection and allocation, to identify the challenges related to the implementation of ICT for improving transparency in public funds collection and to develop a suitable framework for the implementation of ICT for public funds collection and allocation.

At the provincial level, the Provincial Ministry of Finance, the Provincial Ministry of Planning and Budget and the services in charge of funds collection and allocation in the South Kivu Province were targeted. At this level, data was collected in order to understand the use of ICT for funds collection and allocation, to establish the determinants of ICT for transparency in public funds collection and allocation; and to develop a suitable framework for the implementation of ICT for public funds collection and allocation. Civil servants from the ministry of Ministry of Finance, the Ministry of Planning and Budget and the concerned services were the main targets.

At the local level, there is collection of funds only. At this level, the services are not concerned with the allocation as they receive funds allocated at the provincial level; this means that data was collected based on funds collection only. At this level, data was collected from citizens in order to know their attitudes to the introduction of ICT in enhancing transparency and accountability. In every territory of the DRC, there are representatives of Civil Society with the mission to preserve, promote, and diffuse the traditions of democracy and are considered as speakers of the population. This is the reason that at the local level, the civil society representatives in selected territories are with high levels of income or revenue. These include, the territories of Fizi, Uvira, Walungu and Kabare which were targeted.

1.4. Sampling strategies and Sample size

In order to determine the sample, a purposive sampling technique was employed to select respondents from different categories of the population. The advantage of this sampling technique is that the researcher could select the respondents according to their characteristics of interest and use his research skills and prior knowledge to choose respondents and analyze their responses (Conrad 2013).

Based on the exploratory nature of this study and the selected sampling technique, only key personnel were selected for interviews. At the national level, there are 2 respondents: one (1) respondent in the National Ministry of Finance and one (1) respondent in the National Ministry of Budget. At the provincial level, there are ten (10) respondents: one (1) respondent in the Ministry of Finance, one (1) respondent in the Ministry of Planning and Budget and two (2)

respondents in each service (DGDA, DGRAD, DGI and DPMER). At the local level, there are four (4) respondents (civil society representatives) in the four (4) selected territories of the South Kivu Province: one (1) respondent in each territory. The process of Data collection took at least two months because the researcher travelled to different areas, from Bukavu to Kinshasa, from Bukavu to different territories, and around Bukavu city. The qualitative data was analysed using Nvivo software.

1.5. Data Quality Control

For measuring the validity, expert judgment was used as a primary method to measure the content validity of the instruments.

According to Simon (2011) validity and reliability have to be addressed in every research to ensure the credibility, dependability and the accuracy of the information. In qualitative research, validity refers to the quality, trustworthiness and rigour while the reliability refers to the dependability (Simon 2011). Many approaches are used to address the validity and reliability when conducting a qualitative study. Brink (1993), described the most popular approaches as follows:

Triangulation: The aim of this approach was to avoid the individual biases of the researchers to overcome the faults due to the use of single theory, investigator and method in order to increase the validity. The researcher considered the use, in a phenomenon, of more methods, investigators, approaches, theoretical perspectives and data sources to analyse in the study and then validated the similarity among them.

Member Checks: this approach involved the researcher and the informant to ensure that they were consistently viewing data. The informant received the content and the researcher received the feedback about the accuracy of the content. This was the recycling of the analysis back to the informants.

Expert Consensual Validation from others: this approach included the analysis of data with researchers, which may include the colleagues, participant informants and the Judge panel.

Multiple: included the measurement of the instrument at different points of time, by different persons, over a long period of time and in different situations.

Checking for representativeness: included the examination of the examples used to analyse and present data, coding categories and representative of the data.

1.5.1. Different types of Validity

William and Donnelly (2006) considers the Construct Validity as an approximate truth of the conclusion that an operationalisation accurately reflects its construct. It is composed of two major types of validity which are the Criterion-related validity and the translation validity. Translation validity focuses on the reflection of the construct. It evaluates whether the operational is a good reflection of the construct. Criterion-related validity focuses on how the operationalisation behaves. It examines whether the operationalisation behaves the way it should be given the theory of construct. Two categories are included in Translation Validity: Face Validity and Content Validity. Criterion-related validity is also composed of Predictive Validity, Concurrent Validity, Convergent Validity and Discriminant Validity, which are explained below:

Face Validity: examines the operationalisation of an instrument by seeing on its face if it looks a good translation. You look at an instrument and read the questions. Then you decide if it is a good measure of the construct. This is observed as the poorest way of demonstrating the Construct Validity.

Content Validity: is a comparison between operationalisation and the content domain of the construct. It examines whether the content of the research instrument is appropriate to the content of the domain of construct.

Predictive Validity: is the examination of the operationalisation ability to predict approximately what it should be able to predict. The measure predicts properly something that the theory should be able to predict.

Convergent Validity: it assesses the extent of the similarity of the operationalisation that should be theoretically similar to with other operationalisations.

Discriminant Validity: it assesses the extent of divergence of the operationalisation with other operationalisations that should be different to.

In this study, the Translation Validity, which includes the Face Validity and the Content Validity was considered. The researcher considered the translation of the research instrument in French as the respondents were not able to communicate in English.

Tsang, Royse et al. (2017) provided four steps of translating a research instrument:

Forward Translation: This step involved the translation by someone who is part of the target population to translate the research instrument from the original language to the target language. It is recommended to include at least two independent translators to better reflect the target language. With regards to this study, the interview guide was translated to French by a translator from the DRC, with the guidance of the Researcher who is also proficient in French. The researcher refined the concepts that the translator was not able to understand. Some discussions were made between the researcher and the translator for some words that were not clear to understand.

Backward Translation: The mistakes from the initial translation were discovered and corrected in the backward translation. The backward translation should also be achieved with two independent translators. In this study, the interview was translated back to English by the researcher, to make sure that the interview guide was applied to the English concepts. The reviewed English version of the interview guide was produced.

Expert Committee: generates the semifinal version of the translated questions. All versions of the questionnaires were subjected to review with the committee, to investigate if the original version and the translated version realized the experiential, conceptual equivalence, both idiomatic and semantic. Members of the committee had to produce the semifinal version of the translated instrument and committee members had an agreement before producing the translated version. At this stage, the committee members decided whether it was necessary to restart the forward and backward translations. In order to achieve this, the interview guide was submitted to the Directors of Cabinet of the Ministry of Budget and the Ministry of Finance at the provincial level to correct the instrument, and then it was submitted to the supervisor who decided on its approval.

Preliminary Pilot Testing: This step involved that the semifinal version of the question should be tested by using a small sample of the expected respondents to make sure that the meaning of the translated version is the same as the meaning of the original item. The interview guide at the national level was tested with one respondent in the National Ministry of Budget. At the provincial level, it was tested in the provincial Ministry of Finance and at the local level; the interview guide was tested with the Civil Society representative in Uvira territory. All the respondents who were tested suggested clarifying questions that were not clear and simplifying them for better understanding. During the interview, some discussions were made to clarify and explain the questions. Concerning the Content Validity, the literature review was used to

classify and recognise how the concepts relating to the theoretical frameworks were used in order to identify the variables and to decide whether they fit or not in the constructs.

5.9.2. Different types of Reliability

The following types of reliability test were identified by William and Donnelly (2006):

Test-Retest Reliability: This type of reliability is used to measure the consistency of a research instrument from two different times. It assesses the extent to which the responses of the respondents remain identical from one time to another.

Internal Consistency Reliability: is concerned with the consistency of the results. This type of reliability measures the extent to which the result of the research instrument is consistent and inter-correlated within a test.

Inter-Rater or Inter-Observer Reliability: is used to measure the extent to which various observers provide estimates of the same phenomenon consistently.

Parallel-Forms Reliability: measures the consistency of the two tests made in a similar way from a similar content domain. This assesses the research instrument by comparing the similarity of the results from different versions of the research instrument.

1.6. Data Analysis

Data analysis is the process of looking at and summarizing data with the intent of extracting useful information and developing conclusions. This was done soon after data gathering. According to Braun (2006), thematic analysis is a qualitative data analysis method used to identify, analyse and report patterns (themes) within the data. It describes and organises data in details. In this study, in order to undertake the thematic analysis, interviews were transcribed and loaded into Nvivo. Nodes were created in Nvivo. The nodes essentially denote the themes captured through the interview guide questions. Data was coded into the themes (represented by Nvivo nodes). Thematic analysis was based on the themes captured through the interview responses. Nvivo assisted in conceptualising and analysing the patterns within the interviewees' responses, which were analysed and compared in order to find similarities and differences across various viewpoints from the interviewees.

Regarding Thematic analysis, a framework composed of six-phases is considered as a useful tool to conduct such analysis (Maguire and Delahunt 2017), the six phases are:

To become familiar with the data: Reading and re-reading the transcripts are considered as the first step in any qualitative data analysis. The researcher should be familiar with the data collected.

To generate initial codes: Data should be organised in a systematic and meaningful manner. Due to the different ways to code the data, the researcher has the option to choose the method that matter, which was determined by the research questions. The researcher coded every segment of significant data and detained what was relevant to the research question; not every piece of data or text was considered. Open coding was used because there were no pre-codes except those developed and edited, while working throughout the process of coding. The ideas were initiated at the end of the first step. After the end of this step, the researcher compared the codes and made discussions about them and then modified them. This was done by writing on paper based copies.

To search for themes: There are no hard and fast rules for making a theme, which is characterised mainly by its significance; this means that, the smaller the data set, the higher the overlap between the coding stage and the stage of preliminary identification. The codes were examined and some codes really fit together into themes. The end of this step was characterised by the organisation of codes into themes that appeared to say something about the research question.

To review Themes: the preliminary themes identified in step 3 were reviewed, modified and developed, then checked to see really if they made sense. Data relevant to each theme was gathered together.

To define Themes: this step considered the final refinement of themes to identify what is the essence of theme. Many questions were asked at this step, to identify what the themes are saying and to know if there are subthemes and know how the subthemes are related and how they interact with the main theme.

Writing-up: At this step, the researcher continues with writing the reporting of the study. The Data analysis is discussed in Chapter 6.

1.7. Ethical Considerations

Willetts (2016) provided some ethical considerations to be used when conducting a research:

Informed Consent: Participants had to be informed about the research being conducted. They must be informed about the aim of the study.

Confidentiality: Participants are not supposed to be identified or the information is not supposed to be accessed or available to anybody.

Voluntary participation: Participants were free to participate or withdraw their participation any time they want.

Anonymity: The identity of the respondent is not known by the researcher.

Do no harm: The research process is not supposed to harm the respondents. The harm can be in terms of pain, stress, anxiety, invasion of privacy or affecting their self-esteem.

Only assess relevant components: The researcher must be concerned with the relevant components of the study only.

To this end, the respondents were asked to give their answers freely and avoid question that violated their privacy and confidentiality. Therefore, respondents had the freedom to ignore items. In addition, they were not asked to identify themselves by names. Any rule concerning the ethical clearance from the University of KwaZulu-Natal was also applied. In addition, permission was sought from the concerned Ministries and Institutions prior to data collection.

1.8. Summary of Chapter 5

This chapter described the methodologies used in this study. The qualitative approach was employed by the researcher and the exploratory design was used to investigate how ICT can be used to enhance transparency in public funds management in the DRC. The purposive sampling was employed to select the respondent in the concerned Ministries and institutions. The ontology, epistemology and axiology were also highlighted and adopted in this study. The research instrument was subjected to test-retest reliability, Face Validity and the content validity were also applied in this study. This chapter also highlighted the Ethical clearance that were obtained for this study. Interviews were conducted at three levels of our study. At the national level, Interviews were conducted in the National Ministry of Finance and the National Ministry of Budget; at the provincial level, Interviews were conducted at the Provincial Ministry of Budget, Provincial Ministry of Finance, DGI, DRAD and DPMER; at the local level, interviews were conducted with the Civil Society Representatives in the territories of FIZI, KABARE and Uvira. Thematic Analysis was considered to analyse the responses from the interviews.

CHAPTER 6: RESEARCH FINDINGS

6.1. Introduction

This chapter provides the thematic analysis of data that was collected in different ministries and institutions in the DRC. Data was collected through interviews from the national, provincial and local levels. The Demographic of the respondents was described and data concerning the use of ICT to enhance transparency in Public Funds management in the DRC was presented. Themes from the responses were coded into Nvivo nodes.

6.2. Demographic of the Respondents

Table 5: Demographic of the Respondents

Level	Ministry/Service	Respondent Code	Gender	Year of Experience
National Level	Ministry of Budget	Respondent 1	Male	10 years
	Ministry of Finance	Respondent 2	Male	5 years
Provincial Level	Ministry of Budget	Respondent 3	Male	3 years
	Ministry of Finance	Respondent 4	Male	8 years
	DGRAD	Respondent 5	Male	6 years
		Respondent 6	Male	10 years
	DGI	Respondent 7	Female	8 years
	DPMER	Respondent 8	Male	5 years
		Respondent 9	Female	4 years
Local Level	Territory of Fizi	Respondent 10	Male	4 years
	Territory of Uvira	Respondent 11	Male	4 years
	Territory of Kabare	Respondent 12	Male	3 years

Data was collected at three levels, national, provincial and local. Due to the nature of this study, the purposive sampling was applied to select the respondents depending on their positions in the targeted Ministries and services.

In the Ministry of Budget at the national level, an interview was conducted in the CII, a service specialised in managing the expenditure chain management. CII is an interministerial service, under the ministry of Budget and the Ministry of Finance but fully managed with the Ministry of Budget to ensure the expenditure chain management. In the Ministry of Finances, at the National level, interview was conducted to an advisor of the Ministry. At the Ministry of Finance and the Ministry of Budget at the provincial level, the researcher was appointed directly to the Cabinet of the Ministry. They are well informed about all the services under their management. In DGRAD, the interview was conducted in the authorisation and control division and payment services. At DGI, Interview was conducted in the Computer Division only. In DPMER, revenue collection unit of the South Kivu province, interview was conducted in the Division of authorisation and control and the Division of Payment or Funds collection. At the local level, the Civil Society Representatives of the Fizi, Uvira and Kabare territories were interviewed separately in their territories.

6.3. Findings based on Research Questions

6.3.1. Research Question 1: What are the current mechanisms in place to ensure transparency for funds collection and allocation in the DRC?

Table 6: Alignment between the Themes and Research Question One

Interviewee	Theme	Emergед Subthemes from the Respondents	Interview Question
National Ministry of budget	Current Mechanisms for funds collection and allocation	Use of GES-Depense application	What are the strategies currently used to collect and allocate public funds in the DRC?
		Use of Manual of procedures and circuit of the public expenditure	Is there any policy used to address the issue of transparency in public funds collection and allocation in the DRC? How do you ensure its application?

National Ministry of Finances		Maintaining the legal and Regulatory texts	What are the strategies currently used to collect and allocate public funds in the DRC?
		Sensitisation of Economic Operators and Revenue Generating Services	
		Good collaboration with the Economic Operators	
		Collaboration with various services of Generating Revenue	
		Training of the Managers and Agents	
		Policies in place: Ordinance Law No 18/003 of March 2018; Decree No 007/ of 02 February 2002; Various Interministerial Decrees between the Ministry of Finances and other Ministries	Is there any policy used to address the issue of transparency in public funds collection and allocation in the DRC? How do you ensure its application?

Strategies for funds allocation in the DRC

This section discussed the strategies applied in the National Ministry of Budget to ensure public funds allocation in the DRC.

Use of GES-Depense

From the Ministry of Budget, at the National level, the respondent 1 mentioned that the only strategy currently used to allocate public funds in the DRC is the use of the specific software GES-Depense. However, respondent 1 highlighted that the application of GES-Depense is

limited because the different provincial offices are not using it. In addition, this application is also limited to the collection of information and report to the decision-makers without considering how the allocation is run; as stated with the interviewee “*We use the GES-Depense application system that allows us to collect information about expenses and also pass the reports to the decision-makers at the appropriate time*” (National Ministry of Budget, Interview, 2018). Additionally, despite the cost of the design, as it involved the international consultant and national workers, its application is very poor and the government is still using much money for its maintenance without any positive impact, as stated by the respondent 1 “*This app was designed locally with the Ministry staff supported by the Consultants from France. We monitor and maintain this system to ensure efficiency*” (National Ministry of Budget, Interview, 2018). Furthermore, the government of the DRC does not use any system to ensure the allocation of public funds like E-Budget, ensure online payment using E-payment or E-procurement for purchasing online and ensure that citizens are well informed about the budget using the Open government data portal, mobile phones, social media, radio and televisions. Hence, the allocation of funds in the DRC is still paper-based, despite the use of this software as it does not respond to the needs of the Ministry and the citizen. Therefore, there is of integrating ICT for the allocation of public funds in the DRC as indicated by Kumar, Shukla et al. (2013) that E-Governance provides and enhances organizational efficiency, government functionalities and the participation of the citizens in the execution of the programs of the government. In addition, Alade, Abiodun et al. (2014) posited that the computerization of the budget execution increase awareness in the funds allocation.

Strategies for funds collection in the DRC

In the DRC, all the public funds collection strategies are defined by the National Ministry of Finance and all the funds collection institutions are fully managed by this ministry. At the provincial level, every province manages its own funds collection unit and report to the Provincial Ministry of Finance. This section aims to identify if ICT is used as a strategy for funds collection in the DRC as other countries have adopted already the use of Tax Administration System, Integrated Financial Management System, Taxpayer identification system to fully managing the funds collection (Chatama 2013).

From the National Ministry of Finances, the respondent 2 mentioned that the strategies used to collect public funds in the DRC are as follows: to maintain the legal and regulatory Acts, the good collaboration with the economic operators and the various revenue generating services, the training of the managers and agents; and the sensitisation of economic operators and

Revenue Generating Services (National Ministry of Finance, Interview, 2018).

The respondent 2 stated that:

“The strategies are summarized in the following points:

We keep a very good collaboration with the various revenue generating services (basic services); Maintaining the legal and regulatory acts governing the methods of payment of debts to the State and a good collaboration with the economic operators; awareness of the economic operators with the revenue generating services to the social citizenship and the training of the managers and agents for their levelling.”

Legal and regulatory Acts

Every year, the government defines the finance law, also called the government budget to ensure the execution of the government projects and respond to the citizen needs. It contains revenue information of the taxes that are supposed to be collected from different sources, and expenditure information for the government finance year. However, the National Ministry of Finance ensures the application of the finance law by managing the budget. In addition, there are many sources of finance in the DRC, including the taxes. Still, the government of the DRC implemented the General Tax Code, which is a collection of legal and regulatory acts for managing the taxes in the DRC. All these strategies are not accessed easily with the citizens and the government does not ensure its vulgarisation.

Collaboration between the economic operators and the various Revenue Generating Services

To ensure the collection of funds in the DRC, the National Ministry of Finance ensures the collaboration between the economic operators and revenue generating services. Such collaboration is established to create interaction between the taxpayers and the government officials for funds collection. In addition, there is direct communication between economic operators and revenue generating services; the request of information from both parties is done mostly by phone or visits in their respective offices. However, this interaction opens the gates to corruption because the government officials have influence over the economic operators.

Training of workers

The respondent 2 mentioned that the government of the DRC owns a National School of Finances to train the workers of the National Ministry of Finance. Trainings are based mostly on inspection of financial services with the focus on public budget, accounting, insurance, customs and excises, and public finance. At the institutional level, workers are also trained in other fields but, concerning ICT, they are trained usually in Microsoft Office Words and Excel.

Awareness of economic operators and Revenue generating services

The National Ministry of Finance ensures the collection of resources in the DRC. To achieve

this duty, the government has to raise awareness to the economic operators of public and private sectors to inform them about the benefits of their taxes, the operations of paying taxes, and make sure that they are informed about the policies related to funds collection in the DRC. The aim of the National Ministry of Finance is to maximise revenue to carry out the development of the country. However, the government of the DRC does not have any Open Data Portal which may be applied as a transparency mechanisms to ensure access of information to the community. The awareness is raised by radio and television, to inform the economic operators about the payment of taxes, after releasing the acts related to funds collection. Radio and television are mostly based in town, without access in the rural areas. Thus, there is still a need of implementing awareness mechanisms to inform the economic operators and the community about funds collection in the DRC. In addition, the Revenue generating services are also informed about the mechanisms that may be applied for funds collection and the different acts in place.

Therefore, ICT is not used as strategy for public funds collection in the DRC while other countries have already adopted its use and found the importance of using ICT for public funds collection, as mentioned by Haimanote (2016) ICT helps to process and store data, which have positive on decision making and respond to citizens need (McCluskey and Huang 2019); and reduce tax evasion and fraud (Haimanote 2016). In addition, Buydens et al. (2018) highlighted that ICT delivery improves financial revenue by providing quality service to taxpayers and government authorities.

Policy applied to ensure transparency in public funds allocation in the DRC

This section discusses the policies in place to ensure transparency in public funds allocation in the DRC. It aims to find out if there are some policies, from the National Ministry of Budget, that are used or applied to ensure transparency in public funds allocation, as stated with the respondent 1 *“We have a manual of procedures and circuit of the public expenditure which includes all the policies of management of the public expenditure”* (National Ministry of Budget, Interview, 2018). However, the government of the DRC is using the manual of procedure and Public Expenditure Circuit as the only policy to ensure transparency in public funds allocation while this manual does not have sufficient information as it was designed for the purpose of the GES-Depense application. In addition, the respondent 1 mentioned that the application of this policy pose problems due to poor trainings of new workers. The respondent 1 stated that *“this manual works well because it is adapted to our staff but only what complicates us often is the materialisation and the trainings of the new workers which were not trained at the beginning* (National Ministry of Budget, Interview, 2018).” Therefore, this policy does not

ensure transparency in public funds allocation as it is based only on the management of the GES-Depense, without any impact on the funds allocated.

Policy applied to ensure transparency in public funds collection in the DRC

The respondent 2 mentioned that the policies in place to address the issue of transparency in public funds collection are materialised by the following texts: Decree No 007/ of 02 February 2002, Ordonnance Law No 18/003 of March 2018, and the various decrees between the Ministry of Finance and other Ministries. In addition, the respondent 2 ensured that these policies are adapted and followed with the economic operators, revenue generating services and the ministry workers.

Decree No 007/ of 02 February 2002

According to the respondent 2, this decree ensures that all taxes, penalties and fines must be paid directly to the account of the receiver of the financial control or the concerned Administrative Entity. The payment must be made in cash or in scriptural form to the authorised agents, pursuant to this Decree, to receive payment and to deliver the proof thereof.

Ordonnance-law No 18/003 of March 2018

This ordonnance-law aims to fix the nomenclature of duties, taxes and fees to be levied at the initiative of the administrations and funds collection services, in favor of the central government, in accordance with the constitution and the law no 11/011 of 13 July 2011 on public finances.

Decrees between the Ministry of Finance and other Ministries

In DRC, the National Ministry of Finance signs the decrees related to tax from the initiative of other National Ministries to ensure the collection of funds in the concerned National Ministry. Such decrees are signed with the National Ministry of Finance and the concerned National Ministry.

About the policy used to address the issue of transparency in public funds collection in the DRC, the respondent 2 stated that:

“The policy is materialised by the following texts: Decree No 007 / of February 02, 2002, relating to the mode of payment of debts towards the State; Ordinance-Law No. 18/003 of 13 March 2018, fixing the nomenclature of the rights, taxes and royalties of the Central Government; the various decrees signed between the Minister of Finance and the various Ministers of the other Ministries, setting the rates of collection of taxes and fees generated by the revenue generating services”

The themes generated from the responses pertaining to research question 1 are summarised in the figure 9.

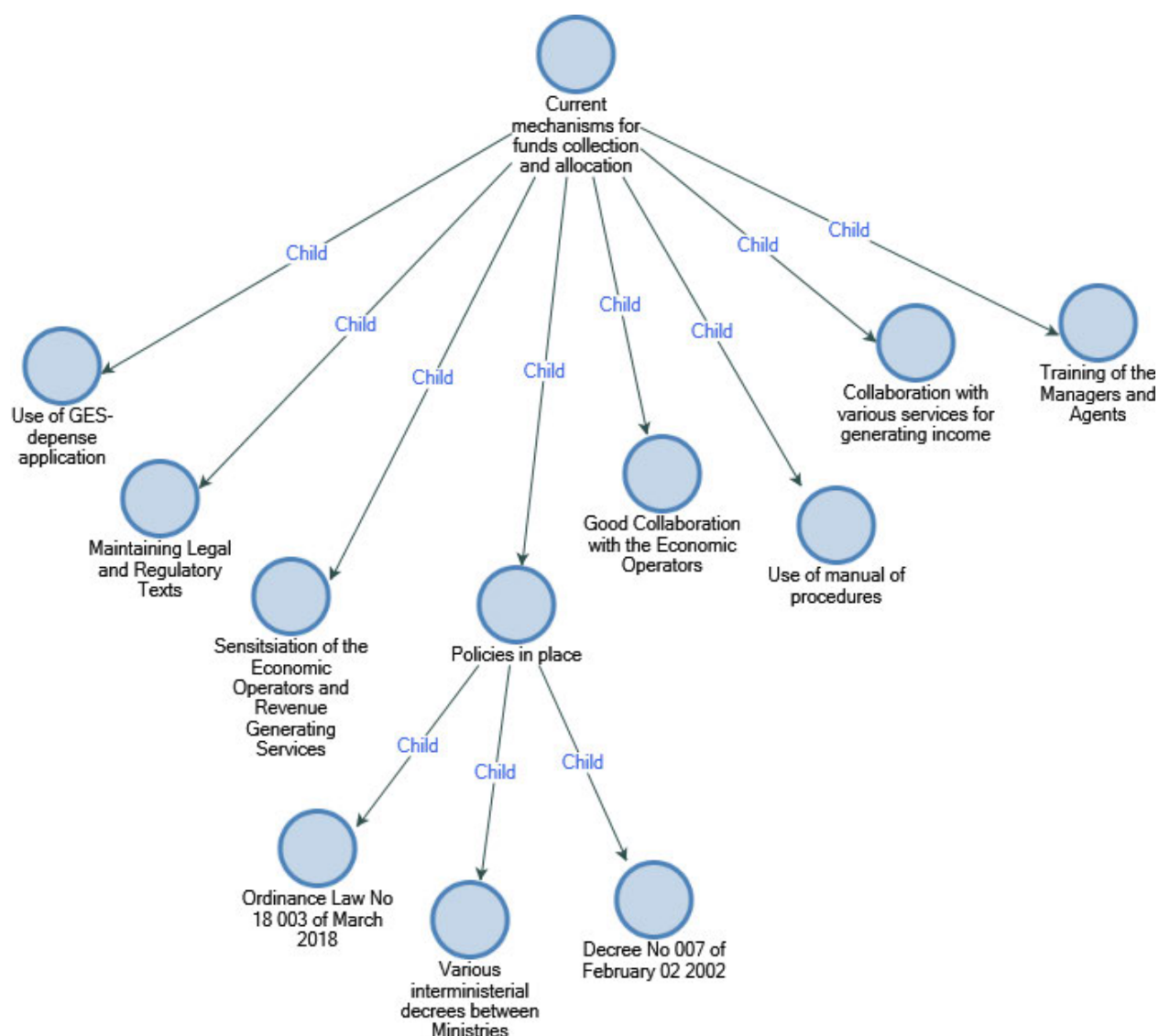


Figure 9: Themes pertaining to research question 1

6.3.2. Research Question 2: How is ICT used currently to collect and distribute public funds?

Table 7: Correlation between the Themes and Research Question Two

Interviewee	Theme	Subthemes	Interview Question
Provincial Ministry of Budget	Use of ICT in Public collection and allocation	Computer	What are the ICT tools being used for Public funds collection and allocation?
		Printer	
		Internet Connection	
		MS Word and Excel	
		Request a Management app to	What is the current plan for ensuring the use of ICT in

		better track the budget	public funds collection and allocation?
		Automate the expenditure budget to adapt it to the revenue budget	
Provincial Ministry of Finances		Computer	What are the ICT tools being used for Public funds collection and allocation?
		Internet connection	
		Tablets	
		MS Word and Excel	
		Acquisition of an appropriate software for the automation of the taxation management	What is the current plan for ensuring the use of ICT in public funds collection and allocation?
		Establishment of a reliable directory of taxpayers to property taxes and rental income tax	
		Interconnection of the provincial Ministry of Finance with the tax collection service, DPMER	
DPMER (Respondent 8)		Computer	What are the ICT tools being used for Public funds collection and allocation?
		Specific Software IMPOSIA	
		MS Word and Excel	
		Integrate Mobile phones and tablets into the funds collection process	What is the current plan for ensuring the use of ICT in public funds collection and allocation?

DPMER (Respondent 9)		Computer	What are the ICT tools being used for Public funds collection and allocation?
		Printer	
		Scanner	
		Specific Software	
		MS Word and Excel	
		LAN	
		Acquisition of a software that responds to the request of the tax authority company: To inform the client about his situation To connect with the Bank for updates of the transactions To connect directly with other divisions	What is the current plan for ensuring the use of ICT in public funds collection and allocation?
DGRAD (Respondent 5)		Computer	What are the ICT tools being used for Public funds collection and allocation?
		Printer	
		Implement a system able to capture and store data	What is the current plan for ensuring the use of ICT in public funds collection and allocation?
DGRAD (Respondent 6)		Computer	What are the ICT tools being used for Public funds collection and allocation?
		Printer	
		MS Word and Excel	
		Implement a management system	What is the current plan for ensuring the use of ICT in

		able to control and schedule clients	public funds collection and allocation?
DGI		Computer	What are the ICT tools being used for Public funds collection and allocation?
		MS Word and Excel	
		Internet facilities	
		Specific Softwares Gestion des impots Taxpayer Directory Management system Vehicle Management System	
		Migrate from Access 2007 to Oracle or SQL Server Database Management system	What is the current plan for ensuring the use of ICT in public funds collection and allocation?
		Taxpayer Directory management system have to be upgraded to a web-based system	
		Deploying the management software to the various Synthetic Tax Centers Revision of Network facilities	

ICT tools being used for funds allocation in the DRC

This section aims to identify the ICT tools being used for funds allocation in the DRC. The respondent 3, from the Provincial Ministry of Budget in the South Kivu province mentioned that the ICT tools being used for allocation of funds are: computers, printers, MS Word and Excel. The respondent 3 highlighted that their offices are connected to internet (Provincial Ministry of Budget, Interview, 2018).

The respondent 3 stated that:

“We have computers, printers and internet connection. We use Word and Excel software often for writing and printing only. We also browse the internet.”

Computer

In the Provincial Ministry of Budget, in the South Kivu province, computers are used for secretarial services only. They have laptops and desktops powered with MS Windows 10, as the operating system.

Software

The Provincial Ministry of Budget, in the South Kivu province, uses the MS Word and Excel for secretarial services only. The printers are then used to print the documents. In addition, browsers, like internet explorer, google chrome and safari are also used to surf on internet. However, this ministry does not have or use any specific software to ensure the allocation of funds in the DRC.

Internet access

The Provincial Ministry of Budget, in the South Kivu province has access to internet in all offices. This internet is used mostly to communicate and share information with other ministries and offices. In addition, workers use it for social media.

Therefore, there is not any ICT tool being used to ensure the allocation of funds in the DRC.

Current plan to ensure the use of ICT in public funds allocation in the DRC

This section discussed the plan to ensure the use of ICT in public funds allocation. According to the respondent 3, the Provincial Ministry of Budget, in the South Kivu province, intend to request a specific management software to better track the budget, and the automation of expenditure budget to better adapt it to revenue budget.

Request a management software

The Provincial Ministry of Budget, in the South Kivu Province, plans to implement a software to manage the budget. This ministry has already made the request of the software to the local software designer's company.

Automation of the expenditure budget to adapt it to the revenue budget

The government has many sources of income and budget of the year depends on the funds collected in the country. For responding to the expenditure in the country, the government has to ensure that there is enough income of revenue collected. This is the reason why the Provincial Ministry of Budget, in the South Kivu Province, plans to manage the expenditures by allocating the funds depending on the percentages in the budget of the year. Therefore, the provincial ministry of budget will be able to manage the budget and allocate the funds automatically, at the required time. In addition, the use of ICT opens the culture of transparency and

accountability in budget execution (Onigbinde 2016)

The respondent 3 stated that:

“We are planning to request a management app that will allow us to better track the province's budget because we are still doing it manually. We also want to automate the expenditure budget to adapt it to the revenue budget using a specific software.”

Themes pertaining to the current use of ICT in public funds allocation are summarised in the figure 10.

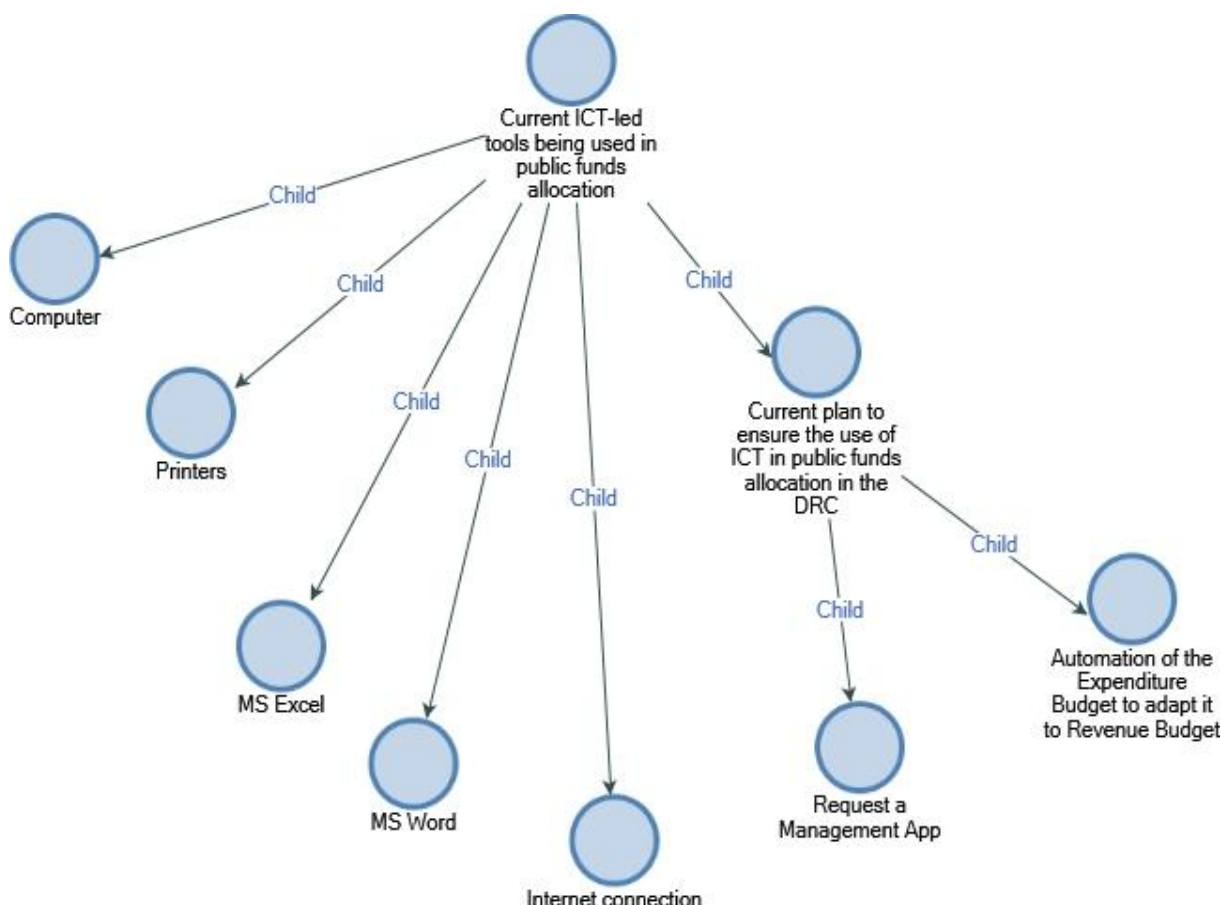


Figure 10: Themes pertaining to the current use of ICT in public funds allocation in the DRC

ICT tools being used for funds collection in the DRC

This section identifies the ICT tools being used for funds collection in the DRC. From the Provincial Ministry of Finance, the respondent 4 mentioned computers, with MS Windows 10 and the MS Office 10, and tablets are the ICT tools being used. In addition, the respondents 8 and 9 stated that the ICT tools used for funds collection are computer, with MS Office 10 and MS Windows 10, printer, scanner and specific software IMPOSIA are the tools being used. The respondents 5 and 6 mentioned that they also use computer, with MS Windows 10 and the MS Word and Excel 2010, and printer. The respondent 7 stated that computers, with specific software, are used for funds collection in the DGI. While ICT is used in other developing

countries for tax collection, with specific software, the DRC is still stuck on using the paper based systems. However, ICT offers many advantages for public funds collection and improve revenue (Hellerstein, Buydens et al. 2018; and Estevao 2019).

Computer

Computers are used in all the ministries and offices concerned by the funds collection. However, these computers are not used for the purpose of the funds collection but for secretarial services only.

Software

Despite DGI, other institutions concerned with funds collection use MS Word and Excel to type the documents. DGI owns some specific software for management of taxes, taxpayer's directory management system and vehicle management system. In addition, DPMER owns a specific software named IMPOSIA but it is not used as required because the system does not respond to the needs of this institution.

Printer

Printers are used in all the ministries and offices based with funds collection to print the documents.

Tablets

In the DPMER, tablets are used for the identification of property taxpayers and for the rental income tax.

From the Ministry of Finance at the provincial level, concerning the current tools being used for funds collection and allocation, respondent 4 stated that:

“We have computers with internet connection, tablets for the identification of property taxpayers and rental income tax, but there is no specific software to manage the funds raised because we always use Word and Excel.”

Respondent 8, from DPMER, stated that:

“In the Collection division, we have a computer, we also use an internally designed software, IMPOSIA, for funds management and also Microsoft Word and Excel. Imposia takes care of the scheduling by respecting all the procedures of collection according to the law of finances”

Respondent 9, from DPMER, mentioned that:

“In the Funds Collection division, we have a computer, a printer and a scanner. The DPMER had a specific software, IMPOSIA, but it is no longer used because it has known flaws. Currently, we use Word and Excel only. We also scan taxation information for backup. We also have the LAN that connects us with other divisions.”

In addition, respondent 7 stated that:

“We have computers and we also use specific applications designed internally. We have the software like Gestion des Impôts, which allows us to track the current account of each listed taxpayer but this application is not connected to the bank. We also have Taxpayer Directory Management software for assigning tax numbers; and Vehicle Management for the management of plates and pink cards. We also use Office and Internet applications.”

At DGRAD, about the ICT tools being used for Public funds collection and allocation, respondent 5 stated that:

“The Funds Collection and Monitoring Division does not use IT tools in the mobilisation of public funds. The tools, such as computer and printer, that this division uses, at its secretariat, is for correspondence only. However, this division is not in a position to give data from non-fiscal revenue data base of DGRAD”

Respondent 6 stated that:

“The only tool we use in the control and Authorisation division is the computer and this for writing and printing only. We use applications like MS Word and Excel.”

Current plan to ensure the use of ICT in public funds collection in the DRC

This section discussed the current plans to ensure the use of ICT for public funds collection in the DRC. Data was collected in the Provincial Ministry of Finance, DGI, DGRAD and DPMER in the South Kivu province.

Interview response from the Provincial Ministry of Finance

According to responding 4, the current plans for the Provincial Ministry of Finance are to; acquire an appropriate software for the automation of the taxation management, establish a reliable directory of taxpayers to property taxes and rental income taxes and interconnect the Provincial Ministry of Finance with the tax collection unit, DPMER.

This respondent stated that:

“Our current plan is the acquisition of appropriate software for the automated management of property taxes and rental income taxes and the additional taxes due to the province and the establishment of a more or less reliable directory of taxpayers to property tax and rental income tax. We are also thinking about the interconnection of the Ministry with the DPMER via a computer system.”

Interview response from DPMER

Respondent 8 mentioned that the current plan of the Authorisation and Control Division, in DPMER, is to integrate mobile phones and tablets into the funds collection process. In addition, respondent 9 from DPMER alluded that the current plan in the Payment Division is to acquire a software that will be able to manage the payment process, inform the taxpayers about their situation, connect with the bank for updates of transactions and connect directly with other divisions.

The respondent 8 stated that:

“our current plan is to integrate phones and tablets into the funds collection process; there will be an application running on Android and a desktop application that will communicate and be used to collect taxation data.”

Respondent 9 mentioned that:

“Our plan is to acquire software that responds to the request of the tax authority. We also want to implement security measures in our system, such as an alert system to inform the taxpayers about their payment. We want the system to connect directly to the bank to update the database as soon as the taxpayer pays at the bank. Also, we want the same system to facilitate communication with the Control and Scheduling division. When the collection note is ready, the system can inform directly the payment division. The system can also inform the taxpayer of its situation with the DPMER.”

Interview response from DGRAD

Respondent 5 from DGRAD alluded that there is a need of implementing a system able to capture and store data in the Authorisation and Control Division. Also, respondent 6, from DGRAD mentioned that the current plan of the payment of funds collection division is to implement a system to control and schedule the taxpayers.

Respondent 5 stated that:

“We are considering the following: to end the manual data collection system and implement, at the division level, a system to capture and store all non-tax data and transmit, confidently, to the hierarchy the receipts ordered, recovered and not recovered over a period.”

Respondent 6 mentioned that:

“Being in possession of computers capable of using management applications effectively, we are considering the implementation of a management application for control and scheduling to ensure quality of work within our division.”

Interview response from DGI

According to respondent 7, the current plan of DGI is to migrate from Access 2007 to Oracle or SQL Server Database Management system, to upgrade the Taxpayer Directory management system to a web-based system and to deploy the management software to the various Synthetic Tax Centers, and the revision of Network facilities.

Therefore, there is need of integrating ICT for public funds collection in the DRC to facilitate the payment of taxes and increase revenue (Chatama 2013), secure tax return, and provide relevant information (Kekana 2011).

Themes pertaining to the current use of ICT for public funds collection in the DRC are presented in the figure 11.

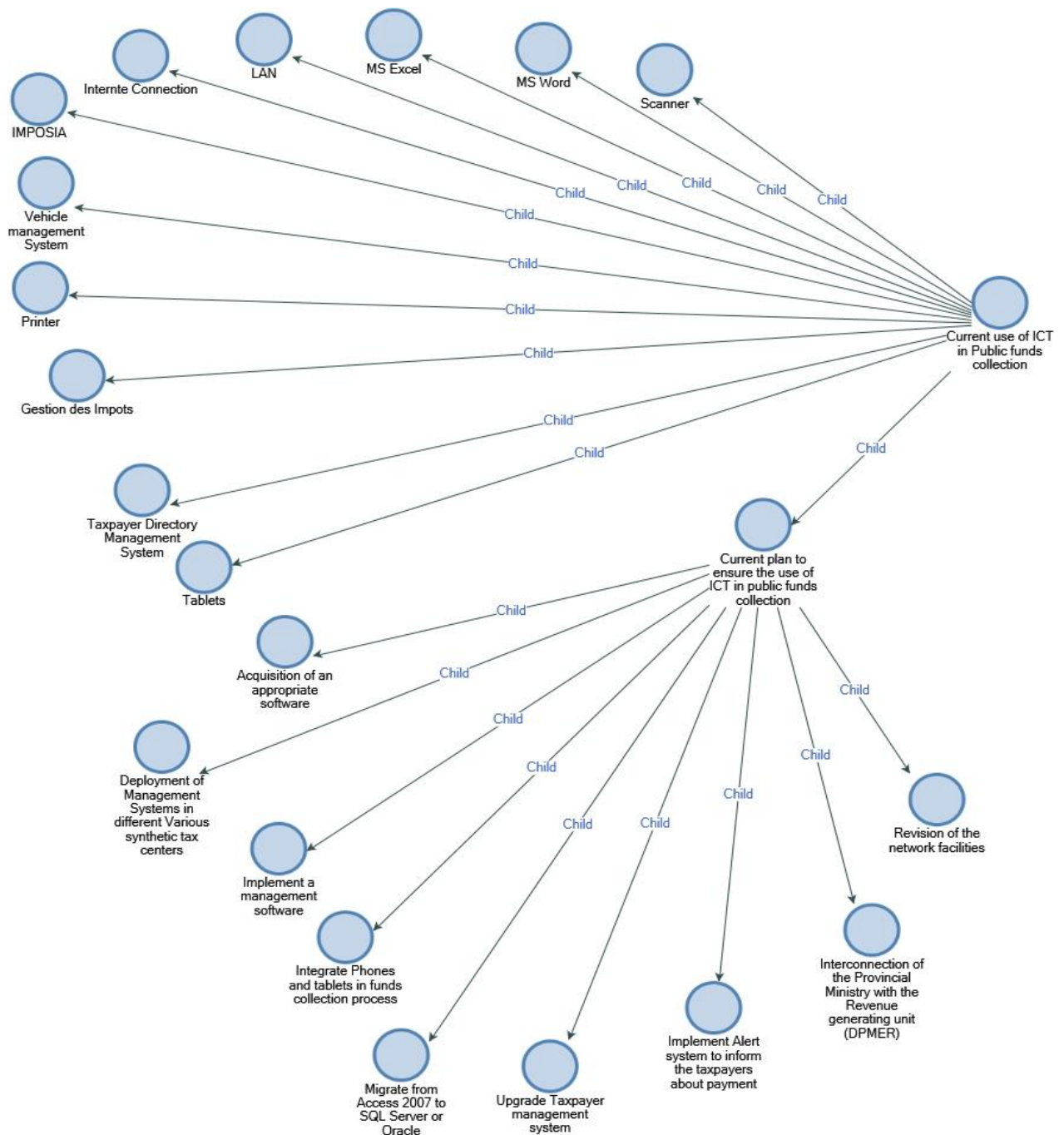


Figure 11: Themes pertaining to the current use of ICT in public funds collection in the DRC

6.3.3. Research Question 3: What are the challenges related to the implementation of ICT for funds collection and allocation?

Table 8: Correlation between the Themes and Research Question Three

Interviewee	Theme	Subthemes	Interview Question
National Ministry of Finance	Challenge in ICT Implementation	Insufficiency of qualified personnel in IT	What are the problems related to the use of ICT in public funds collection and

		Lack of Specific management application for use in public financial management	allocation?
		Inadequate training for the Ministry of Finance staff in IT	
		Insufficient Electricity	
		Non-interconnection of the different revenue generating services on the same system	
		Wish of Computerised environment	What are the opinions of the personnel to the introduction of ICT in public funds collection and allocation?
		Computerisation creates unemployment	
		Computerisation blocks personal interests	
National Ministry of Budget		Computerised system removes certain practices that human believed could bring his interest outside the salary	What are the problems related to the use of ICT in public funds collection and allocation?
		Lower Motivation of the Staff in terms of Salary	

		Non adaptation of some Ministry of Budget staff to the use of ICT	What are the opinions of the personnel to the introduction of ICT in public funds collection and allocation?
		Bad will of government agents for the involvement in corruption practices	
		Lack of awareness and training to the staff	

Problems related to the use of ICT in public funds collection in the DRC

According to the respondent 4, from the National Ministry of Finance, the use of ICT in public funds collection faces many problems namely insufficiency of qualified personnel in IT, Lack of Specific management application for use in public financial management, Inadequate training for the Ministry of Finance staff in IT, Insufficient Electricity, and lack of interconnection between the revenue collection institutions.

Insufficiency of qualified personnel in IT

To ensure training of workers in the National Ministry of Finance in the DRC, the government has opened a National School of Finance but the training in this school is mostly based in financial management, budgeting, accounting, insurances, and customs and excise without thinking on the training in ICT without thinking on the training in ICT (ENF 2015). Thus, the government owns a strong team for financial management with poor training in ICT. In addition, the government of the DRC in collaboration with the World Bank have initiated a program for training of workers in IT but these trainings were limited to the use of basic software like MS word and Excel (Muambi 2015).

Lack of specific software

The government of the DRC does not have a specific software for funds collection. The procedure of paying taxes is still manual, which causes the direct interaction between the taxpayers and the government officials; and opens gates to corruption. According to Chatama (2013), the use of Integrated Tax Administration System increased revenue for Tanzania Revenue Authority.

Inadequate training for the staff

The National Ministry of Finance in the DRC does not provide sufficient trainings for workers in the field of ICT (ENF 2015). These trainings are mostly done in MS Word and Excel.

Lack of electricity

According to RFI (2019), in the DRC, 92% of the population does not have access to electricity. Only 8% have access in urban areas and 1% in rural areas, with power breakout problems. The funds collection process is also facing the same problem, as electricity is not available at the required time. Therefore, many government institutions are using paper based systems to ensure the collection of funds.

Lack of interconnection between revenue collection institutions

The government of the DRC does not ensure collaboration between revenue generating services. Every service collects funds depending on its orientation and these funds are not collected at the same account of the government. Therefore, taxpayers are suffering because they approach many services, with different behaviors for collecting taxes. In this case, there is no insurance if the fund collected was deposited in the bank account of the government as it was collected manually. In addition, the control of the National Ministry of Finance to the revenue generating services is done manually depending on the paper based reports. Moreover, the National Ministry of Finance is not informed about a specific service at the required time.

The respondent 2 stated that:

“At our level, we have the insufficiency of qualified personnel in computer technology; lack of specific management applications for use in public financial management and inadequate training of the Ministry of Finance staff, in the IT field. We also have the problem of electricity as it is not permanent and the non interconnection with the different revenue generating services on the same system.”

(National Ministry of Finance, Interview, 2018)

Opinion of the Personnel to the introduction of ICT in Public funds collection

This section investigated the opinions of the personnel of the National Ministry of Finance to ensure the use of ICT means for funds collection in the DRC. According to respondent 2, from the National Ministry of Finance, the personnel wish to use ICT means for funds collection but the fear of unemployment and the fact that ICT means can limit their personal gains are the two factors that characterise unwillingness of using ICT in public funds collection in the DRC.

Computerised environment

The National Ministry of Finance, in the DRC, does not have a computerised system to ensure the collection of funds. The funds collection procedure is still made manually and there is no

interconnection between the revenue generating services that work under this ministry. In addition, the revenue generating services do not have computerised systems that allow the ministry to manage them and ensure control of funds collected. Therefore, there is direct interaction between the government officials from the National Ministry of Finance and the revenue generating services officials and that open the gate to corruption, due to the fact that the Officials, from the Ministry have influence to the revenue generating services.

Unemployment

In the National Ministry of Finance, some workers consider that the introduction of ICT in public funds collection may affect their jobs and increase the unemployment rate in the DRC. According to (ANAPI 2020), the unemployment rate of the over 84%. In addition, they consider the use of ICT means to impact negatively to their jobs because services will be run online, without direct interaction with the taxpayers.

Personal gain

According to respondent 2, from the National Ministry of Finance, many workers do not accept the introduction of computerised systems in public funds collection because they are aware that ICT means will remove direct interaction between the taxpayers and the government authorities. With the influence of government officials over the taxpayers, they used to be intimidated and request some extra cost on the amount that was supposed to be paid or used for their own gain. As the payment was done in the government officials' hands, in sub urban and rural areas, and at bank account in urban areas. However, the payment cannot be done online, without direct interaction between taxpayers and government officials. Therefore, taxpayers are subject to pay extra cost to get some favors from the government officials.

For instance, concerning the opinion of the personnel to the introduction of ICT in Public funds collection, the respondent 2 stated that:

“Theoretically and in general the staff wishes to see a computerised environment, but there are special cases of those who think that computerisation will create unemployment and block their interests.”

Themes pertaining to the challenges of the implementation of ICT for public funds collection are presented in the figure 12.

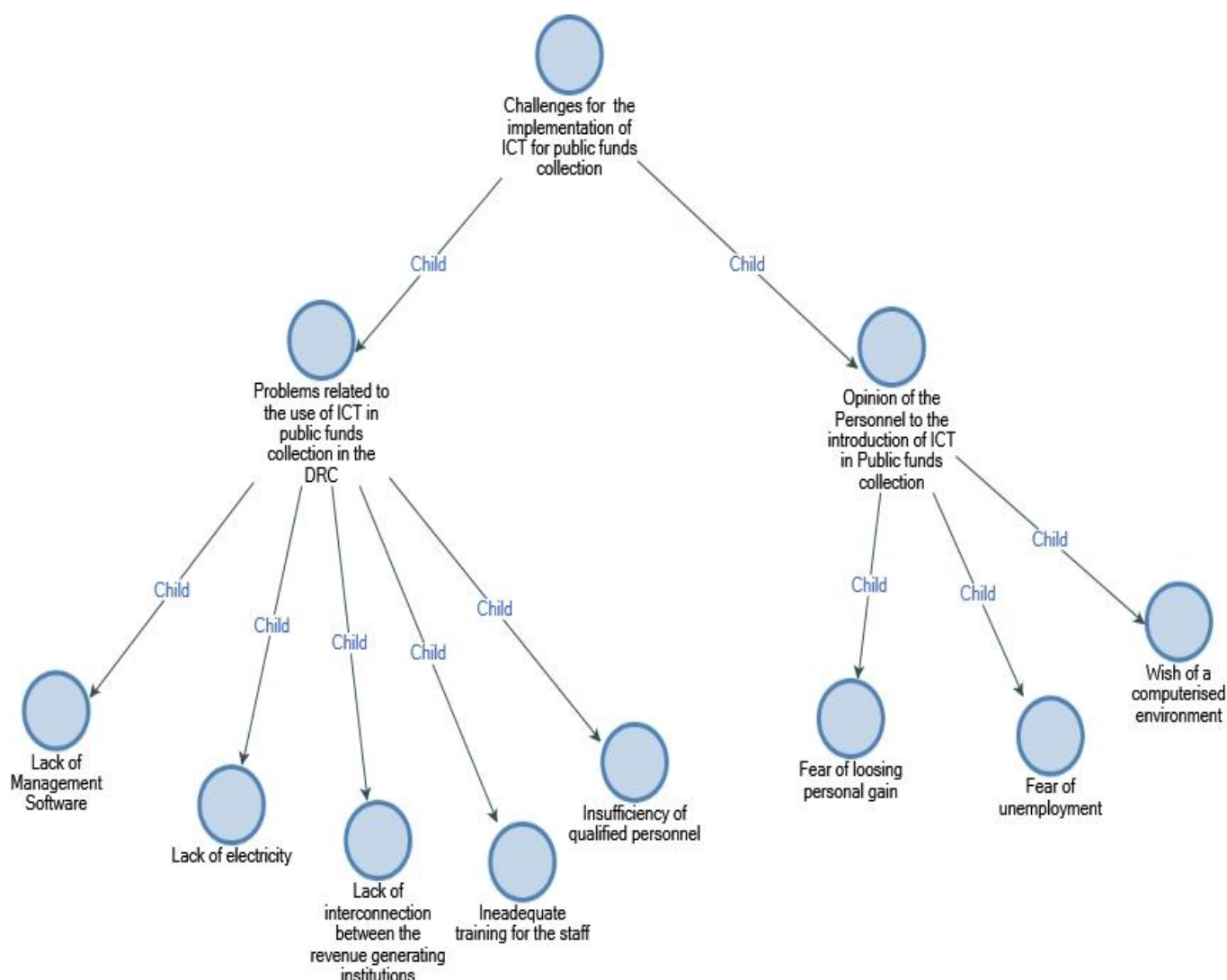


Figure 12: Themes pertaining to the challenges for the implementation of ICT in public funds collection in the DRC

Problems related to the use of ICT in public funds allocation in the DRC

According to the respondent 3, the problems that affect the use of ICT in public funds allocation are based on the unwillingness of the government officials, poor training of workers in IT, lower motivation in terms of salary. The respondent 3 mentioned that these problems are: computerised system removes certain practices that human believed could bring his interest outside the salary; unwillingness of government agents to the involvement in corruption practices; non adaptation of some workers to the use of ICT; and lower Motivation of the Staff in terms of Salary.

Unwillingness of the government officials

Government officials believe that the use of ICT in public funds allocation removes the direct interaction with the taxpayers and affects their interests. With the manual system, the allocation of funds is done between the government officials and the beneficiaries. Respondent 3 stated that: “Man does not like change as the computerised system removes certain practices that

human believed would bring his interest outside of his salary hence Corruption practices” (National Ministry of Budget, Interview, 2018)

Poor training of workers in IT

Ministry workers are not well trained in IT; some have basic skills while others do not have skills in IT. According to respondent 1, from the National Ministry of Budget, stated that non adaptation of some workers to the use of ICT is among the problems that face the implementation of ICT in funds allocation. The respondent 3 mentioned that:

“the non adaptation of some agents to the use of the ICT tools and judge the system to be the responsible for all the errors committed. They always say that this system is having problems even if there is no a problem.”

(National Ministry of Budget, Interview, 2018)

Lower motivation in terms of salary

In DRC, the lower salary of the public servant is less than USD72 and the greater salary is less than USD200, for general secretary in public administration (Deskeco 2019). This salary scale does not allow public servants to cover their basic needs and thus, involve in corruption. According to respondent 1, from the National Ministry of Budget, the lower salary causes the workers to avoid the use of computer systems to ensure funds allocation, as it will affect their interaction with the beneficiaries during the allocation process.

For instance, the respondent 1 stated that:

“Problems cannot miss because man does not like change as the implemented system removes certain practices that humans believed would bring his interest outside of his salary hence the Corruption practices. Also, the lower motivation of staff is another problem because it causes the staff to use system ineffectively and cannot appreciate the implementation of the ICT”

Opinion of the Personnel to the introduction of ICT in Public funds allocation

This section assessed the opinions of the personnel of the National Ministry of Budget to ensure the use of ICT means for funds allocation in the DRC. Respondent 1, from the National Ministry of Budget mentioned that the use of ICT in funds allocation is characterised by the unwillingness of the ministry workers, lack of awareness on the use of computer and poor training of the government workers.

Unwillingness of government workers

According to respondent 1, from the National Ministry of Budget, many workers are involved in abnormal practices during the funds allocation process. They use to impose and request money before allocating funds. This practice is so important to these workers because they earn

much money in every transaction. Therefore, these workers expected that the introduction of a computerised system for funds allocation would affect their interests, as all the transactions would be automated, and the payment would be made depending on the required amount and the percentage in the government budget.

Wish of a computerised environment

Respondent 1 mentioned that using computer for funds allocation is still posing problems because workers in the National Ministry of Budget, were not aware on how computers could be used in funds allocation. However, they agreed that the use of a computerised system for funds allocation could facilitate the work. He alluded that many workers in the National Ministry of Budget, in the DRC, were not trained in using a computer. Some have skills and others were not able to use a computer. In addition, some offices are having computers and some specific system may be installed but workers were not trained on how to use this system.

Respondent 1 stated that:

“Some people do not like the use of ICT because they have bad willing and want to stagnate to the manual system so that they may be able to use the public funds as they want and involve in corruption. Others are in need of using computers but they cannot use computer properly as there is lack of awareness and training because sometimes we install a system without training the staff or raising awareness.”

Themes pertaining to the challenges for the implementation of ICT in Public Funds allocation in the DRC are presented in the figure 13.

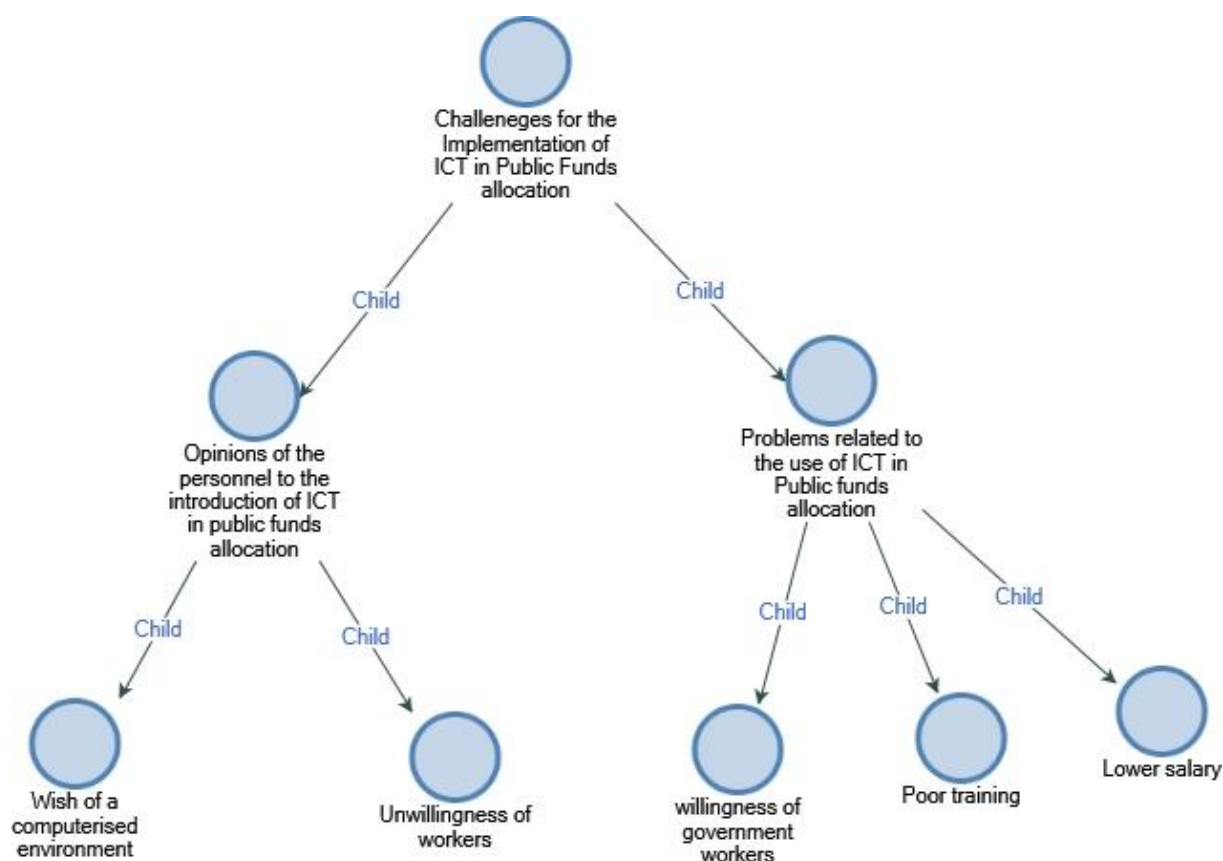


Figure 13: Themes pertaining to the Challenges of the implementation of ICT in public funds allocation

6.3.4. Research Question 4: What are the determinants of ICT for transparency in public funds collection and allocation?

Table 9: Correlation between the Themes and Research Question Four

Interviewee	Theme	Subthemes	Interview Question
Provincial Ministry of Budget	The determinants of ICT for transparency in public funds collection and allocation	Lack of Mechanism	What are the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation?
		Recruitment of the app designers	Please highlight some of the activities undertaken as part of the mechanism (s) highlighted above?
		ICT is better for	Can ICT-led tools be better

		transparency	for ensuring transparency in public funds collection and allocation than the actual mechanism (s)?
		Bad willing of the workers	
		Lack of effective training of workers in ICT tools	What can be the barrier of using ICT for public funds collection and allocation?
		Lack of management Software	
		Insufficiency of qualified workers in IT	
		Lack of Electricity	
		Bad willing of some workers	
Provincial Ministry of Finance		Training of workers in ICT tools	What are the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation?
		Preparation of the training tools	Please highlight some of the activities undertaken as part of the mechanism (s) highlighted above?
		Implementation of the application	
		ICT ensures traceability and transparency	Can ICT-led tools be better for ensuring transparency in public funds collection and allocation than the actual mechanism (s)?
		Bad intention of the workers	What can be the barrier of using ICT for public funds collection and allocation?

DPMER (Respondent 8)		Appeal to the Division of Computer in case of problem	What are the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation?
		Not using flash	What are some of the activities undertaken as part of the mechanism (s) highlighted above?
		Data exchange is done on LAN	
		Limit the installation of application	
		Not a clear space to inform the clients and other stakeholders about the funds collected	Can ICT-led tools be better for ensuring transparency in public funds collection and allocation than the actual mechanism(s)?
		Create a client interface at the Bank to allow access of information from DPMER	
		Lack of financial mean	What can be the barrier of using ICT for public funds collection and allocation?
		Lack of experience in ICT of some workers	
DPMER (Respondent 9)		Lack of Mechanisms	What are the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation?
		Inform the Computer Division	Please highlight some of the activities undertaken as part of the mechanism (s) highlighted above?

		Work depending on the problem in place	Can ICT-led tools be better for ensuring transparency in public funds collection and allocation than the actual mechanism (s)?
		ICT makes easiest services	
		Timely taxpayers support	
		Easier to understand who has made an operation	
		ICT helps the clients to appeal and keep them informed	
		ICT facilitates to make the statistics of the collected receipts for a given period	
		Lack of financial support	What can be the barriers of using ICT for public funds collection and allocation?
		Lack of adequate hardware and software	
		Bad willing of the workers	
		Lack for ICT tools like tablets or smart phones for field data collection	
DGRAD (Respondent 6)		Daily records of the scheduled recipes	What are the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation?

		Transmission of the daily reports of the recipes ordered	Please highlight some of the activities undertaken as part of the mechanism(s) highlighted above?
		Acknowledgement of the reception of the files and shutters	
		Clarification and reporting	
		ICT helps to better understand and save data	Can ICT-led tools be better for ensuring transparency in public funds collection and allocation than the actual mechanism(s)?
		Track data	
		Make timely decision	
		Problem related to the maintenance of the ICT tools	What can be the barrier of using ICT for public funds collection and allocation?
		Unwillingness of some workers	
		Lack of mechanisms	What are the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation?
		A waiting the extension of the management app which is designed at the central administration	Please highlight some of the activities undertaken as part of the mechanism (s) highlighted above?
DGRAD (Respondent 5)		ICT is good for transparency	Can ICT-led tools be better for ensuring transparency in

DGI		Unwillingness of the workers	public funds collection and allocation than the actual mechanism(s)?
		Level of capacities of some workers	What can be the barrier of using ICT for public funds collection and allocation?
		Maintenance of computer and upgrading the system	
		Lack of Electricity	
		Depends on the instruction of the central administration	What are the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation?
		No process is under way to ensure the design or the implementation of the mechanisms	Please highlight some of the activities undertaken as part of the mechanism(s) highlighted above?
		ICT lightens up the work load	Can ICT-led tools be better for ensuring transparency in public funds collection and allocation than the actual mechanism (s)?
		Produce timely proof of payment	
		Reporting at the required time	
		Share information with taxpayers	
		Adaptation of some workers to the use of ICT tools	What can be the barrier of using ICT for public funds collection and allocation?
		Bad intention of some workers	

Use of ICT to address issues related to transparency and accountability in Public Funds allocation in the DRC

This section assessed the use of ICT to address issues related to transparency and accountability in public funds allocation in the DRC.

Mechanisms for the implementation of ICT in Public funds allocation

This section investigated the mechanisms in place to ensure the implementation of ICT in public funds allocation in the DRC. According to respondent 1, from the National Ministry of Budget, the government of the DRC has implemented a manual of procedure that defines the four steps for executing the government expenditure. These steps are namely commitment, liquidation, authorisation and payment. However, according to respondent 3, from the Provincial Ministry of Budget, there was no mechanism to ensure the implementation of ICT in public funds allocation in the South Kivu province. Respondent 3 mentioned that it was still difficult to talk about the mechanism of using ICT in public fund allocation because everything is done manually.

Respondent 3 stated that:

“Currently, it is difficult to talk about the mechanisms we use to ensure the implementation of ICT in the allocation of expenses because we do not have the necessary tools that are used for the allocation of funds, everything is done manually. We first think of the implementation of applications before moving to the management policy.”

About the activities undertaken as part of the mechanisms, respondent 3 alluded that they are in the process of implementing the application to support the government in funds allocation. Actually, the Provincial Ministry of Budget is in the process of recruiting the company to design the system that would support the provincial government of the South Kivu in funds allocation. Respondent 3 highlighted that they planned to start the design of the application in January 2019. However, the respondent 3 was not able to mention how the system would be implemented successfully.

Respondent 3 mentioned that:

“We are in the recruitment phase of the app designers that we plan to start around January 2019.”

Comparison between ICT-led tools and Manual system for transparency in public funds allocation in the DRC

This section identified how ICT-led tools could be important over the manual system in the allocation of public funds in the DRC. According to respondent 3, from the Provincial Ministry of Budget, the allocation of funds is characterised by the use of manual system. However,

respondent 3 highlighted that ICT-led tools are better in public funds allocation than the manual system because as it allows easy access to information and hinder the direct interaction between the government workers and the beneficiaries, as mentioned by Alade, Abiodun et al. (2014); Kirmani, Wani et al. (2015); Haimanote (2016); and Danida (2012). In addition, the government is well informed about the payment at the required time and enable the payment depending on the percentages in the budget. With the manual system, the government officials have the possibility of committing corruption because they have influence over the beneficiaries and the allocation is done depending on the amount in place without focusing on the percentages in the budget. In addition, the payment is made depending on the willingness of the government officials without considering the priority in the payment process. Therefore, the implementation of ICT was still having problem because users are badly intentioned and involved in committing fraud and corruption.

Respondent 3 stated that:

“It is true that ICT is good for transparency, but its use poses problems as people do not give themselves to its application or if the users are badly intentioned; because use of manual system facilitates agents to commit acts of corruption and fraud.”

Barriers of using ICT for public funds allocation

This section identified the barriers of using ICT in public funds allocation in the DRC. According to respondent 3, from the Provincial Ministry of Budget in the South Kivu Province, there are many problems that affect the use of ICT in public funds allocation, as indicated by Odooyo, Adero et al. (2014). Among these problems there are lack of effective training of workers in ICT-led tools, lack of software, poor training of workers in using ICT-led tools, lack of electricity and unwillingness of workers.

Respondent 3 stated that:

“lack of effective computer training and lack of management software adapted to the activities of the Ministry problems; insufficiency of qualified workers in using computers, lack of electricity and unwillingness of workers are the main problems that affect the use of ICT in this ministry.”

Poor training in IT

Respondent 3 highlighted that computer trainings in the provincial ministry of budget in the South Kivu Province are limited to the basics in MS Word and Excel. However, trainings are not effective and successful because many workers are not using computers in their offices.

Computers are used mainly for secretarial services. Therefore, the Provincial Ministry of Budget did not have many qualified workers in using computer.

Lack of software

The Provincial Ministry of Budget, in the South Kivu, does not have any specific software to ensure the allocation of funds. They use only the manual system to allocate funds which opens the gate to corruption.

Lack of electricity

There is a serious problem of electricity in the DRC. The Provincial Ministry of Budget is facing power breakout problem every time. They use a generator which cannot support many offices and use the required equipment at once.

Unwillingness of workers

Many workers in the Provincial Ministry of Budget do not appreciate the use of computer in public funds allocation because it can affect their personal gain. They are badly behaved and involve in corruption acts as they have influence over the beneficiaries, and impose extra money before paying the government debts and allocate funds according to the budget.

Themes pertaining to the use of ICT to address issues related to transparency and accountability in public funds collection in the DRC are presented in the figure 14.

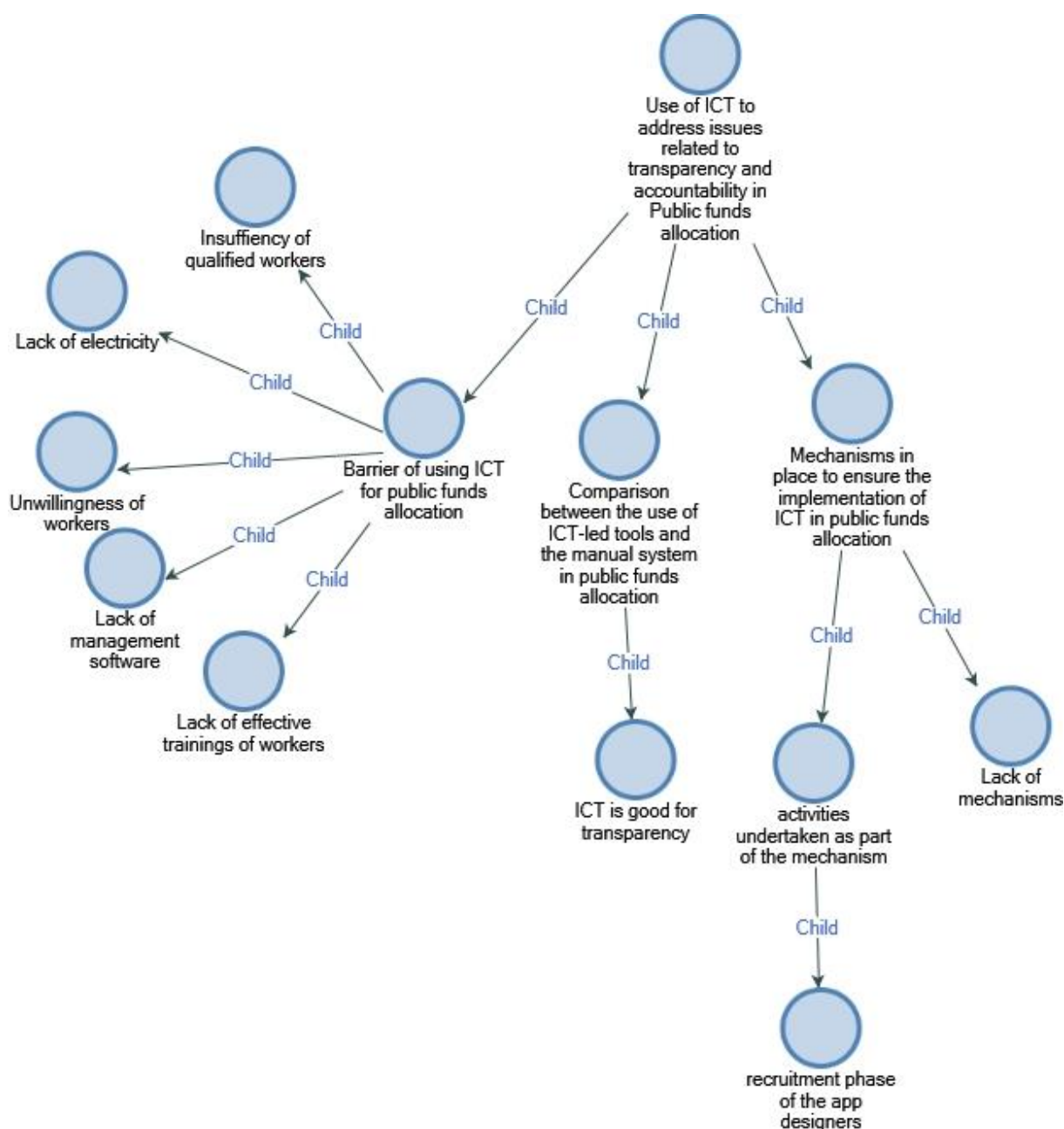


Figure 14: Themes pertaining to the use of ICT to address related to transparency and accountability allocation in the DRC

Use of ICT to address issues related to transparency and accountability in Public Funds collection in the DRC

This section assessed the use of ICT to address issues related to transparency and accountability in public funds collection in the DRC.

Mechanisms for the implementation of ICT in Public funds collection

This section investigated the mechanisms in place to ensure the implementation of ICT in public funds management in the DRC. The National Ministry of Finance in the DRC defines four steps for funds collection (MinistèredesFinances 2011). In difference to the steps from the National Ministry of Budget, this section concerns the taxpayers but public funds allocation section

concerns the payment of government debts and duties. However, Haimanote (2016) ensured that ICT reduces fraud and tax evasion and increase revenue.

Response from the Provincial Ministry of Finance

According to respondent 4, the Provincial Ministry of Finance, in the South Kivu province does not have a mechanism to ensure the implementation of ICT in funds collection. However, they depend on the training of workers in basic software like MS Word and MS Excel. Therefore the use of ICT in funds collection is seldom. In addition, respondent 4 highlighted that the ministry still planned to implement a system for funds collection by January 2019. Respondent 4 highlighted that the ministry is actually planning for training tools for the system that would be implemented but they still needed the appraisal of the application by the Minister.

Respondent 4 stated that:

“The only mechanism we have is the training of agents on computer tools and currently we are considering a training of executives and agents on the use of the software that will be applied in January 2019.”

the activities undertaken as part of the mechanism are:

“Preparation of training tools, implementation of the application but also appraisal of the application by the Minister.”

Response from DGRAD

Respondent 5 mentioned that there was no mechanism to ensure the implementation of ICT in public funds collection at DGRAD, but there was a software that was developed at the central administration level, which may be provided with a user manual and probably with the procedure manual for its management. In addition, respondent 6 stated that the control and scheduling division of DGRAD does not use ICT for its management that is why they couldn't have a clear mechanism for the implementation of ICT in funds collection. The respondent 5 highlighted that, at the central administration, in Kinshasa, there was already a software which was applied and there was a plan to extend it in different offices of DGRAD around DRC. Additionally, respondent did not highlight any plan for the activities undertake as part of the mechanism but mentioned that using the manual system, they make daily reports, acknowledgement of the reception of the recipes ordered, clarification and reporting.

Concerning the mechanisms in place to ensure the implementation of ICT in public funds collection, respondent 5 stated that:

“Currently, there is no mechanism except that there is an outstanding application at the central administration level and we hope that it will come with a user manual and a procedure for its management.”

About the activities undertaken as part of the mechanism, respondent 5 alluded that:

“With regard to the design management software at the central administration level, the first step is already in place, in the management of incomes that have been scheduled and collected at the central government level. The next step will be its extension at the provincial level.”

Concerning the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation, respondent 6 stated that:

“As there is no an important IT equipment within our control and scheduling division, we do not focus our ideas on the mechanisms except that we enter the tabs with daily records of the scheduled recipes.”

And about the activities undertaken as part of the mechanism, respondent 6 mentioned that:

“transmission of the daily reports of the recipes ordered, to the Office of the Provincial Director; Acknowledgment of reception of these files and the classification and reporting”

Response from DGI

Respondent 7, from DGI, mentioned that all the decisions are made in Kinshasa, at the central administration, and they do not have a mechanism to ensure the implementation of ICT in public funds collection.

About the mechanisms in place to ensure the implementation of ICT in public funds collection, respondent 7:

“As part of our service, all decisions are taken at the level of Kinshasa and we depend greatly on the instructions of the central administration. So, we do not currently have mechanisms on which we rely to ensure the implementation of ICT in the Management of Public Funds.”

And about the activities undertaken as part of the mechanism, he mentioned that:

“There are no mechanisms to date and no process is underway to ensure its design or implementation”

Response from DPMER

According to respondent 7, there was no a clear mechanism to ensure the implementation of ICT in public funds collection but they do appeal to computer department in case of a problem. Respondent 8 also, highlighted that currently there was no a mechanism applied to ensure the

implementation of ICT and mentioned that the computer division is promptly informed about the problems and react directly. Concerning the activities undertaken as part of the mechanism, the respondent 8 alluded that they didn't use flash discs, LAN is used for data sharing and they do limit the installation of application and update antivirus for security purpose.

About the mechanisms in place to ensure the implementation of ICT in public funds collection, respondent 8 stated that:

“for the moment, there is not a clear mechanism to ensure the implementation of ICT, in case of a problem we do appeal to the division of the computer which helps us to repair and answer our problems.”

Respondent 9 stated:

“currently there are no mechanisms applied to ensure the implementation of ICT, except if there is a problem, one informs directly the Computer Division.”

And concerning the activities undertaken as part of the mechanism, respondent 8 stated:

“To ensure security, we do not use flash discs, all data exchanges are done on the LAN, update antivirus, limit the installation of applications.”

Respondent 9 mentioned that:

“As noted above, there are no mechanisms, the IT division operates depending on the problem in place.”

Comparison between ICT-led tools and Manual system for transparency in public funds collection in the DRC

This section investigated the importance of using ICT-led tools over the manual system, for transparency in public funds collection in the DRC.

Response from the Provincial Ministry of Finance in South Kivu Province

Concerning the use of ICT-led tools to ensure transparency in public funds collection than the actual mechanism. Respondent 4 highlighted that the use of the manual system facilitated fraud and corruption between the taxpayers and the paying agents, because there is direct interaction and the paying agents have influence over the tax payers. They could impose taxes without considering the nomenclature where taxes are defined. Sometimes paying agents collect funds without giving the receipt to the taxpayers and used the amount collected for their own gains. This is common in the DRC because most of the taxpayers are complaining about the behaviour of the paying agents as they are involved in abnormal practices and commit corruption. Despite all these problems, respondent 4 mentioned that ICT-led tools could be most important because it ensures traceability and transparency. He highlighted that with ICT-led tools taxpayers are well informed about the amount to be paid for a specific tax and may pay online, without the

direct interaction with the paying agents. In addition, the taxpayers are well informed and updated, automatically, about their payments. Therefore, ICT-led tools are more important than the manual system in terms of funds collection because information about the taxes is available, anytime, and payment is made according to the amount defined, without direct interaction with the paying agents.

Respondent 4 stated that:

“The transition from manual system to the automatic system always poses problems, because there are certain practices that the human being does with manual system such as fraud and corruption between the taxpayer and the paying agents but with the computer tool, there is insurance of traceability and transparency in the mobilisation of public funds.”

Response from DGRAD

Concerning the use of ICT-led tools and the manual system to ensure transparency in public funds collection, respondent 5 mentioned that ICT-led tools are better in ensuring transparency because they enable taxpayers to be informed about the taxes and make online transaction. However, its use faces problem due to the unwillingness of some workers who want to remain in the manual system for protecting their own interests. With the manual system, taxpayers are not well informed about the taxes and the payment is done in the own hands of the paying agents in some areas, without a receipt. In addition, the manual system is appreciated with some taxpayers due to their relations with the paying agents, they may pay little amount.

Respondent 5 stated that:

“We are sure and certain that ICT can ensure the transparency in the mobilisation of funds except that its use can cause problems if it faces the malicious people including the taxpayers who only counts on their interests.” (DGRAD, Interview, 2018)

Moreover, respondent 6 highlighted that ICT-led tools help to better understand the process of paying the taxes and the amount that is supposed to be paid. In addition, ICT-led tools help to save and track data, and make timely decision. Respondent 6 alluded that:

“Certainly, we need ICT to ensure transparency because it will allow us to better understand and save data, track data and make timely decisions.” (DGRAD, Interview, 2018)

Thus, the manual system cannot be compared to ICT-led tools in terms of enhancing transparency because taxpayers are informed about the taxes, payment is done online, without direct implication of the paying agents, and decision is made at the required time.

Response from DGI

Respondent 7 mentioned that ICT-led tools cannot be compared to the manual system in ensuring transparency in public funds collection. He highlighted that ICT-led tools allow to share information with the taxpayers, produce timely proof of payment, and make timely report. With the use of ICT-led tools, taxpayers are informed about their payment situation and make online transactions. Thus, ICT help to lighten up the work load. Respondent 7 stated that:

“ICT is very important because it allows us to lighten up the work and produce, timely proof of payment and reporting, and also to share information with taxpayers.” (DGI, Interview, 2018)

Response from DPMER

According to respondents 8 and 9, the current system of DPMER is manual. Concerning the use of ICT-led tools to ensure transparency in public funds collection, respondent 8 alluded that there is not a clear space to inform the taxpayers and other stakeholders about the funds collected. All the processes of funds collection; engagement, liquidation, authorisation and payment are done manually. The taxpayers are not aware of their payment situation because there is no feedback or update about the payment. However, respondent 8 highlighted that ICT-led tool is better to ensure transparency than the manual system because taxpayers and government are able to access information from DPMER at the required time and may be updated accordingly. With a computerised system, a client interface can be implemented to allow access of information from DPMER. Respondent 8 stated that:

“Actually, transparency is still complex because there is no clear space to inform the paying agents and other stakeholders about the funds collected, but in the next year there will be an application that will allow to monitor funds collected by involving all the stakeholders namely provincial government, the Ministry of Finance at the Provincial level and the DPMER. A client interface will be created at the bank to allow access to the information of the DPMER account.” (DPMER, Interview, 2018)

Respondent 9 highlighted that the use of ICT-led tools provide easiest services and ensure timely taxpayers support to orient the taxpayers about the taxation process. Further, ICT-led tools facilitate the operations and inform the paying agent about the person who has made the operation. Additionally, ICT-led tools enable the taxpayers to appeal about the operation that was wrongly made and facilitate the paying agent to make statistics about the collected funds at a given period. Therefore, ICT-led tools are better to ensure transparency in public funds collection than the manual system because all the operations are made openly and all the stakeholders are well informed about the payment processes.

Respondent 9 stated that:

“ICT makes us easier in many ways, with ICT there is timely taxpayer support, which can also help the Province to function better; ICT can also make it easier for us to understand who has done an operation; if we add, modify or delete, ICT can easily identify who did it. ICT can also facilitate clients to appeal and keep them informed; also, ICT can facilitate us to make the statistics of the collected receipts of a given period.” (DPMER, Interview, 2018)

Barriers of using ICT in public funds collection

This section investigated the barriers of using ICT in public funds collection in the DRC. Researcher interviewed the Provincial Ministry of Finance in the South Kivu Province and the services in charge of funds collection, namely DGRAD, DGI and DPMER.

Response from the Provincial Ministry of Finance

According to respondent 4, the main barrier of using ICT-led tools in public funds collection is the unwillingness of workers who are involved in fraud and corruption. They do not want reforms and need to remain in the manual system. Respondent 4 stated that:

“Unwillingness of workers who do not want reform for their selfishness and personal interests in the management of public funds is the problem that we are facing in this ministry”

Response from DGRAD

Respondent 5 mentioned that the problem of using ICT-led tools in public funds collection are related to the maintenance and the unwillingness of some workers. Respondent 5 stated that:

“Obstacles may depend on the level of capabilities of the staff who will be trained and reformed at any time on the use of ICT, the maintenance of computer equipment and their upgrading if necessary and the lack of permanent electricity.”

In addition, respondent 6 highlighted that many workers are not able to use computers, and there is serious problem of electricity and maintenance of computers. He alluded that:

“There are many problems with the use of computer tools as most of our workers do not control its use, the problems related to the maintenance of the computer equipment and the unwillingness of workers who believe that computers will affect their work.”

Response from DGI

Concerning the barriers of using ICT in public funds collection, respondent 3 highlighted that the obstacles that affect the use of computer in the DRC was the unwillingness of some workers who are involved in corruption and fraud, and believed that the use of computerised systems

could affect their jobs. In addition, some workers are not able to use the computers.

Respondent 7 stated that:

“The major obstacle is the level of adaptation of workers in the use of computer and also the unwillingness of workers who believe that ICT can tear them off their responsibilities but also block them in the frauds and corruption practices.”

Response from DPMER

According to respondent 8, the barriers of using ICT-led tools in public funds collection are mainly the lack of financial supports to acquire the equipment and ensure maintenance and the lack of experience of some workers in using computer.

Respondent 8 stated that:

“the obstacles are: lack of financial supports that to facilitate the implementation of ICTs and the lack of experience of some workers”

In addition, respondent 9 mentioned that the barriers of using computer systems in collecting funds are lack of adequate hardware and software, which means that DPMER does not have computer equipment and software to ensure public funds collection. Moreover, there is unwillingness of some workers who want to stay in the manual system to facilitate their corruption practices and protect their interests. Respondent 9 also highlighted that the lack of tablets or smart phones, specifically for collecting field data is another problem that affect funds collection process because the information of the taxpayers is well updated.

Respondent 9 stated that:

“lack of sufficient financial support is a big obstacle. There is also lack of hardware and the lack of software but also the unwillingness of some agents who think that with the introduction of computers can affect their interests. Also, the lack of ICT-led tools like tablet and smart phones for data collection.”

Below is the summary of barriers of using ICT in public funds collection in the DRC:

Unwillingness of workers

Respondents from the provincial ministry of finance, DGRAD, DGI and DPMER mentioned that the process of public funds collection is characterised by corruption as the government workers are involved in committing corruption and fraud acts. This phenomenon affected workers and now they are not ready to use computer for public funds collection.

Lack of computer equipment and lack of specific software

According to the respondents from DGRAD, DGI and DPMER, the use of computer in public funds collection is still facing many problems. In some offices, computers are used for secretarial services and other offices are having computers. In addition, there is no specific

software and ICT tools like tablets and smart phones are not used for funds collection in the DRC.

Poor maintenance of computers

Respondent 5 and 6, from DGRAD, highlighted that computers, in their offices, are not well maintained. They are exposed to problems and antivirus are not installed. This problem affects the effective use of computers because they are always facing issues due to lack of maintenance.

Lack of electricity

The problem of electricity is common in the DRC. As mentioned above, the majority of Congolese are not having access to electricity and others are facing the power blackout problems. Generators are used in many offices but still there is a problem because the generator cannot support many equipment.

Lack of training in IT

The use of computer in some offices in the DRC is still a problem. Some workers have poor qualification and are not adapted to the use of computer. Others can use computer but are not having experience on the use of computer for funds collection.

Fear of losing jobs

Many workers believe that the introduction of ICT-led tools in public funds collection can affect their jobs. They decide to use all the mechanisms to hinder the use of computers and ICT tools in public funds collection.

Lack of financial supports

Respondents from DPMER confirmed that the lack of financial means is among the factors that block the introduction of ICT in public funds collection because there are no funds to acquire the equipment and the maintenance funds.

Themes pertaining to the use of ICT to address issues related to transparency and accountability in public funds collection are presented in the figure 15.

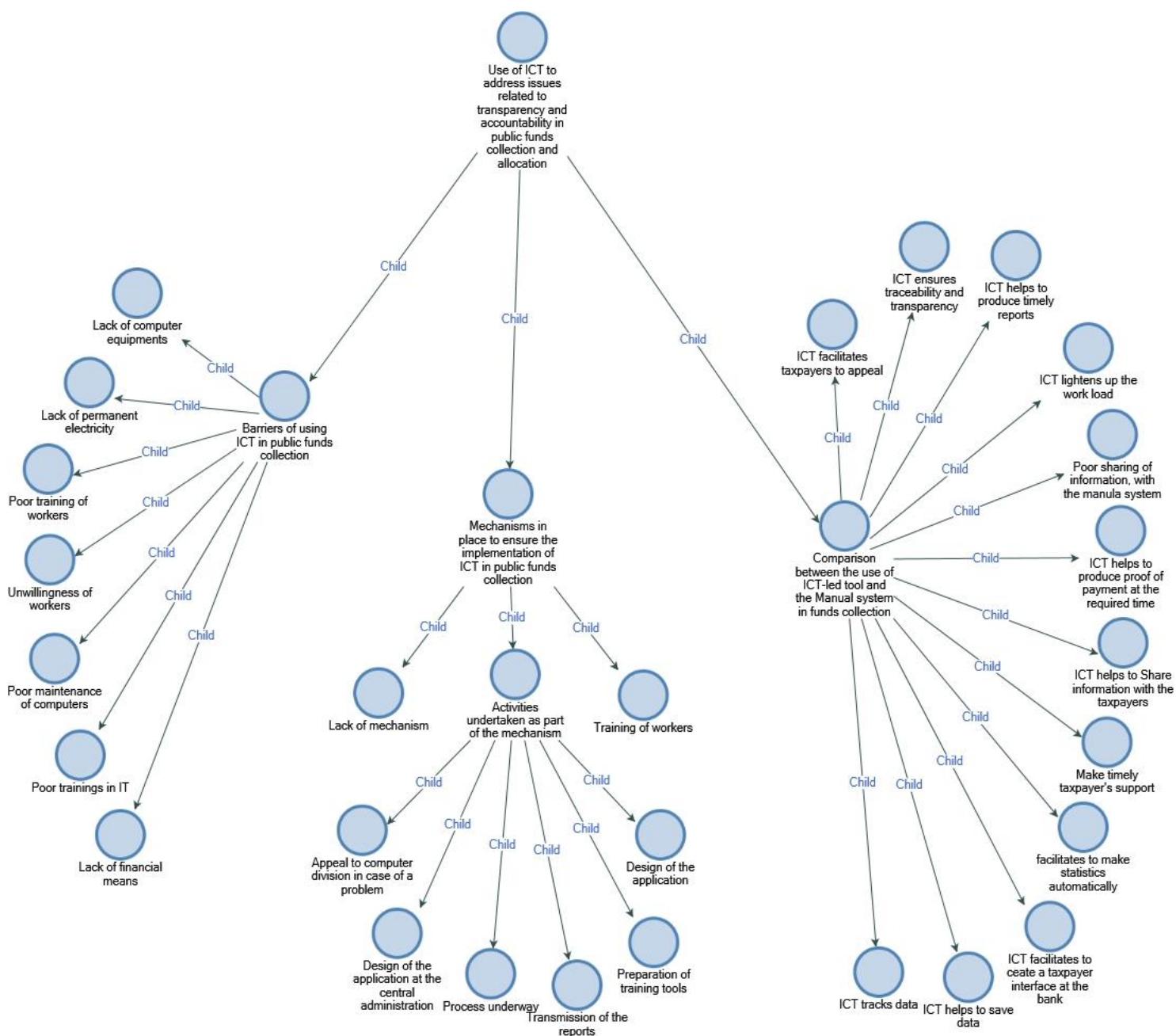


Figure 15: Themes pertaining to the use of ICT to address issues related to transparency and accountability in Public Funds collection in the DRC

6.3.5. Research Question 5: What are the public perceptions of using ICT as a mean to address transparency and accountability issues in public funds collection and allocation?

Table 10: Correlation between the Themes and Research Question Five

Interviewee	Theme	Subthemes	Interview Question
Civil Society Representative of Fizi territory	Public Perception of using ICT as a mean to address transparency and accountability issues	Impose taxes regardless of the nomenclature	What are the formal processes for paying taxes within the community?
		The population pay taxes which is not on the nomenclature	
		There is no mechanism to inform the population about the taxes	What are the mechanisms in place to inform the community about the taxes?
		The paying agents impose the taxes to the population without informing them about the taxes or awareness	
		The Population of Fizi is illiterate	What can be the barriers of using ICT for public funds collection in your community?
		The population does not know how to use computers	
		The information system of the Government is not computerized	
		Lack of internet	
Civil Society Representative of Uvira		Paying agents impose the taxes without informing the	What are the formal processes for paying taxes within the community?

Territory		population about the taxes	
		The population pay the taxes without receipts	
		The population is intimidated in paying taxes	
		Payment is made in the own hands of the paying agents	
		Lack of Mechanism	What are the mechanisms in place to inform the community about taxes?
		Paying agents ask taxes without informing or raising awareness about the taxes	
		Paying agents arrive at the taxpayers market or shop to collect taxes	
		The majority of the population is not informed about the use of computer in Uvira Territory	What can be the barriers of using ICT for public funds collection in your community?
		Ignorance of the use of ICT	
Civil Society Representative of Kabare Territory		The population is not well informed about taxes	What are the formal processes for paying taxes within the community?
		Taxation payment mode is not well	

		known	
		No Mechanism in place	What are the mechanisms in place to inform the community about the taxes?
		The population is not aware of the taxes to be paid	
		The population pay taxes without knowing the validity of the taxes	
		Lack of Communication means in some areas of Kabare Territory	What can be the barriers of using ICT for public funds collection in your community?
		The level of education of the community	
		Bad willing of the paying agents due to the fear of losing their interests	

Formal processes for paying taxes within the community

This section investigated the processes in place for paying taxes within the community. The community where presented with the civil society representatives in the selected territories.

Response from community representative in Fizi Territory

According to respondent 10, there is no any formal process applied for paying taxes within the community. In DRC, all taxes are defined in the nomenclature but the community is not informed about the nomenclature and there is lack of communication about the taxes. Due to this situation, the population pay taxes depending on the willingness of the paying agent. In addition, the paying agent impose taxes regardless of the nomenclature. Therefore, the population is facing many problems in paying taxes and undefined taxes are imposed on them. Respondent 10 stated that:

“Taxes collected from the population are among the resources in the DRC. However, in Fizi territory, there is lack of information about the taxes that the population is

supposed to pay. Nomenclatures are not communicated to the population, which makes paying agents to collect taxes according as they want; they impose taxes regardless of the nomenclature and sometimes the population pays a tax that is not on the nomenclature.”

Response from community representative in Uvira Territory

Respondent 11 mentioned that the formulation of taxation law and the budget of the year, at the provincial level, is the responsibility of the provincial assembly. These laws define taxes, payment processes, expenses and revenues to cover these expenses. However, the population was not aware about these taxes and the budget. There was no any strategies to inform the population about the taxes and any formal process to taxes in Uvira territory. Further, the population is paying the taxes without being informed about the taxes and the receipt is given depending on the willing of the paying agent. Taxes are imposed to the population and are paid by intimidation, from the paying agents, and in its own hands. This phenomenon affects the government in the execution of the budget because some funds are not collected as required to the process in place for collecting taxes.

Respondent 11 stated that:

“With respect to the process of paying taxes, it is the provincial assembly that votes the applicable tax laws in the province depending on the voted revenue and expenditure budgets. However, at the level of the population or taxpayers, there are no strategies put in place to inform or popularise the budget of the year to the population. The population is subjected to taxes without being informed and they pay taxes without receiving the receipt of the tax paid. Paying agents impose taxes without informing the public about the tax or letting them why they have to pay it. The payment of taxes is made by intimidation and in the own hands of the paying agent and it is up to him to decide whether he can give you a receipt or not.”

Response from community representative in Kabare Territory

According to respondent 12, there was no any formal process for paying taxes within the community in the two sub counties of Kabare Territory. He highlighted that the population was not informed about the taxes and some taxes were paid in one Sub County, as it was not same case in another. In addition, the population was subjected to pay a tax twice due to the unwillingness of the paying agents who used to intimidate the population when they are collecting taxes.

Respondent 12 alluded that:

“In the territory of Kabare, there is no process applied for the payment of taxes. As the population is not well informed about taxes, they are paid differently in the two sub counties that make up the territory of Kabare. There are taxes that are paid in one Sub county but not paid in another. Also, as the population is not informed about taxes and the mode of payment, the population is subject to pay a tax twice.”

Mechanisms to inform the community about the taxes

The aim of this section is to investigate the mechanisms that are used by the government of the DRC to inform the population about the taxes or to raise awareness during the taxation process. The nomenclature that defines taxes must be known and the taxation process must be well defined to ensure the successful collection of funds.

According to respondent 10, from Fizi territory, there is no mechanism in place to inform the population about taxes. Population pay taxes without being informed about taxes. Paying agents impose taxes without raising awareness.

“there are no mechanisms to inform the population about taxes; the paying agents impose taxes without information or raising awareness.” (Civil Society Representative Fizi Territory, Interview, 2018)

In addition, respondent 11 mentioned that the government does not put in place mechanisms to inform the population about taxes. The nomenclatures which defines taxes are not known within the community. The population is paying taxes without knowing the validity and the benefit of it.

“There is no mechanism in place to inform the population about taxes; paying agents collect taxes without informing or raising awareness” (Civil Society Representative Uvira Territory, Interview, 2018)

Further, respondent 12 alluded that there is no mechanism to inform the population about the taxes. Respondent 12 stated that:

“In the territory of Kabare, there are no mechanisms to inform the population about taxes. The population is always surprised by the presence of paying agents who impose taxes without knowing the validity of the tax. The population is not aware of taxes, so everything is done abruptly.”

Therefore, the government of DRC does not have any mechanism in place to inform the community about taxes and the population is subject to intimidation in paying taxes.

Barriers of using ICT in public funds collection in the community

This section identified the barriers that cannot allow the community to use effectively the computers for paying taxes in the DRC.

Illiteracy

In the DRC, the majority of the illiterate people are living in the rural areas. According to respondent 10, the majority population of Fizi territory are illiterate and are not able to use computer. Some are not able to read and write, while others can read and write but cannot be able to use a computer. He stated that:

“Most of the population of the territory of FIZI is illiterate; the population does not maintain the use of the computer tool”.

In addition, respondent 11 mentioned that in Uvira territory, the use of computer is still seldom because computer is not even known in some areas. This is due to poor level of education in the communities of Uvira. Respondent 11 stated that:

“The use of computer is not yet well known with many people in Uvira territory, the population must be trained and raise awareness on the use of computer” and “as the use of computer is not yet well known with many people in Uvira territory, the population must be trained and raise awareness on the use of computer.”

The respondent 12, confirmed that computer is still unknown with the majority of population in Kabare territory and the population cannot be able to use it because some are not aware and others are informed but not trained in using it. He stated that:

“The population can appreciate the use of ICT to solve the problems that affect them, but they may face some problems as the population is not aware on using the Computer; and the level of education of the population in Kabare does not allow them to be used on the use of computer.”

Lack of computerised information system

According to respondent 10, the government of the DRC did not have an information system to ensure the use of ICT-led tools in public funds collection and allocation because the government offices did not use computers for this purpose. In addition, the government was not able to inform the population about the taxes because there was no a system used to share information between the government and the community. Respondent 10 stated that:

“the population does not maintain the use of the computer tool, the non-computerisation of the information system of the government. ”

Lack of communication means

In DRC, especially in rural areas, there was still poor access to information because many areas are not covered with communication means like telephony, access to internet, mobile telephony, radio and television. According to respondent 12, there are many challenges that affect the use of ICT-led tools for funds collection within the community in Kabare territory because there were no communication means that could be used to raise awareness about tax collections like community radio and TVs, mobile phones are not used in some areas and the use of internet is unknown. Respondent 12 stated that:

“In Kabare territory there is lack of communication means as there are no networks in some places and internet does not exist. Also, there is no community radio in Kabare. ”

In addition, respondent 10 also highlighted that the lack of internet is still a problem in the Fizi territory as the majority of the population is not connected to internet and some are using it for social media. Respondent 10 alluded that:

“Lack of Internet also constitutes the obstacles for the use of ICT in revenue mobilisation to the population of FIZI Territory.”

Unwillingness of paying agents

In the DRC, paying agents have influence and impose everything without the involvement of taxpayers in the funds collection process. Therefore, they cannot appreciate the implementation of ICT-led tools like computers or using the mobile apps to collect taxes because they will consider it as an obstacle to their interests.

Lack of electricity

All the corners of the DRC are facing the problems of electricity. Thus, the implementation of ICT-led tools cannot be successful in some areas as the electricity may breakdown every time. Themes pertaining to research question 5 are summarised in the figure 16.

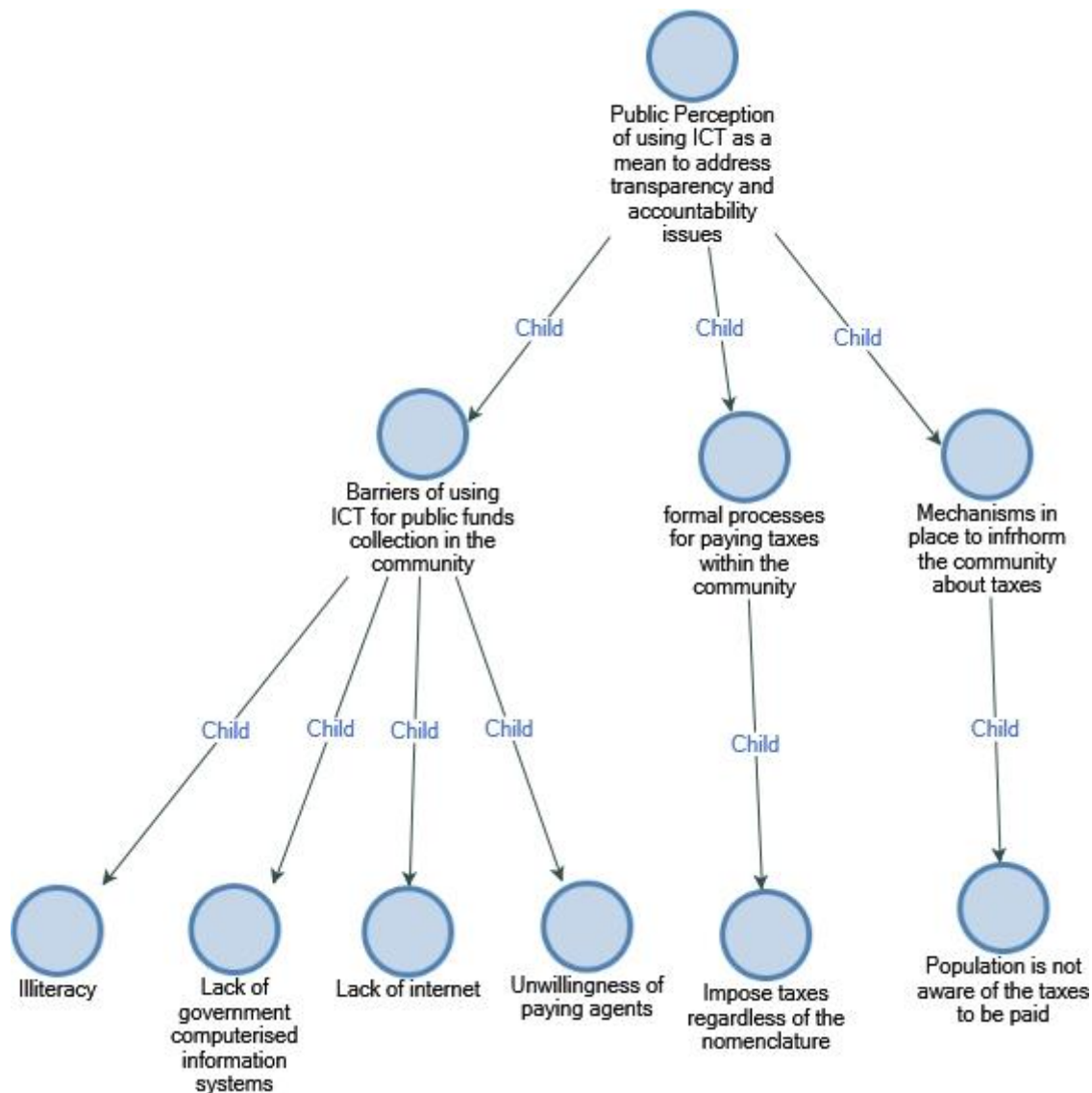


Figure 16: Themes pertaining to Research Question 5

6.4. Summary of Chapter 6

This chapter presented the findings from the data collected in the concerned Ministries and institutions/services through interviews. The findings revealed that ICT was not used as a strategy for funds collection in the National Ministry of Finance in the DRC. In the National Ministry of Budget, there was an application of managing the Budget, which was not used efficiently because it concerns only the national level without any implication at the provincial level. In addition, there was not any policy that address the issue of transparency in public funds management in the National Ministry of Finance and in the National Ministry of Budget, at the national level. Further, there are many problems in implementing ICT for funds collection and allocation in the DRC because there are no sufficient ICT-led tools being used for funds collection and allocation in the DRC. However, some workers presented the wish of a

computerised environment; others believed that ICT would block their own interests. Moreover, the findings reported that ICT-led tools are poorly used in public funds collection and allocation. Computers are used in various ministries and institutions for correspondence and secretarial services. Most of the respondents presented the wish of implementing specific systems. Additionally, there are poor mechanisms to ensure the implementation of ICT in public funds collection and allocation but the respondents mentioned that ICT-led tools perform well in ensuring traceability, helps in timely reports, saves data, supports the clients to appeal, and facilitates services. Though there are barriers that can stifle the effectiveness of ICT in public funds collection and allocation. These barriers include the lack of financial support, lack of management software, poor salaries, ineffective training of workers, maintenance of the computers, lack of electricity, and unwillingness of workers involved in fraud and corruption practices. Besides, the nomenclature, which defines the taxes, was not known with the population and there was no formal process for paying taxes. The population is paying taxes by intimidation from the paying agents. Also, there is lack of mechanisms to inform the population about the taxes. Furthermore, using ICT to ensure the collection of taxes in the community could cause problems. This was due to the low level of education of the community, incapacity of the community in using ICT tools, lack of ICT facilities and unwillingness of the paying agents who cannot appreciate the implementation of ICT-led tools due to their interests because the funds are paid in their own hands, and sometimes without receipts. The findings are further discussed in chapter 7.

CHAPTER 7: DISCUSSION OF FINDINGS

7.1. Introduction

This chapter concerns the discussion of findings presented in Chapter Six. The current state of the use of ICT in public funds management is presented firstly. The findings are discussed and interpreted in line with the research objectives and recommendations are presented.

7.2. Recap of the Research Questions and the Capabilities, Empowerment and Sustainability (CES) Model

This study assessed the role of ICT in enhancing transparency in Public funds collection and allocation in the DRC. It investigated how ICT can be used to disseminate the ethical attitudes of transparency in public funds management. The main research question that leads this study is how ICT can be used to enhance transparency in public funds collection and allocation in the DRC; This question leads to the following sub questions and interview questions with the research objectives that concern each Research questions:

Research Objective 1: To investigate processes in place for public funds collection and allocation

Research question 1: What are the current mechanisms in place to ensure transparency for funds collection and allocation in the DRC?

Research Objective 2: To investigate the use of ICT in public funds collection and allocation

Research question 2: How is ICT used currently to collect and distribute public funds?

Research Objective 3: To identify the challenges related to the implementation of ICT to improve transparency in public funds collection and allocation

Research question 3: What are the challenges related to the implementation of ICT for funds collection and allocation?

Research Question 5: What are public perceptions of using ICT as a mean to address transparency and accountability issues in public funds collection in the DRC?

Research Objective 4: To establish the determinants of ICT for transparency in public funds collection and allocation

Research Question 4: what are the determinants of ICT for transparency in public funds collection and allocation?

Research Objective 5: To develop a suitable framework for the implementation of ICT for public funds collection and allocation

At the end of this study, a framework will be presented to ensure the adoption of ICT in public funds management in the DRC.

7.3. Discussion of the Findings

7.3.1. Research Objective 1: To investigate processes in place for public funds collection and allocation

This research objective is related to the Capabilities construct of the CES Model. The mechanisms in place to ensure transparency in public funds collection and allocation are assessed.

Mechanisms of using ICT in public funds allocation

According to respondent 1, the National Ministry of Budget in the DRC implemented a computerised system, called GES-Depense, for funds allocation, but its application was not successful because it did not cover all the areas of funds allocation at the national and provincial levels. Respondent 1 highlighted that this system is still working at the national level, with many problems as it is based only on the collection of information concerning the national expenses and make the report to the decision makers at the appropriate time. This system did not consider the application of the budget of the year of the government of the DRC because it did not allocate the funds depending on the country budget. Moreover, the government of the DRC, especially the national Ministry of Budget, does not planned to implement the GES-Depense in the 26 Provinces of the DRC to ensure the successful allocation of funds. This would allow the government to monitor the funds allocation process in the different provinces, track the funds allocated, control the allocation of funds, and get the report at the required time. With this aspect, the National Ministry of Budget could raise awareness and promote ethical attitudes to the different budget divisions in the various provinces of the DRC. Further, this system accounted many problems in its use as some workers assume that the system blocks their interests. In addition, the GES-Depense is a Desktop system, which means that the system cannot work online. The manager could not access or get updates about the system if the system is not installed on their personal computers. This causes a gap in the use of the system because they have to be updated anytime and anywhere, and get the appropriate information about the allocation of funds at the required time. There are many advantages of using the online system or a web-based system. According to Arthur (2018) databases software are important in tracking valuable information and help employees to access the data easily. Among these advantages, the web-based systems help in Saving Money because instead of using the software that need to pay for a licence for each computer, the company uses the online database which also avoid the company or organisations investing in servers to store data. The online databases are also flexible because you only need to purchase servers as you want or eliminate them when they are no longer in need and pay if the storage is used. Another advantage is that you can shift the

technical support to the one who is managing it, as there is Infrastructure as a service (IaaS). If there is a technical problem, the company in charge of the management of the database takes care of it. Thus, there is a need, in the National Ministry of Budget, of shifting from the desktop system to a web-based system. Another advantage is the easy access of information anytime, anywhere, once you are connected to the internet, you are able to get access and that improve the productivity (Arthur 2018). The Government of the DRC should ensure that GES-Depense is managing the Budget at the national and provincial levels accordingly. This is realised by designing a version which can work online with a module for every province. Additionally, Workers must be trained and the internet connection must be permanent. The monitoring of the system may pose a problem if the employees are not motivated because they cannot work as required. Sometimes the system may have a problem without a solution in case the ICT Managers are not willing to work because of poor motivation. This may affect the performance of the system because the users will not care about the system. According to Mullins (2016) there are three performance issues that can affect the system: firstly, when the system starts to slow down, the service or production will also run down which may cause a loss. This is the duty of the system administrator or the data manager to analyse the performance of the system and suggest the solution. Secondly, when the system is down, the data performance is affected because the system is running out of the space on the hard disk or other storage devices. Thirdly, the upgrading of the hardware and software. These tasks must be achieved by the system administrators or database managers but if there is poor motivation, they may not work accordingly. Also, the system administrators have the burden of monitoring the system in all its manner by following all the aspects of the system to ensure its performance. Apart from this, the system monitoring should customise alerts and notifications, auto-discovery of the system, automatic update measurements, easy installation and operation, and easy graphical user interface (Wilson 2019). In addition, the Respondent 1 mentioned that there is a Manual of Procedure which is working as a policy to manage the system, but this procedure is not effective because it does not involve the management of the GES-Depense. Hence, the system is running without any policy for its management. Also, there are poor mechanisms to materialise the budget of the year. The government does not consider the use of ICT to inform the community about the budget of the year. The training of the government workers in using ICT tools also pose a problem for the potential use of ICT tools in public funds collection and allocation because when ICT tools were implemented before. The new workers had a problem of using it due to the time it takes to organise the training for them. Sometimes it takes more time without training as mentioned by the respondents 3, 4, 5, 6, 7, 8 and 9 mentioned that some workers are

not able to use the ICT tools thus there was need of training them. Therefore, the Government of the DRC should ensure that the system used for funds allocation responds to the need of the National Ministry of Budget and covers all the provinces, create community centres where the population can get information about the management of the budget and how they can contribute for their wellbeing.

E-Governance for Public Funds Allocation in the DRC

According to Backus (2001), e-governance comprises of the following parties: citizens, government, and business owners. These ideas are based on the tasks that the government is supposed to respond to citizens, business owners and government itself. Thus, the following are the three main groups concerned in the e-governance: Government to Government (G2G), Government to Citizens (G2C), and Government to Business owners (G2B).

Based on the findings of this study, the Government to Government (G2G) concerns the application of ICT in the National Ministry of Budget, in the Provincial Ministry of Budget and how ICT is used between these Ministries. In addition, G2G concerns the National Ministry of Budget and the Provincial Ministry of Budget to the Decentralised Territorial Entities (ETD). This means that the National Ministry of Budget allocates the funds depending on the percentages of each entity in the country budget. The Provincial Ministry of Budget allocates the funds in different entities depending on the country budget. The Government to Business (G2B) concerns the payment of the debts that the government owes to different partners and business owners. In addition, the Government to Citizens (G2C) shows that the citizens must be informed about the budget of the country and know how the funds are located depending on the percentages specified in the budget. The figure 17 shows the interaction between the stakeholders of public funds allocation in the DRC.

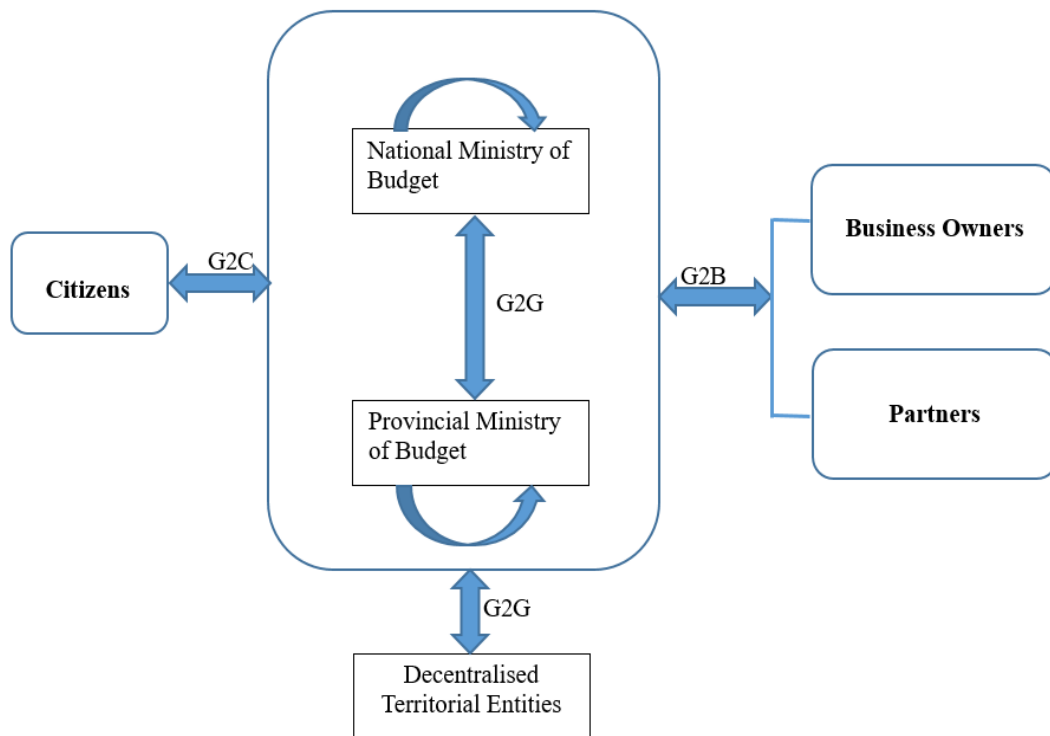


Figure 17: Interaction between the stakeholders for Public funds allocation in the DRC

According to Fath-Allah, Cheikhi et al. (2014), there are various E-government maturity model but most of the stages of these models are somehow related. Based on the findings of this study, the model that can be applied for public funds allocation in the DRC is the World Bank Maturity Model. This model is developed in three stages namely publish, interact, and transact.

Publish: According to the findings of this study, the government of the DRC does not implement any mechanism to inform the citizens about the allocation funds; citizens are not aware of the allocation of funds in country budget. Therefore, the government of the DRC is required to publish the budget of the year in order to inform the citizens about the government activities and how the funds are allocated. The government is required to clearly indicate the percentage of each activity and the percentages of the Decentralised Territorial Entities (ETD). In addition, the citizens must be updated about the allocation of funds at any time. This can be done through the implementation of a website for publishing the information about the allocation of funds, and web based system to ensure that citizens are updated about the allocation process. Additionally, the government should run Radio and TV programs to raise awareness about the allocation of funds to citizens and ensure that Government kiosk and Telecentres are implemented to allow the rural community to be informed about the public funds allocation process. Further, the government should open forums on Social Media to create

interaction between citizens and government authorities. The figure 18 represents the access to information by citizens and partners of the government of the DRC.

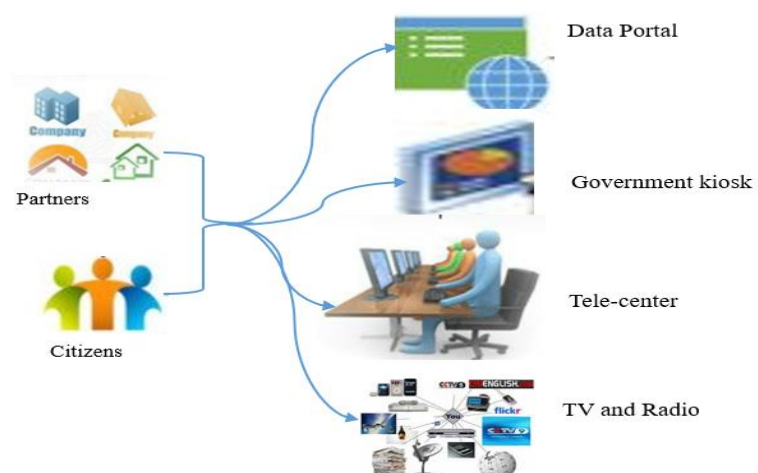


Figure 18: Access to Public Information

Interaction: Findings revealed that there is direct interaction between the government officials and the citizens, and ICT was not applied as a mechanism to respond to this need. Citizens and responsible of the ETDs are required to request information directly to the government officials in charge of budget at the national and/or provincial levels. Therefore, the government of the DRC should ensure that there is an interaction between the citizens and the government officials through emails, social media forum and websites. Using these ICT means, citizens and government officials would be able to share information at the required time and submit the feedback as needed. The figure 19 presents the interaction between the stakeholders in public funds allocations

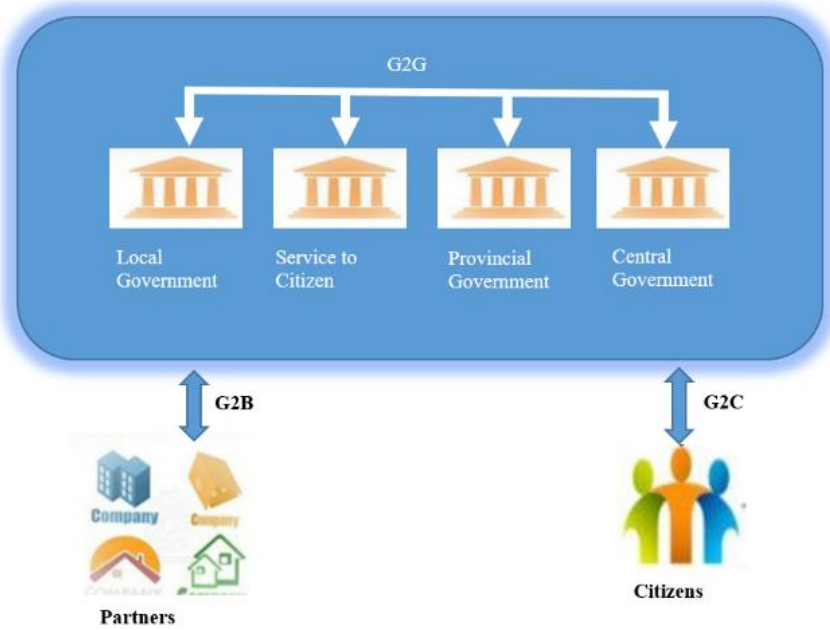


Figure 19: Interaction between the stakeholders in Public funds allocation

Transaction: Findings revealed that the allocation of funds in the DRC was done manually and there was no any secure transaction that could be completed online. Therefore, the government of the DRC should ensure that all the transactions of public funds allocation are done online by respecting the percentages of every entity, as mentioned in the country budget. This would be applied by using a web based system, which is connected directly to the Central Bank of the DRC, and ensure that all the stakeholders have approved the transactions. The figure 20 indicates the E-Governance for Public funds allocation in the DRC.

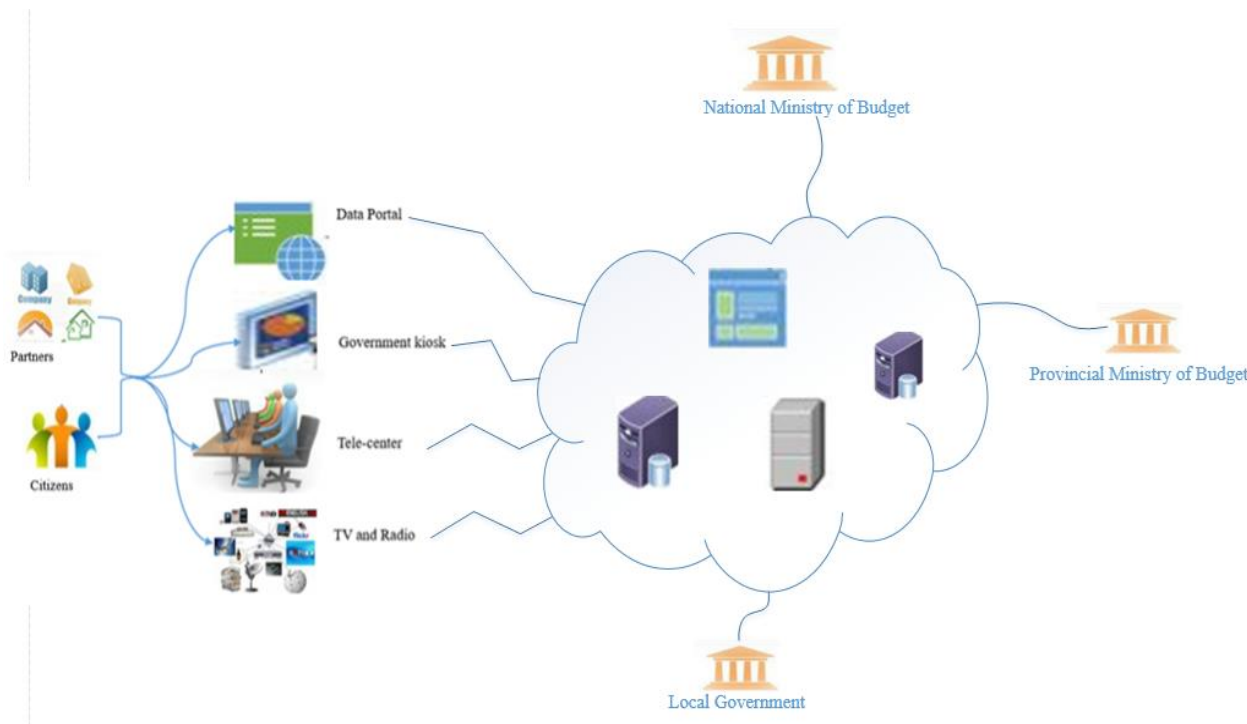


Figure 20: E-Governance for Public funds allocation in the DRC

Mechanisms of using ICT in Public funds collection

According to respondent 2, the mechanisms that are used in the National Ministry of Finance to collect the public funds are still manual and there was direct interaction between the National Ministry of Finances, the Revenue Generating Services and the Economic Operators. Respondent 2 stated that the National Ministry of Finance, in the DRC, maintains the legal and regulatory texts governing the methods of payment of debts to the state. This assumption relies on the fact that the government manages the funds depending on the budget of the year, voted by the members of the parliament, approved and proclaimed by the President of the Republic of DRC. In addition, there are decrees made by the Ministry of Finance at the national level, to ensure funds collection. Moreover, in the Government of the DRC, different Ministers can sign the same decree to ensure the collection of funds. This is due to the use of different offices and agencies to collect different taxes. For example, DGI (General Directorate of Taxes) which is responsible for collecting all the taxes, the DGRAD (General Directorate of Administrative, Judicial, National and Participatory Income), responsible for collecting administrative, judicial and other taxes and fees, the DGDA (Directorate of General of Customer and Excise) which is in charge of collecting the customs duties, excise duties and receiving import and export taxes on behalf of other financial authorities. These offices and agencies collect different taxes from the service under the management of varying Ministers. For example the Inter-ministerial Order 3134/CAB.MIN/MINES/01/2007 and 031/CAB.MIN/FINANCES/2007 of 09 August 2007,

fixing the rate of taxes and royalties to be levied on the initiative of the Minister of Mines, Inter-ministerial Order No. 098 and No. 067 of 31 October 2017 fixes the rates of duty, taxes and charges to be levied on the initiative of the Ministry of Justice. The Interministerial Order No. 002/CAB/MIN/ECN-DD/SA/00/2017 and No. 038 CAB/MIN/FINANCES/2017/038 of 10 August 2017 establishes the rates of duty, taxes and charges for installation classified in the category to be collected on the initiative of the Ministry of Environment and Sustainable Development. All these orders are initiated with other ministries, but the funds are collected by the concerned services under the National Ministry of Finance. However, these Legal and Regulatory Acts are not known to the population and there are no efforts, in place, to ensure the communication of these Acts to the community. In addition, the government of the DRC is not willing to raise awareness about these legal and regulatory issues, which leads to mistreatment of the population during the collection of taxes. This is because the paying agents impose the taxes without considering the Legal and Regulatory Acts that define the taxes and how it would be collected. Thus, ICT can be used in many ways to support these Legal and Regulatory Acts; by using the SMS based system (Mobile Phone), web based systems, TV and Radio, and social media the community can be aware of the Legal and Regulatory Acts and pay the taxes, as stated by Chene (2012) and Jackson (2018). Also, ICT can materialise what is mentioned in these Acts by designing systems that take into consideration the requirements from the Legal and Regulatory Acts. In addition, respondent 2 mentioned that the National Ministry of Finance is doing Sensitisation of the Economic Operators and the Revenue Generating Services as another strategy to collect funds in the DRC. The Sensitisation is done at two levels. The first level concerns the Economic Operators with the objectives of harmonising the problems related to the payment of taxes. In each country, the payment of taxes is a civic duty. This duty precedes the right of the citizen to request the governors of public services and accounts for the use of revenues of the Country. Taxes are the main sources of revenue for every country as through them the citizens contribute to the development of the country. The fund from taxes are allocated in the form of strengthening national institutions, public services, and development of the country. However, in the DRC a large number of the citizens do not fulfil this civic duty, mainly because of the mismanagement. This is the reason why many efforts are put in place to sensitise the Economic operators for the payment of taxes. Therefore, the Government of the DRC should consider this programme of awareness and implement Radio and Television tools for its success. A website can be implemented to inform the economic operators about all the government programmes and on how the funds would be raised. In addition, the government can put in place a radio programme specifically for taxes or create social media pages and

website to share with the economic operators and the citizens about the related taxes. Thus, the government of the DRC should put in place an online platform specifically for raising awareness for the payment of taxes and ensure that it is well updated. Moreover, it is important to sensitise the Revenue Generating Services on their role in the development of the country because taxes are among the gears of wellbeing.

According to respondent 10, the nomenclature that specified the taxes is not known by the population, and the taxes are paid depending on the willingness of the paying agents. This is the reason why some paying agents cost much money to taxpayers without depending on the nomenclature; others are involved in corruption and misappropriation of the public funds. The National Ministry of finance is concerned with the sensitisation of the Revenue Generating Services to strengthen partnership with the economic operators, to communicate about the changes of the tax legislation and to meet the concerns of the economic operators. However, ICT can respond to simplify this huge task by implementing systems that allow communication between the taxpayers and the Revenue Generating Services. A system can be implemented in every Revenue Generating Service whereby taxpayer is requested to provide a telephone number where a message can be sent in case of any change or updates. The Ministry can create an online forum where it would be possible to communicate with the taxpayers in case of a problem. In addition, the taxpayers, the revenue generating services, and the ministry board would have access to the system, share problems and solutions. In addition, a call center could be implemented to the ministry where the taxpayers could get information about a tax or in case of misunderstanding with the paying agent. Respondent 2 also mentioned that the National Ministry of Finances ensures that there is good collaboration with the economic operators, this is another strategy for funds collection in the DRC. This collaboration is done by sharing the different decisions, orders, and decrees with the economic operators at the required time. The Economic Operators, represented in the DRC by the Federation of the Congolese Enterprises, FEC (Federation des Entreprises du Congo) are also able to present their problems to the National Ministry of Finances without any payment. However, the only ICT mean that could be used to ensure this collaboration is by calling each other, which opens the gate to corruption because there is direct interaction between the Economic Operators and the Paying agents. While ICT could be used to create this collaboration by using online platform or SMS based system that block the direct interaction. The decrees and orders could be published on a website and if there is an issue that the FEC wants to present to the National Ministry of Finance, a forum can be implemented to ensure the successful implementation of ICT in enhancing

collaboration between the Ministry and the FEC. The last strategy that was presented by the respondent 2, from the National Ministry of Finances, is the training of workers, Managers and Agents. The training of the managers is done at the High School of Finance (Ecole National des Finances) in the DRC; in different field including Computer skills. It was also highlighted that ICT as a key to service delivery, is considered not only to promote economic growth but also to enhance good governance in South Africa (Chene 2012). The use of ICT can improve the service delivery and support the government activities at any instance. ICT is used for sensitisation of the Economic Operators and Revenue Generating by organising the campaigns on the social media or using other media like radio and television. According to Nogara (2009), ICT is most important to improve transparency in service delivery because it allows the citizens to express their voice in the process of decision making and allows access to public information. Hence, using ICT for raising awareness of the Economic Operators could be most important and cost-effective than using the actual manual system used in the National Ministry of Finance. Also, using the Sensitisation of Economic Operators and Revenue generating Services as a mechanism for funds collection is not seen really as a convicting mechanism because the concerned persons may be sensitised without applying the skills, but with the use of ICT, once a system is implemented, every person must use it as long as it relates to the required services. In addition, the sensitisation is limited to some persons who may be selected to attending the sensitisation session and a certain number may apply what was said, but with a computerised system all the stakeholders would be involved from the Ministry, Tax authority, paying agents and the taxpayers. Thus, the sensitisation as a mechanism of the economic operators must be followed with the use of computerised system, Radio and Television programs, and social media forum to ensure its success. According to Chêne (2010), the DRC is struggling with corruption at all the levels. Hence, Legal and Regulatory Acts are not applied practically as tools or mechanisms to fighting corruption, because corruption is still affecting the funds collection process despite its existence. Therefore, the government of the DRC should ensure the implementation of E-Governance and open the online collaboration.

Thus, combining the Legal and Regulatory Acts with E-Governance initiative may overcome the gaps that exist in enhancing transparency in funds collection and allocation because E-Governance would be applied to every person at all levels, despite his position. Concerning collaboration with the Economic Operators, in a state where corruption affects all the layers, there is no hope that keeping a good collaboration could be most important in curbing corruption, but could improve the strategy of corruption. The government should enhance this

collaboration by implementing E-Governance initiative to ensure the collaboration between the government authorities and the economic operators without direct interaction to avoid the corruption practices. According to Kodama (2013), collaborations and communication are mainly maintained with three factors, including the ICT systems, Office space, and the organisational structure. Therefore, the use of E-Governance initiative is most important in ensuring collaboration and hindering the direct interaction between the Tax authority and the economic operators. The training of workers is another strategy used for funds collection and allocation in the National Ministry of Finance. This could not be considered as a strategy that could highly contribute to the eradication of corruption in public funds collection. This is because they are trained on how to collect funds from the public without any specific mechanism to eradicate corruption. Also, the training in the use of ICT is basically limited to the Microsoft Office Word and Excel as mentioned by respondents 3, 4, 5, 6, 7, 8 and 9, that they use only Microsoft Word and Excel in their offices, with the internet browsers installed on some computers. The workers should be trained in the specific software that may help to efficiently use ICT for funds collection. The E-Governance initiative must include all the system related to the collection of funds and tax administration like Tax management system, Taxpayers identification system, vehicle registration system, and other related systems concerned with funds collection. The E-Governance Initiative should also consider the management of other entities under the government of the DRC. According to Chene (2012), from Transparency International, E-Governance is applied in many countries as a mechanism for fighting corruption and promote service delivery, because all government services are automated and promote open government data. This limit the direct interaction between taxpayers and paying agents, things which could not be possible if the government does not think of the integration of the policies with ICT.

E-Governance for Public Funds Collection in the DRC

Based on this study, the interaction between government to government (G2G) in public funds collection in the DRC concerns the National Ministry of Finance, the Provincial Ministry of Finance and the state owned Revenue Generating Services. The government should also collect different taxes to citizen, G2C; and to business owners, G2B. Thus, the government of the DRC should ensure that all these three parties are connected using a web based system and the process of collecting taxes is done as needed. This include the provision of information and raising awareness to taxpayers, encourage the paying agents to facilitate the effectiveness and efficiency of public interaction between the three parties, and speedy transactions in public

funds collection. In addition, there is a need of informing the citizens in urban and rural areas about the nomenclatures that define different taxes, that why an Open Data Portal is the most important component to inform the citizens and the business owners about the taxes. The figure 21 indicates the interaction between the three parties of e-governance in public funds collection in the DRC:

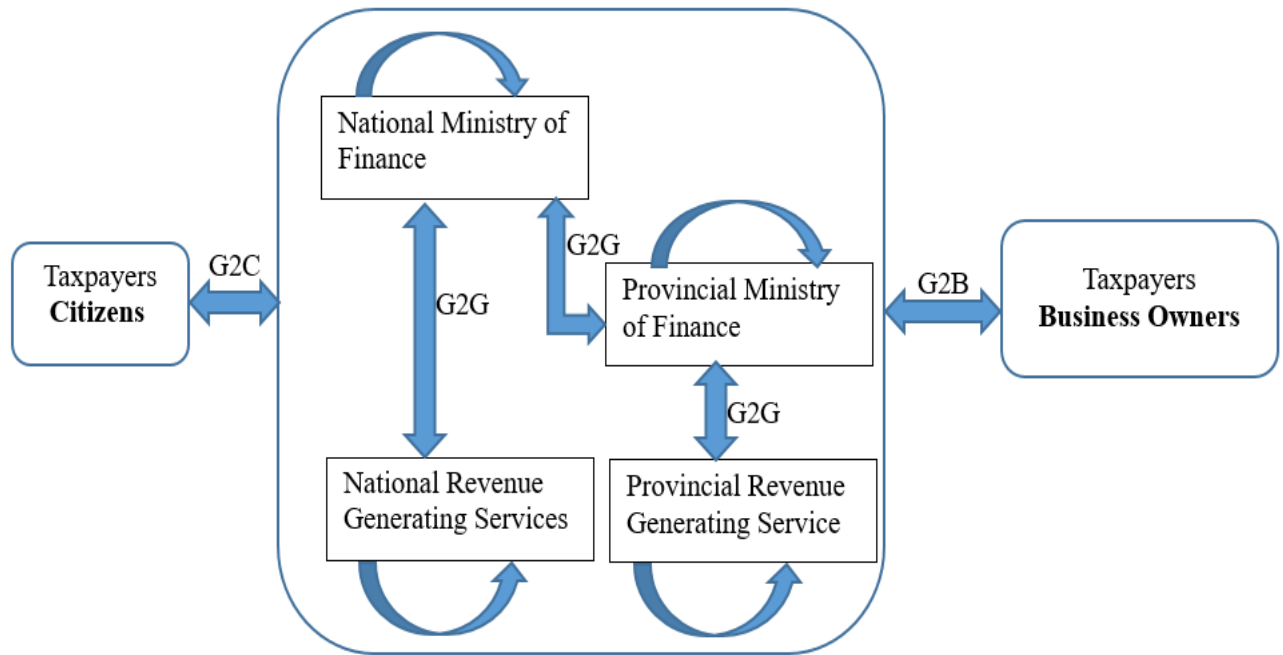


Figure 21: Interaction between the three parties of E-governance for public funds allocation in the DRC

Based on the findings of this study, the E-governance maturity model that could better work for public funds collection in the DRC is the Alhomod Maturity Model. However, according to Fath-Allah, Cheikhi et al. (2014), this maturity model comprises the following phases: presence of the web, integration between the government and the citizens, complete transaction over the web, and integration of services

Presence of the Web: According to the findings, the government of the DRC did not have any website where the citizens and business owners could access information about different taxes that they are supposed to pay and be updated about their payment status. This led to the payment of taxes that were not defined in the nomenclature. Therefore, in the DRC, there is a need of implementing a website where the following information are published: the nomenclature that defines the taxes, rules, regulations, forms, different documents that could be accessed by the citizens, and government plans. This information have to be updated at the required time to

ensure that citizens have access to the useful information. In addition, the government of the DRC should implement government kiosks and Tele-centres in the rural areas to ensure that all the citizens of the DRC are informed and involved in the taxation process. The figure 22 presents how information should be accessed by users.

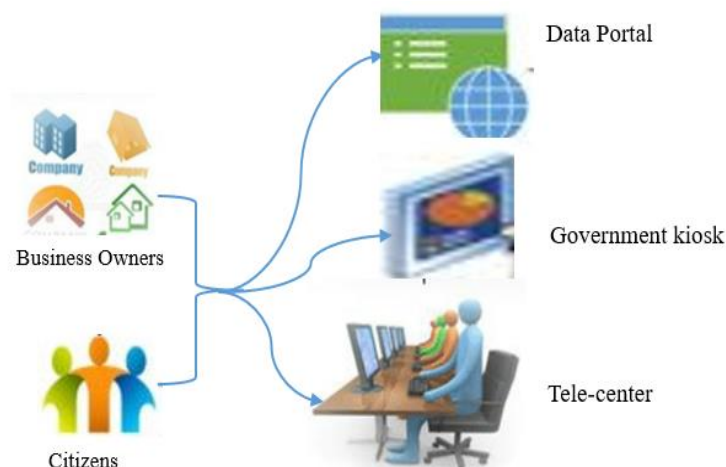


Figure 22: Access to public information

Interaction between the government and citizens: According to the findings of this study, there was no mechanism to ensure interaction between the government and the citizens. The government imposes taxes without informing the citizens and sometimes citizens are subjected to pay taxes that were not defined in the nomenclature. In addition, the taxpayers (citizens and business owners) are not able to communicate, using ICT means, to the paying agents or downloading and filling forms online. Thus, the implementation of a web-based system that would allow the citizens and business owners to interact with the paying agents and/or government officials is highly needed. This importantly would reduce direct interaction which leads to corruption. The figure 23 presents the interaction between the government and taxpayers:

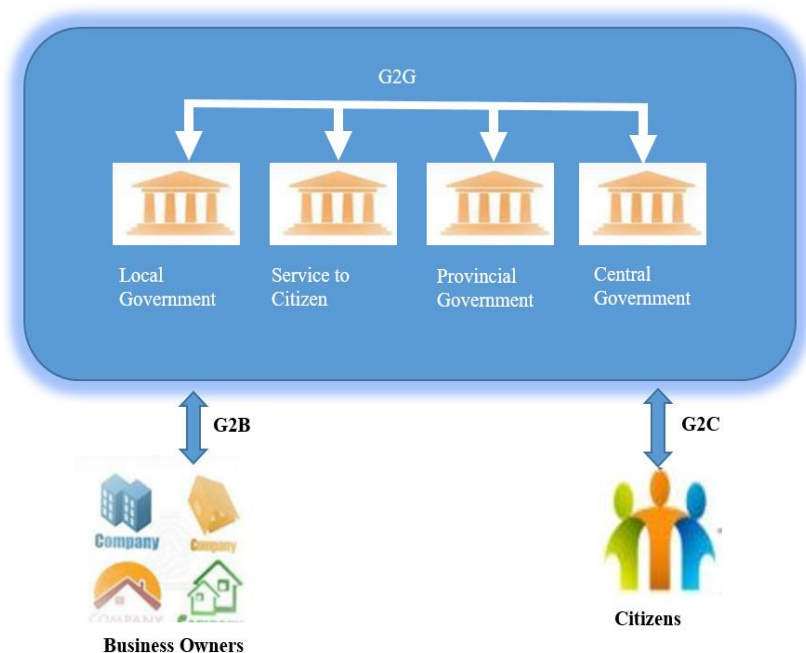


Figure 23: Interaction between the stakeholders of Public funds collection

Complete transaction over the web: Findings revealed that the process of public funds collection in the DRC was still done manually, sometimes in the hands of the paying agents without providing receipts. In addition, the government of DRC did not implement any web-based system to complete all the process of tax payment online as taxpayers are obliged to present themselves to the concerned office. This manual system takes much time and opens gates to corruption in the public funds collection process. Therefore, the government of the DRC should ensure that all the services concerned with funds collection are implemented within web-based systems. A system that allow taxpayers to declare their assets online, be informed about the amount that is supposed to be paid and make online transactions.

Integration of Services: In the DRC, at the national level, there are three major services concerned with public funds collection namely DGDA, DGI and DGRAD. All these services are under the management of the National Ministry of Finance. At the provincial level, every province has its own service that collects the provincial government taxes. However, despite the similarities in handling tasks and the management of these services, the government of DRC did not ensure their integration because every service is managed on its own and funds are collected in different ways, which create a burden to taxpayers. In addition, findings revealed that, there is no specific system used to collect public funds in the DRC and the National Ministry of Finance does not have any system that ensured management of the specified services. Therefore, the government of DRC should ensure the implementation of the Tax

Management System (web based system) for the collection of funds, share information at the required time, and connect these services with the National Ministry of Finance. This would help the National Ministry of Finance to manage successfully the funds collected. The figure 24 depicts the use of E-Governance for Public funds collection in the DRC.



Figure 24: E-Governance for Public funds collection in the DRC

7.3.2. Research Objective 2: To investigate the use of ICT in public funds collection and allocation

The use of ICT in funds collection and allocation relates to the Empowerment construct of the Capabilities, Empowerment and Sustainability, CES Model. ICT can be used in many ways to curb corruption and many tools are put in place to ensure its application.

ICT tools being used for public funds allocation in the DRC

In the DRC, access to information is still slow because the government did not implement any system to ensure access to government information. The government of the DRC has provided some computers in the different offices, but they use only MS Word and MS Excel for the secretarial services. According to respondent 3, the only ICT tools being used for public funds allocation, in the South Kivu province, are the computers, printers, internet connection and MS office Word and Excel and internet browser software. These ICT tools were not used to monitor or track the budget of the province or used for any purpose related to the management of public funds but are used for simple communication and secretarial service only. In addition, the

budget is executed using the manual system which opens the gate to corruption. There is no specific software applied by the government of the DRC to manage the Budget at the provincial level. The citizens in the DRC, are not informed about the budget execution, and government data are not open to citizens, while ICT is used in other countries as a tool to spread government information to citizens monitor and track budget execution. In the Republic of Kenya, for example, since 2011, the government adopted the use of Open Data Portal as a strategy to enhance transparency and to ensure the innovation and efficiency of the government services. ICT is also useful in some countries to track the budget; in Kenya, the government implemented a Budget transparency reforms to track the budget using a budget tracking tool which was implemented by the civil society to track the execution of the budget. Also, in Korea, the government adopted an e-People portal to inform the citizen about the execution of the budget (Amelina 2011). Compared to how ICT is currently used for tracking the budget, in the DRC, a country characterised with corruption, there is still hope that the implementation of ICT in public funds allocation would enhance transparency and accountability in the execution of budget. According to respondent 3, the actual plan for the Provincial Ministry of Budget in South Kivu in the DRC, is to implement a management application that would work to track the budget and automate the expenditure. As mentioned above, in the DRC, the budget is still executed manually and there was not any system that allowed to adapt the expenditure budget to the revenue budget as the ministry was not informed about the funds collected and there was no system which connect the Provincial Ministry of Budget and the Provincial Ministry of Finance. However, this plan is still not executed and there is not specific date to start it. Additionally, respondent 3 mentioned that the management of the budget in terms of the allocation of funds is done without considering the implication of the citizens in the budget execution. Concerning the automation of the budget expenditure with the revenue budget, the idea is to correlate the funds allocated to the percentage in the Budget of expenditure. But in this process, the participation of the citizen is not considered, and they are not informed about the budget. Thus, the government should ensure the implementation of an Open Government Data portal to allow the access of information to citizen by implementing ICT tools that respond to the concerned problem. Further, the government should ensure that citizens are well informed about the use of the Open Government Data Portal and consider their contributions for transparency in the budget execution. Additionally, the government should ensure the implementation of a system to monitor, track, control the budget and put that information available or accessible to every citizen. This could be done using specific software, a web-based system, Mobile phones, social media, Radio and Television and other ICT tools that could be

applied to ensure transparency in public funds allocation.

ICT tools being used for public funds collection in the DRC

According to respondent 4, the ICT tools being used for funds collection in the DRC are computers, internet connection, tablets, and Microsoft Office Word and Excel. The Provincial Ministry of Finance, in the South Kivu province did not implement any specific application that could be used to ensure the collection of funds and how the funds collected could be managed. There are many advantages in using ICT for funds collection. Firstly, funds are collected at a lower cost due to the use of the technology because every taxpayer can pay the taxes anywhere, at the required time. According to Githinji, Mwaniki et al. (2014), ICT is used for revenue mobilisation to improve the government actions in the developing countries. The government uses mobile technologies to collect taxes by mobile transfer, which has made the Republic of Kenya to be considered as an African IT Hub (Githinji, Mwaniki et al. 2014). Moreover, the mobile technologies are used to facilitate transactions with the banks and pay taxes, using mobile money. In addition, mobile technologies are used to pay water and electricity bills, for insurance and social security funds, and to facilitate other payments like booking a flight and buying airtime from your bank account (Githinji, Mwaniki et al. 2014). However, the government of the DRC is still using manual system for tax collection. All the taxes collected are paid directly to the concerned services, and sometimes in the own hands of paying agents, as mentioned by respondents 10, 11 and 12. According to respondents 7 and 8, some taxes are paid to the bank account of the concerned services and the taxpayers submit the bank slip to the tax authority, who registers the payment; this is done specifically by making a deposit to the Bank Account of the concerned services like DGRAD, DGI, and DPMER. At the local level, payment is done into the own hands of the paying agents. The paying agent provides the receipt to prove that the payment was done, and sometimes the funds are collected without any receipts, according to respondents 10, 11 and 12, and the provision of the receipt depends on the paying agents. Thus, the taxpayers are not sure if the funds collected would be deposited into the public treasury account. Mobile money services are operational with all the network operators in the DRC, but they are limited to the transaction of sending and receiving money, without considering the fact that mobile money can be used for funds collection. Also, there is another problem related to the identification of the new and existing taxpayers; according to respondents 4, 8 and 9, tablets and smart phones will be used to collect the information of the taxpayers in the South Kivu province but they have not mentioned if there is a specific software that will be used to accomplish this task, and in their plans they have not specified if there is a mobile app which will be implemented to identify the taxpayers.

The use of ICT in public funds collection is beneficial to the government and the taxpayers because it improves the planning of the government activities, the implementation of such activities, and the monitoring and evaluation. Also, it helps the taxpayers to pay the taxes online, using a specific application which makes the process very easy and faster. Thus, using in ICT in public funds collection will provide the most important strategies that may increase the revenue and implement transparency measures in funds collection. Respondent 4 mentioned that the plan of the provincial Ministry of Finance, in the South Kivu province, is to acquire an appropriate software for the automation of the taxes and for the establishment of a reliable directory of taxpayers to property taxes and rental income taxes. Considering this plan, the ministry must make sure that this system facilitates the taxpayers, the taxation authority, and the government. For the taxpayers, the system should facilitate the access to information and ensure the easy payment of taxes, which could be realised using a mobile money or e-banking. Therefore, the implementation of this system would improve the collection of funds by paying the taxes online, get easier and faster access to information. The system should also consider the payment using the mobile transactions and internet banking to allow the easy payment of the taxes. The implementation of this system has a positive impact on the taxpayers because they would be able to access information at the required time, manage their records, and make payment at the required time. Concerning the taxation authority, the system helps to keep the records of the taxpayers, easy processing of the taxpayers' information, capitalise the collection of funds using the e-payment, get updates about the taxations made and the updates of the bank account. In addition, the use of e-payment and e-service would allow the taxation authority to make timely reports and ensure the monitoring of taxpayers. The government would also gain the advantage of maintaining the income budget and ensuring the planning, implementation, monitoring and evaluation of the activities, as specified in the budget of expenditure.

According to respondents 5, the only ICT tools that are being used at the division of payment in DGRAD are the computer with Microsoft Office installed, and a printer; respondent 6 highlighted that the tools being used in DGRAD are the computer with MS Office, and a printer. These computers are just used for secretarial purposes as confirmed by respondents 5 and 6. This concluded that in DGRAD, the collection of funds was done manually, using the paper-based system. According to Chatama (2013), the ICT infrastructure is important in computerising the funds collection system and hence, enable the communication with the taxpayers, facilitate the payment of taxes and get updates from the bank. However, the effective use of ICT in tax collection and administration is needed as issues in managing taxation information are increasing, due to paper-based information.

According to respondents 5 and 6, the plan is to implement a management system that would be able to capture, store, control, schedule and authorise the taxpayers. These systems can be powerful if they capture all the information regarding the taxpayers, allow the online payment of taxes, inform the division in charge of collecting taxes to monitor the taxpayers and be informed about the taxes paid. This system could also ensure the communication between DGRAD and the bank to get the updates of all the transaction as some payments could be done using mobile transactions and facilitate communication between the taxpayers and the government authorities. The use of the computerised taxation system is an effective and efficient measure against corruption, monitoring of taxpayers and contributes to an increase in the government income. This system should also consider online payment, filing, creating a self-help portal for the taxpayers and data matching. In order to ensure the implementation of this system, the DGRAD has to put in place the ICT infrastructure that responds to the requirements of the system as highlighted by Chatama (2013), that the accessibility of ICT facilities enabled the Tanzania Revenue Authority to implement the Integrated Tax Administration System (iTax). Githinji, Mwaniki et al. (2014), showed that tax collection authorities in Kenya had the advantage of using the mobile money services for collecting taxes, and the services are offered with all the operators in Kenya. Using this initiative, DGRAD should consider the integration of mobile money services in the funds collection. Thus, the system should consider the following functionalities to respond to the administration of taxes at DGRAD. The registration of the taxpayers and their activities; this would be achieved by creating the taxpayer's account on the system with the information relating to his identity and the family history and processing the account of the taxpayers to be informed about the financial relation between the tax payers and the paying agents. The system should also consider the taxpayers self-service portal to help the taxpayers to access their accounts, make any update and fulfil the legal requirements. During the payment, taxpayers and DGRAD would be updated about the payment. Additionally, the system should remind the tax authority about the penalties, refunds and send the notification to the taxpayers about that status. Concerning the declaration, the system should also consider the return process to make sure whether the return is a substitute or a duplicate and control the consistence of the presented information. The system should also ensure the authentication of the users at every transaction for the security purposes, and the encryption of the confidential information. It should also consider the management of some cases e.g. to appeal and enforce the funds collection to make sure that the taxpayers can respond to these cases and the tax authority will respond using the system.

According to respondent 7, the only ICT tools being used in DGI for funds collection are

computers, printers and some specific software, using the Microsoft Office Access 2007 designed a system in the Visual Basic for Application 2.0. The respondent 7 mentioned that DGI uses Gestion des Impôts (Tax Management) to manage the taxes, Taxpayer Directory Management System, to identify the taxpayers, and Vehicle Management System to identify the vehicles and provide the number plates. In addition, Microsoft Word and Excel are also used for secretarial services. However, Microsoft Access is considered as the weakest database management system because it cannot support a large number of users like Oracle or Sql Server, where many users can be supported on different devices. Microsoft Access works well by a single user with his own connection on the same computer. Oracle supports large databases, with Terabytes, while Microsoft Access cannot exceed two (2) Gigabytes which limits its performance compared to how data is managed by other tax authorities. The systems are not used efficiently because of their performance. This allowed users to depend only on the computer division. Users in other departments collect data manually and submit the paper-based data to the computer division for treatment. This causes a delay in data processing and reporting. In addition, a System for managing taxes, Gestion des Impôts, did not allow the users to make online transaction. Taxpayers deposit money to the bank account of DGI and provide the bank slip to the office of DGI to register the taxes and to clear their debt. This process is time consuming and it is only done at the provincial level because the system is a Desktop system. In the Synthetic Center of Taxes (Centres Synthétiques des Impôts), at the local level, payment of taxes is done into the own hands of the paying agents and that opens the gates to corruption, because sometimes the taxes are collected without a receipt to confirm the payment. Additionally, Gestion des Impôts did not make a timely report to the management because they did not have access all the times; access was provided when they went to the computer division for control. In addition, with this system, taxpayers could not have access to their information or got an update about their status at DGI; security measures are very poor, because the data was managed without a backup, and there are poor security measures. According to Cotton and Dark (2017), the system that processes the management of taxes should capture the identification number of the taxpayers, the amount paid, and the period of the payment. It should update the account number of taxpayers and the account number of the government authority, and interface automatically with the bank or other online payment method or system. The system should also process payments that was dishonoured with the taxpayers, make timely reports, statistics of payments and present the activities of the account number. In some cases allowed an audit, as attested by Cotton and Dark (2017).

In addition, the Taxpayer Directory Management System, is a system to register the taxpayers,

but it is a desktop system and does not allow the taxpayers to access their information. The tax authority uses it for the purpose of registering taxpayers, but it is not successful because it does not share that information or make a report to the concerned person at the required time. The Taxpayer Directory Management System should ensure that every taxpayer has a national identification number and provide a licence for business activities; capture and store registration details for all types of the taxes, maintain a check digit and internal reference for the validity of the identification number, make sure that the system is able to restore the taxpayers information, and relate the registration system with other systems. The Vehicle Management System presents the same weaknesses because it does not allow the follow up of the vehicle information and the taxpayers cannot register the vehicle online, and do not have access to their vehicles information. Therefore, the actual plan for DGI is to migrate from Microsoft Access 2007 to Oracle or SQL Server, and upgrade the Taxpayer Directory Management System to an online system; deploying the management information systems at the Synthetic Tax Centers, and upgrade the network facilities. Thus, the following steps must be considered when designing or upgrading the system for DGI. Firstly, the registration of the taxpayers and their activities, this would be achieved by creating the taxpayer's account on the system with the information related to his identification. Secondly, the system should also consider the taxpayers self-service portal to help the taxpayers to access their accounts, make any update and fulfil the legal requirements. During the payment, the account of the taxpayers would be updated and DGI would be directly informed about the payment. Thirdly, the system should remind the tax authority about the penalties, refunds and send the notification to taxpayers. Fourthly, concerning the declaration, the system should also consider the return process to make sure whether the return is a substitute or a duplicate and control the consistence of the presented information. Fifthly, the system should also ensure the authentication of the users at every transaction for the security purposes and the encryption of the confidential information. The system should also allow to appeal and get the feedback from the tax authorities.

Respondents 8 and 9 mentioned that the ICT tools being used for tax collection and administration at DPMER are computers, Printer, Scanner, LAN, specific software (IMPOSIA), and Microsoft Office Word and Excel. However, the specific software mentioned was not working properly and does not respond to the requirements. IMPOSIA was designed and implemented but was not successfully used because it presented flows that were not supported with the service of DPMER. The actual plan of DPMER was to integrate the phone and tablets into the funds collection process and the acquisition of a software that respond to the requirements of a tax authority. Respondent 9 attested that this system could capture and store

data and inform the taxpayers about their situation with DPMER. It could directly connect to the bank to get an update about the taxpayers' transactions, connect with the division in charge of scheduling, control, and authorisation and inform the division of payment about the taxpayers that have delayed in paying the taxes.

Layers of the use of ICT for Public Funds Collection and Allocation

According to Behara, Varre et al. (2009), the various layers of E-Governance are namely Client layer, Presentation layer, Channel delivery layer, Security layer, Infrastructure service layer, Business layer, Management and Monitoring layer, Data layer, and Integration layer. However, the use of ICT tools used for service delivery depend on each layer. Based on this study, ICT tools to be used for public funds collection and allocation in the DRC are classified depending on these layers and are applied depending on the needs of every service.

Client layer: the stakeholders of the Public funds collection and allocation process. In the public funds collection, stakeholders are the citizens, government authorities, and business owners; while in the public funds allocation, stakeholders are the citizens, government authorities and the partners of the government of the DRC. In this layer constitutes web client where stakeholders can access or send information or service through http or https protocol. Therefore, there was need of a government of the DRC to ensure the implementation of a web based system where citizens and other stakeholders would be able to access the government information and pay taxes online. In addition, the government should also ensure that the stakeholders are able to fill online forms and interact with the government authorities, using a web-based system. Thus, the government of the DRC should ensure that all the services and Ministries concerned with public funds collection and allocation are powered with online systems. Thus, the citizens can make payment and access information anytime and anywhere.

Presentation Layer: this layer conducts the request to the concerned service in the system. It manage the users and personalise the features. All the system users access the system using the user name and the password. The information is displayed and accessed on a web based system. In addition, the public information is accessed with all the users while the protected information is accessed by logged in using the username and password of the specified user.

Channel Delivery Layer: this layer contains the secured gateways, like SMS gateway, SMTP gateway, XML gateway and Web gateway, which handle transactions across the network. The government of the DRC must make sure that transactions are secured and nobody can hack it.

Security Layer: The government of the DRC should ensure that the secure proxy server captures all the request of information for the security purpose. It should make sure that all users are registered and access the system using the username and password. This will make

sure that there is integrity, confidentiality and authentication.

Business Layer: the government of the DRC should ensure the processes of public funds collection and allocation are achieved using the web based systems and services are provided to stakeholders as required. Therefore, the concerned services and ministries can chose to use either their own web based systems or use the cloud computing like Software as a Service (SaaS), Infrastructure as a Service (IaaS), and Platform as a Service (PaaS). The government should ensure that systems are working as needed and ensure the appreciation of the stakeholders. The systems should contain modules where citizens and other stakeholders are able to access the required information and interact with the government officials. In addition, these systems should ensure online transactions. Systems should provide a user friendly interface for the stakeholders like citizens to register, access government services, update their contact information, and make online transactions. In addition, the systems should capture data, address the application submission, track and verify data, and ensure the availability of information and services. Additionally, the systems the search engine, as a component for users to search or access information should be provided. Further, users should be notified via alerts after every transaction. This notification alerts may be supplied using SMS services or email.

Data Layer: The government of the DRC has to implement a data server application that uses the Relational Database Management System (RDBMS) to store the structures data and ensure that information is stored in document repository. In addition, the National Ministry of Finance and the National Ministry of Budget should implement a directory server for the public funds collection and allocation.

Infrastructure Layer: this layer contains systems infrastructures, policy infrastructures, technical infrastructures, backups and infrastructures management. The government of the DRC should make sure that infrastructures are well installed and well managed. In addition, computers must be of great capacity to support the systems.

To ensure the management of this infrastructures, policies should be implemented with the management of the computer infrastructures and ensure that human resources are well trained in using ICT. The training of workers is most important to manage infrastructures and ensure its use. In addition, the backup's infrastructures must be implemented and managed under the Centre Informatique Interministeriel (CII), a service in charge of ICT in the National Ministry of Finance and the National Ministry of Budget. Hybrid Cloud backup is the best solution to backing up data in a secure offsite data centre on a local device.

In addition, the government can chose to use the cloud computing infrastructures of e-governance, for data management at the third party. This includes the use of Infrastructure as a

Service (IaaS), Software as a Service (SaaS) and Platform as a Service (PaaS). The figure 25 presents ICT Infrastructures to be used for tax collection and allocation.

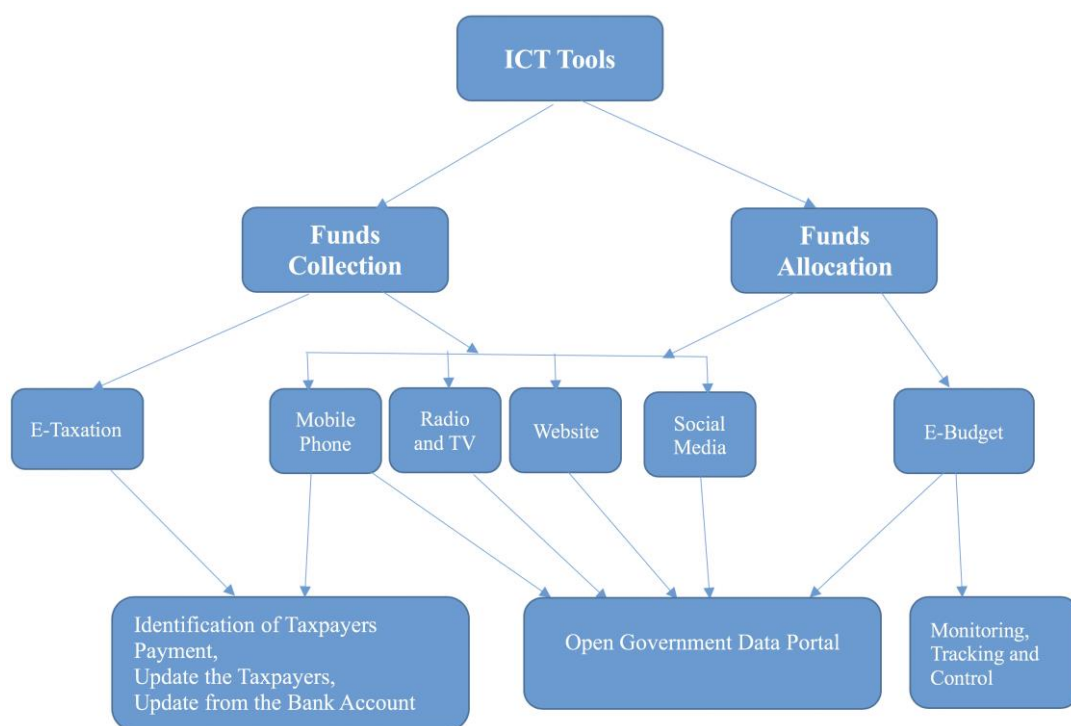


Figure 25: ICT Infrastructures to be used for tax collection and allocation

Integration Layer: Integration strategy in e-governance is very critical as most of the departments might have built their own application and run in silo form. These departments need to be integrated to the E-Governance Portal to achieve better citizen service. The E-Governance Portal works as a single source of information for all government content, and provides front end or start point for all the government services provided by the various government departments. The functionality of departmental applications and services provided by the departments is made accessible on E-Governance Portal as services using web services technologies. Web service based implementation of transactional government services will make them reusable, easy to integrate, interoperable and easily accessible. In addition, the government of the DRC should opt for the centralised approach for different benefits. With the Centralised approach, the management team will only concentrate on the core application and revenue generation and ensure service to citizens, the control is centralised, there is unified business model among all the departments and an integrated workflow across them. Therefore, the system should ensure that all the concerned services in public funds collection are integrated on a system under the National Ministry of Finance; the National Ministry of Budget must also integrate the public allocation process. This integration must be applied at data and application

levels.

Management Layer: All the applications, network infrastructures, storage devices and storage backups, and other ICT tools implemented to the service must be managed by qualified personnel and policies must be applied. The Managers should apply the policies and manage the ICT tools accordingly. All the hardware, software, network and other ICT tools must be monitored to ensure their performance. The figure 26 presents the components of E-Governance from different layers.

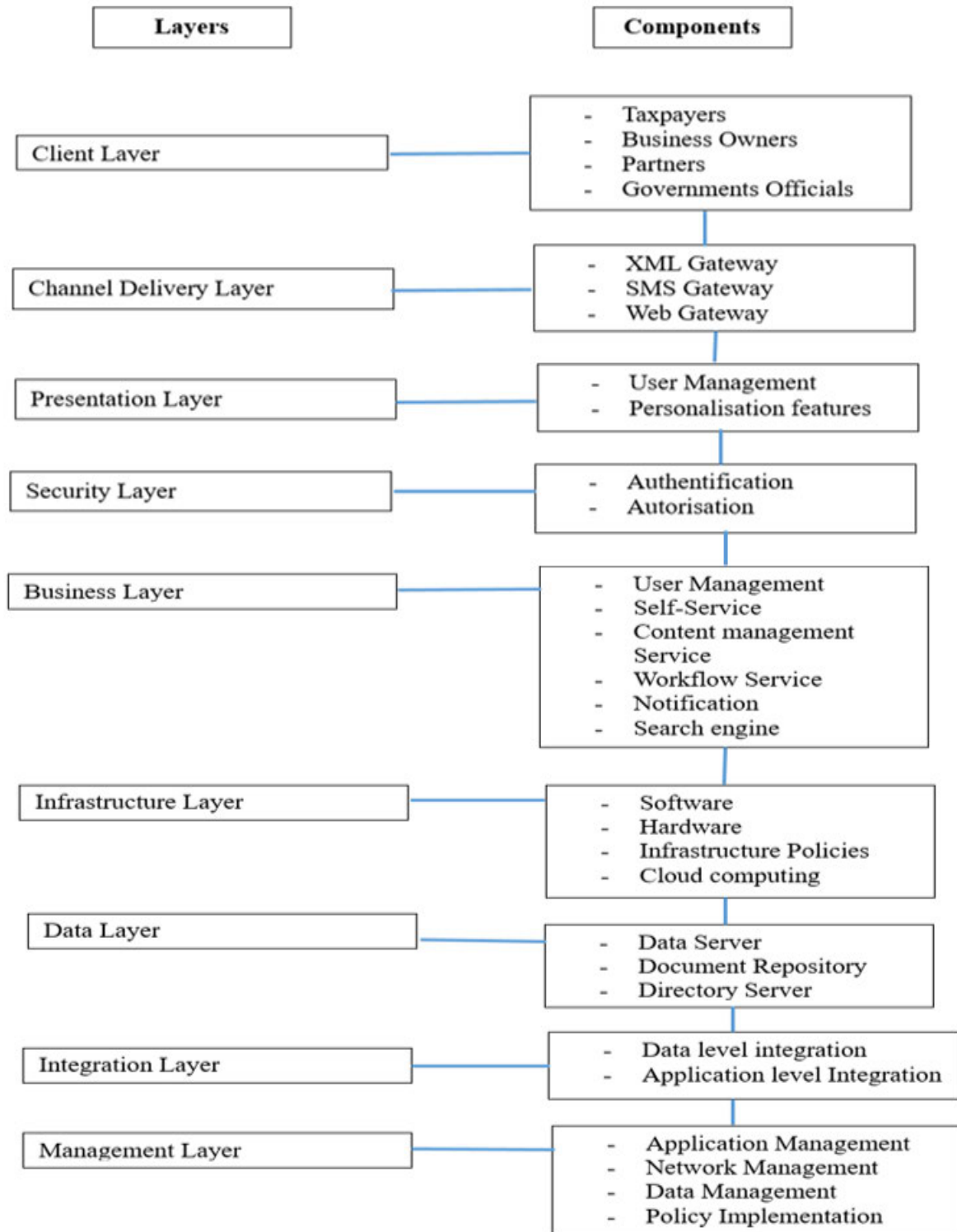


Figure 26: Components of E-Governance for Public Funds Collection and Allocation

7.3.3. Research Objective 3: To identify the challenges related to the implementation of ICT to improve transparency in public funds collection and allocation

The Challenges of the implementation of ICT for funds collection and allocation are related to the Sustainability construct of the Capabilities, Empowerment and Sustainability, CES, Model.

Problem related to the use of ICT for Funds Allocation

Findings (Interview response 3, National Ministry of Budget, 2018) revealed that the problems that affect the use of ICT in funds allocation are linked to the lower motivation of the staff in terms of salary because they believe that the implementation of the computerised systems may affect their interest and remove the practices that were applied to gain personal interest. Further, some workers in the National Ministry of Budget are not able to use ICT tools which can cause a problem because the system can be designed and implemented but may not be used due to the non-adaptation of the workers in using ICT tools. Furthermore, the unwillingness of the public agents to be involved in corruption practices and the lack of awareness and training to the staff are among the main causes that influence the public agents to ignore the introduction of ICT in public funds allocation. According to Tedika (2013), the lack of satisfaction of the basic needs, poor salary, and the lack of professional ethic, poverty, impunity, and matrimonial status are the causes of corruption in the DRC. Thus, the increasing salary of the government workers and the improvement of living conditions of people may positively impact on the reduction of corruption in funds collection and allocation in the DRC. Further, concerning the ethical issues, the tax authorities must apply the ethical principles to ensure that the taxpayers are in line with the policies and principles, and make sure that the abuse of these policies and principles result in punishment. Therefore, the use of a computerised system in public funds allocation will support the government to respond to the public servants requirements concerning their salary and motivations because the system will consider the percentages as mentioned in the budget of the year. This would be most important because workers will only depend on their income, in terms of salary, without depending on bribery and other corruption practices, as mentioned by Mike (2017) that people are involved in corrupt behaviour to make money. In addition, the government of the DRC should make sure that the electricity system is improved as the use of ICT relies on electrical power.

Problem related to the use of ICT for Public Funds Collection

Findings (Interview question 4, National Ministry of Finances) showed that the problems affecting the use ICT in funds collection are associated with the insufficiency of qualified personnel in using computer as a large number of the government workers in many offices in

the DRC are not able to efficiently use the ICT-led tools due to the poor training and lack of ICT tools in the offices. Further, there are not specific software used for the management of public funds in the DRC; which affect workers in revenue generation services at the national, provincial and local levels. At the national level, the National Minister of Finance is not able to control the movements of the funds collected in different areas of the country, as there is no any computerised system for managing the income chain management. Funds are collected manually, some are paid to the bank and the bank slip is submitted to the concerned services (Interview question 5, DGI, DPMER 1, DPMER 2) and others are paid into the own hands of the paying agents (Interview question 7, Civil Society Representative Fizi, Civil Society Representative Uvira and Civil Society Representative Kabare), especially at the local level. Furthermore, the inadequate training in ICT for the staff delayed the process of effectively use ICT in funds collection because there are computers in many offices but are not used, as required, because many workers do not have enough skills to use ICT. Moreover, electricity poses a serious problem to the use of ICT in funds collection in the DRC because it is not permanent, and absent in some areas, and there are no other means of controlling the electricity system for the effective use of ICT. In addition, revenue generating services are not connected and do not use an integrated system to collect the funds, every service is working on its own and the National Ministry of Finances is not able to control the activities in all these services as there is poor involvement of the government of the DRC to integrate ICT in public funds collection and allocation. The payment of taxes is done manually and revenue generating services are not even connected to the bank to ensure the update of their system and the control of the transaction made by the taxpayers and the government officials. Haimanote (2016) highlighted that poor training facilities in the field of ICT challenges the application of ICT in taxation because workers are not quite used to ICT tools that can be used in funds collection and the poor ICT infrastructure characterised by the ineffectiveness of the computers, phones and the specific software to manage the taxes. However, the effective use of ICT in tax collection and administration is needed as issues in managing taxation information are increasing due to paper-based information and how the management of the taxpayers is conducted. Chatama (2013) highlighted that the consistence and compatibility of ICT infrastructure are most important in computerising the process of funds collection to facilitate the payment of the taxes, to get updates from the bank transactions and to allow communication with the taxpayers. He attested that the computerisation of taxes in the Republic of Tanzania gained the advantages of increasing the revenue of the country by computerising all the departments in Tanzania Revenue Authority. Additionally, Kekana (2011) proved that the South

African Revenue Service ensured the application of the E-filing system to secure electronic tax return in order to reduce the manual system that was applied for tax return. Also, the E-filing aimed to submit the services offered via internet and make secure payment of taxes. ICT is used in many ways and the impact is visible in all sectors including the administration of taxes. This improves taxpayer services by facilitating payment methods, issuing faster refunds and giving easier access to relevant information. For tax administrations, it can reduce operation times, decrease costs, improve risk management techniques and audit efficiency and better incentivise national priorities (Microsoft 2017). Thus, a system that ensures the collection should be implemented. This system must respond to the needs of the paying agents and taxpayers and make sure that the collection of funds is effectively realised. The more the tax collected, the higher the realisations of the government projects because all the activities depend on the funds collected in the country. The government workers and the taxpayers would be trained to use the system and avoid the problem that may occur when the taxpayers want to pay the taxes using the system, or the paying agents want to use the system for the purpose of funds collection.

Opinions of the personnel to the introduction of ICT in Public Funds collection and allocation

Findings (Interview question 4, Respondent 1, 2018) depicted that some workers are willing to use the computerised system for public funds collection and allocation in the DRC. Others are not willing to use ICT in funds collection and allocation because of the bad intentions to be involved in corruption acts, the lack of awareness and training of the workers. The unwillingness of workers is motivated by poor salaries and demotivation of the workers, as some of them are not considered by the Ministry in charge of the government workers (Ministere de la Fonction publique) and others are paid insufficient salary, which cannot satisfy their needs. Others are involved in corruption because of the rent seeking behaviours. The lack of satisfaction is due to the poor salary and the lack of motivation and awareness of the workers which is due to insufficient funds collected in the institutions in charge of funds collection because the budget of expenditure is financially dependent on the budget of income collected in the country, which cannot fulfil its needs without the funds collected. While ICT is observed as successful in collecting funds collection, the Government of the DRC should adopt the use of ICT its use to cover the expenses and to ensure that funds are collected successfully. Chatama (2013) attested that the use of a computerised system in tax collection in Tanzania has increased the revenue. Once the system is implemented, the government should ensure the training of workers on how to use the system, show the importance of using this system in funds collection

and allocation and show how the system would improve their living conditions in terms of salary and motivation. The workers should be able to use the system and make sure that the funds are collected accordingly because they are assured that at the end of the month they would earn a salary that fulfils their needs and covers other expenses.

In addition, Findings (Interview question 4, respondent 2, 2018) revealed that some workers are not willing to use computerised systems because they feel that the introduction of ICT towards funds collection would create unemployment and block their interests in terms of rent seeking and embezzlement, but others wish for a computerised environment. These beliefs are mainly based on the unsecure jobs for many government workers in the DRC, because they are working but not permanently employed and others are not even recognised by the central government and are not paid. They survive with what they collect during their activities and presence in the office. To secure this, the government should implement an employment system that recognises all the workers in a service and makes sure that all workers are receiving the same benefits and their salaries are ensured and secured. The Government should also ensure the implementation of funds collection system that would cover all the areas concerned with funds collection in the DRC, and make sure that all the workers are trained to be able to use the system. The government should make sure that the funds collected are used to respond to the budget of expenses for the country and hence, contribute to the development of the country.

Moreover, despite all these considerations in using ICT for funds collection and allocation, there are socio-economic, political and technical challenges that affect the implementation of ICT in public funds collection and allocation in the DRC.

Political challenges are: bad governance, lack of leadership commitments, political pressures and poor administrative capabilities.

Socio-economic challenges are: poor salary, unwillingness of workers and government authorities, lack of satisfaction and rent seeking behaviour.

Technical challenges: the government of the DRC does not ensure the implement of ICT in the DRC, as there is inadequate provision of Infrastructure, lack of awareness, and lack of electricity.

In order to overtake these challenges, the government of the DRC should ensure the introduction of ICT-led tools and implement policies that ensure the application of ICT in public funds management and the involvement of all the workers in using ICT for public funds collection and allocation. Thus, the government should raise awareness of the technology use for public funds collection and allocation. Therefore, the introduction of ICT in public funds collection and allocation would support the government of the DRC to save time, money and

energy in tax collection, make tax payment system convenient, and fast. In addition, tax evasion and fraud would be reduced, increase revenue collection and awareness in funds allocation, and increase transparency and service delivery in the DRC.

The figure 27 presents the challenges, solutions, and the benefits of using ICT in public funds collection and allocation.

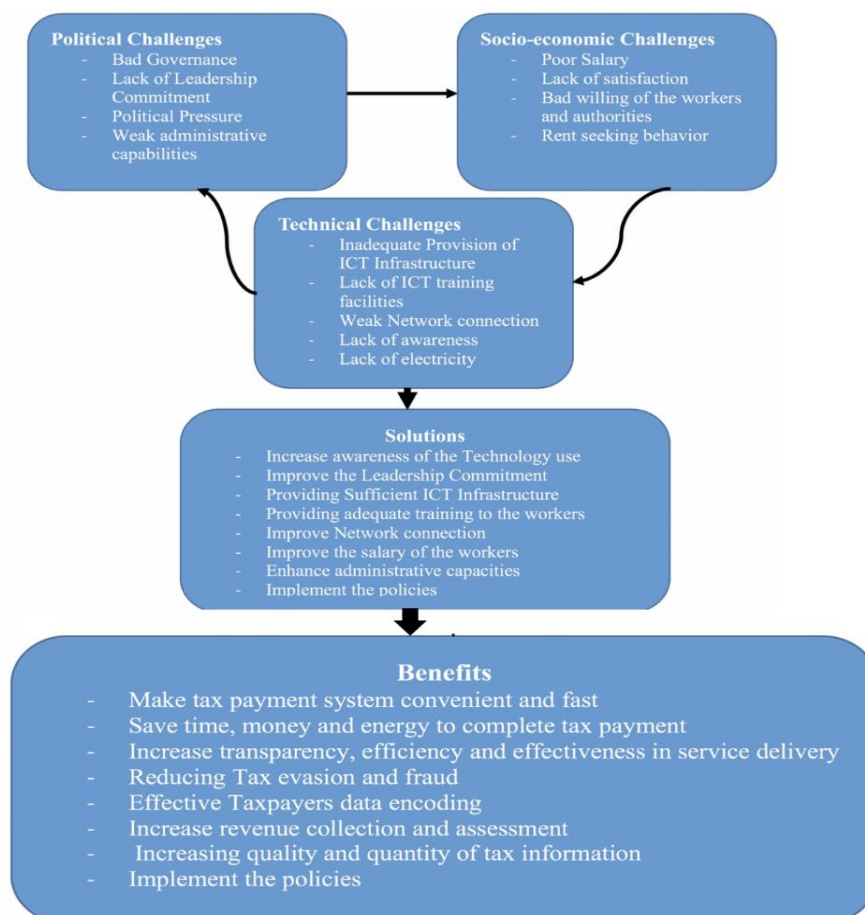


Figure 27: Socio-economic, political and technical challenges, the solution, and the benefits of using ICT in public funds collection and allocation

7.3.4. Research Objective 4: To establish the determinants of ICT for transparency in public funds collection and allocation

This research question linked to the Capabilities, Empowerment and Sustainability constructs of the Capabilities, Empowerment and Sustainability (CES) Model.

Mechanisms in place to ensure the implementation of ICT in public funds collection and allocation

Findings (Interview question 7, respondent 3, 2018) stated that the government, in the DRC, does not have any mechanism to ensure the implementation of ICT in public funds allocation.

The designed mechanisms were implemented poorly, without any effect on the collection and allocation of funds because funds are collected depending on the willingness of the paying agents, as mentioned by the respondents 10, 11 and 12 (Interview question 11, Respondents 10, 11, and 12, 2018). The government of the DRC is losing much funds due to poor system used to collect taxes because the paying agents are misusing their authority to intimidate the taxpayers and take bribery rather than collecting the taxes that could be used for public interests. However, the use of ICT in funds collection has already gained an advantage in public funds management because it simplified the process, time management and reporting, and thus control all the movements in funds collection and allocation. The government of the United Republic of Tanzania has gained this advantage by computerising all the departments in the Tanzania Revenue Authority, with a specific software in every department, and its revenue increased (Chatama 2013). In addition, findings (interview question 7, respondents 4, 2018) revealed that the mechanisms that are used to ensure transparency and accountability in the Provincial Ministry of Finance is the training of workers in ICT tools. The training of workers in ICT tools is not sufficient if these tools are not provided or used for public funds collection and allocation because the Provincial Ministry of finance, in the South Kivu province, does not have ICT tools that are useful for managing funds (Interview question 5, respondent 4, 2018). Further, training is conducted in MS Word and Excel, systems which are not effective to manage funds. Further, findings (interview question 5, respondents 8 and 9, 2018) revealed that, there are poor mechanisms to ensure the use of ICT in public funds management at DPMER. They do appeal to the division of computers in case of problem. The computer division provides some instructions concerning the use of ICT tools like the exchange of data using the Local Area Network, installing only the recognised software and not using the flash disc, instructions which cannot be successful if the service is not computerised completely because the collection of funds in DPMER has not yet started to be used effectively, as there is not a specific software that could ensure the application of these instructions and ICT tools that could be used to ensure the use of ICT for public funds collection is not yet ready (Interview question 5, respondents 8 and 9, 2018).

Furthermore, findings (interview question 7, respondents 5 and 6, 2018) revealed that there were no mechanisms to ensure the use of ICT for transparency and accountability in Public funds collection in DGRAD, as all the processes of funds collection are done manually. The government did not consider to apply ICT in public funds collection despite all the considerations that are given to ICT in enhancing transparency in public funds collection and allocation. Many services like the transmission of the daily reports of the receipts ordered, the

acknowledgement of the receptions of files and clarification and reporting, should be done at the required time if ICT is applied in collecting the funds. However, an application is still in design at the central office of DGRAD in Kinshasa, which may be used for funds collection in DGRAD but the respondent (5) did not mention when the application would be implemented because he was not well informed about its implementation. Also, findings (interview question 4, respondent 1, 2018) showed that the system could be designed and implemented but if the users are not willing to use it, the funds collection at DGRAD would still be done manually and the corruption gate should remain open as the interaction between the taxpayers and the tax authority would be sustained. In addition, the system could be designed and implemented, but its application may not be efficient if the manual of procedure and the policy that guides its use were not provided. In addition, during the analysis, they had only considered the requirement from the central government without involving the different provincial offices, while they expected that this system would be most important and improve the service delivery in DGRAD. Additionally, findings (Interview question 7, respondent 7, 2018) depicted that the provincial direction, in DGI, depends directly on the central office or the main branch. All the instructions were applied depending on the willing of the managers. This affected the use of ICT in public funds collection because the provincial office cannot take any decision or apply the ICT tools in funds collection without the authorisation of the main branch. In addition, these systems should be managed using a policy designed with the implication of the government authorities to ensure that all the services are monitored and run as required; and the systems are maintained as well. These systems must be designed depending on the requirements provided at all the levels to ensure the effectiveness and efficiency at national, provincial and local levels. As well as all the stakeholders involved in funds management have to use these systems for saving, tracking, monitoring, control and audit all the activities that concerned the funds collection and allocation. Thus, the Ministers of Finance and Budget at the national and provincial levels must manage the systems for funds collection and allocation to be updated on the funds collected from different sources of income and allocate the funds according to the percentages in the country budget. The system that may be designed for funds collection in different services must be managed at the National Ministry of Finance to ensure the timely reporting, as they would be updating about what is running in different services like DGDA, DGI and DGRAD, at the national levels. At the provincial level, the system designed for funds collection must be also managed at the provincial Ministry of Finance to ensure that the funds collected with the concerned service, like DPMER in the South Kivu, are well managed and all the services are executed as required. The ministry is updated about the funds collected to

ensure service delivery and timely reporting. Additionally, the government should ensure that there is an interconnected system between the National Ministry of Finance and the National Ministry of Budget, to share the information about the funds collected and make allocation accordingly. Hence, an open government data portal must be put in place to ensure that all the funds collected are well known to all the stakeholders and the allocation is known as well. To ensure the efficiency of this systems, the government must put in place the facilities that are able to manage these systems and the internet connection because they must work online. The training of users and workers must be conducted to make sure that people have knowledge and are able to use the systems effectively. Furthermore, the government has to make sure that data is well managed and that there is a server for the management of funds collected, in the Ministry of Finance and a server for data concerning the allocation funds in the Ministry of Budget. In order to manage these systems and to ensure the management of the information systems, the government must put in place the policies that manage and consider all the aspects of information systems, including hardware, software, processes, users, internet connection and data. In addition, the government of the DRC should put policies in place that ensure the access of information to all.

Implication of ICT in public funds collection and allocation

In the DRC, the use of ICT to enhance transparency in public funds management is seldom. Findings (Interview question 9, respondent 3, 2018) showed that ICT is better in enhancing transparency than a manual mechanism that is used in public fund allocation in the South Kivu province but due to the unwillingness of workers, the implementation of ICT in public funds management faces many problems because they want to engage in corrupt behaviour. Respondent 5 (interview question 9, 2018) also highlighted that ICT is good in transparency but the bad attitude of some workers hinders its implementation in funds collection and allocation. In addition, findings (Interview question 9, respondent 4, 2018) depict that ICT ensures traceability, enhance transparency and accountability in public funds collection and allocation. Other findings (interview question 9, respondent 5, 2018) showed that ICT is most important in enhancing transparency and accountability because it helps to better understand, save data, track and monitor data and make timely decisions. Further, findings (Interview question 8, respondent 7, 2018) show that ICT is considered as the most important instrument in increasing transparency and accountability because it allows to lighten up the work, to share information, at the required time with the taxpayers, produce timely proof of payment and to report at the required time. As highlighted by Chatama (2013) that ICT is valuable in keeping the records of taxpayers, in fast processing of the record and it reduce the time in

communicating with the taxpayers. Furthermore, findings (Interview question 9, respondent 8, 2018) revealed that the use of ICT in addressing issues of transparency and accountability in public funds collection and allocation is most important and successful. In DPMER, there was no a clear space to inform the clients or the taxpayers and other stakeholders about the funds collected and there was no a client interface at the bank, that allow the access to information from DPMER. Respondent 9 (interview question 9, 2018) highlighted that ICT provides the easiest services and makes timely taxpayer supports; also, ICT helps to understand the person who was responsible in taking any action and helps the client to appeal and keep them informed. Also, ICT facilitates in collecting statistics of the collected receipts for a given period. Hence, the application of ICT in public funds collection and allocation is considered, now days, as the gear of increased revenue. Thus, the government of the DRC should ensure that all the services concerned with funds collection and allocation are computerised to ensure the monitoring, control, evaluation and auditability of the funds collected and allocated and make sure that the computerised systems are applied as required.

The barriers in using ICT for public funds collection and allocation

The barriers in using ICT for public funds collection and allocation are correlated to the Sustainability construct of the Capabilities, Empowerment and Sustainability (CES) Model. In this regard, findings (Interview question 10, respondent 3, 2018) depict that there is lack of effective training of workers in IT tools, lack of management software, insufficient of qualified workers in IT, lack of electricity and bad attitude of some workers. However, the literature revealed that corruption can be increased in larger governments as there is red tape and higher bureaucracy and the opportunity to seek bribery. Additionally, the government of the DRC does not ensure or have a specific timeframe to implement ICT for funds management because all the plans are related to the law enforcement as concluded by the in the DRC (Ministère de la Fonction Publique 2009). In order to curb corruption, this forum suggested the following points: to establish the National Council of Ethics, a consultative body for technical advice on the moral integrity of personalities called upon to hold high office; to create the Independent Commission on Ethics and the Fight Against Corruption (CIELC); to create a government agency for the fight against corruption, with substantial resources; to organize the synergy of the control and anti-corruption bodies; to proceed to deposit the instrument of ratification of the United Nations Convention against Corruption, and to ratify the African Union Convention on Preventing and Combating Corruption, as soon as possible, improve the wages and conditions of work of the State Public Employees in order to protect them from precariousness and corruption; to apply positive and negative sanction in all areas of public life; to accelerate reforms of state structures;

to prosecute strongly and to punish all those responsible for corruption at all levels; and to declare a national anti-corruption day in the DRC (MinisteredelaFonctionPublique 2009). Among all these suggestions, the Forum has not considered the factor that ICT is important in curbing corruption and forgets how other countries have succeeded in using ICT for funds collection and allocation. In addition, electricity is poorly managed in the DRC because it is not permanent, the reason why many services have not yet considered the use of ICT in their activities. Further, findings (interview question 10, respondent 4) show that the barrier of using ICT in public funds collection and allocation is the bad intention of workers involved in corruption practices. However, the literature depicted that the causes of corruption in public funds management are based on the conflict of interests, poor salary, professional ethics, bureaucratic red tape and legal loopholes, and the causes of corruption in the DRC are the lack of satisfaction of the basic needs, poverty, impunity, matrimonial status, and the professional ethics (Tedika 2013). Thus, the government of the DRC should adapt the salary of the workers depending on the basic needs, duties of everyone and improve the living conditions of the population which may positively impact on the reduction of corruption in funds collection and allocation in the DRC. Further, findings (interview question 10, respondent 5 and 6, 2018) show that the problem related to the maintenance of ICT tools and the upgrading of their systems, the level of capacity of the workers, lack of electricity and the bad attitude of the workers are the barriers of using ICT in public funds collection and allocation at the South Kivu provincial office of DGRAD, in the DRC. Consequently, these are the results of bad governance because the government does not implement the monitoring measures to ensure the successful of the ruling institutions. Mike (2017) highlighted that the factors that caused corruption in Africa are the unemployment, greed, poor accountability, bad governance and high quest for wealth. If there is lack of leadership skills, the bad governance is observed, and the consequence is the involvement of the government officials to corruption. Greediness is common in the African continent because many government officials spend the public funds allocated for the development of the country for their public needs. They decide to misuse the money for their own interest without solving the main problems in the country. Thus, the government officials should ensure that they are effectively using the public funds to resolve the problems that affect the population and implement the mechanisms that ensure the effective management of the public funds in the DRC. The government of the DRC should ensure that ICT is implemented successfully for public funds management in the DRC and make sure that the workers are well paid, with an affordable salary, and make sure that ICT tools implemented for public funds collection and allocation are well maintained with a qualified team to ensure the upgrade of the

system when needed. Furthermore, findings (Interview question 10, respondent 7, 2018) revealed that the adaptation of some workers to use ICT and the unwillingness of workers are the barriers of using ICT in public funds collection and allocation. However, many African countries are facing these problems due to poor political will and instability, low salary, lack of insurance, unemployment and weak legislative systems (Mashal 2011). In addition, Mele (2014) identified the problems that affect many African countries to ineffectively succeed in the implementation of the new technology for public funds management including the personal greed which leads to unregulated need for money without regarding the moral restrictions, and lack of courage or poor awareness in reporting corrupt behaviour and impunity. Moreover, there is decline of the ethical sensitivity somehow considered as the lack of education or bad learning experience as many government officials and other private workers lose their sense of service and use power for private gain. Additionally, Haimanote (2016) attested that the lack of awareness of the application of ICT in tax administration in many offices does not give attention to the use of ICT for funds collection and ignore the fact that ICT contributes to revenue collection. In addition, these authors depicted that the application of ICT in tax administration has faced many challenges such as; poor ICT infrastructure and specific software to manage taxes and poor training. This is due to the fact that workers are accustomed to ICT tools that can be used in funds collection and allocation, lack of leadership commitment that hinders the application of ICT in Tax administration because the leaders are reluctant and not active to allocate the budget adequately, and are inefficient to bring better solutions to the existing problems. Thus, the government should ensure training of the workers and the implementation of the ICT tools that are related to the service concerned and make sure that the workers deploy ICT tools by ensuring training at all the levels, or the workers and build a strong government institutions, and enhance the ethical values among the workers. Moreover, findings (interview question 10, respondent 8 and 9, 2018) mentioned that the barriers of using ICT for public funds collection at DPMER are the lack of financial mean in procuring and implementing ICT tools, lack of experience of some workers in using the ICT tools, lack of adequate hardware and software, lack of tools like tablets and smartphones for data collection in the field and unwillingness of the workers. Thus, the government should ensure that the implementation of the systems that allow the collection and allocation of funds for paying the taxes online or using the systems to remove the direct interaction between the taxpayers and the tax authority or the paying agent. This is significantly important because ICT helps to build public trust, reduce opportunity for corruption and increases the revenue collection (Haimanote 2016). Hence, the more the funds collected, the more the improvement of the salary and the motivation of the

workers which impact on the reduction of corruption in public funds collection and the improvement of service delivery. Also, the government of the DRC should ensure that there are sufficient ICT infrastructures used for funds collection and allocation for the satisfaction of the taxpayers and service delivery. Also, there is no online service delivery in the DRC. Therefore, the government should ensure the implementation of adequate ICT infrastructure, such as the Tax Collection systems that allow online payment of taxes and the E-budget system that allow the allocation of funds depending on the percentages allocated in the budget of the country. Also, government workers and officials should consider that the funds collection and allocation are the duties that have to be performed well because the more the funds collected, the more the achievement of government programme. Thus, policies must be implemented to ensure the use of ICT in funds collection and allocation activities. To ensure the implementation of ICT and the related policies in funds collection and allocation, government officials should be committed and have a common awareness and understanding on the use of ICT for funds collection and allocation. Additionally, there is need of technical skills for the effective implementation of ICT in public funds collection and allocation and for the management and maintenance of the ICT infrastructure. Thus, the development of human resources is very important to increase employee productivity, transparency and government efficiency and effectiveness (Mashal 2011). Therefore, the government of the DRC should prepare and provide practical and sufficient ICT related training to the workers to make them more competent and confidential in their work within a limited period. The government of the DRC should ensure that there is permanent electricity in rural and urban areas and raise awareness about the use of ICT for funds collection and allocation in urban and rural areas. The figure 28 depicts the use of ICT for public funds collection and allocation.

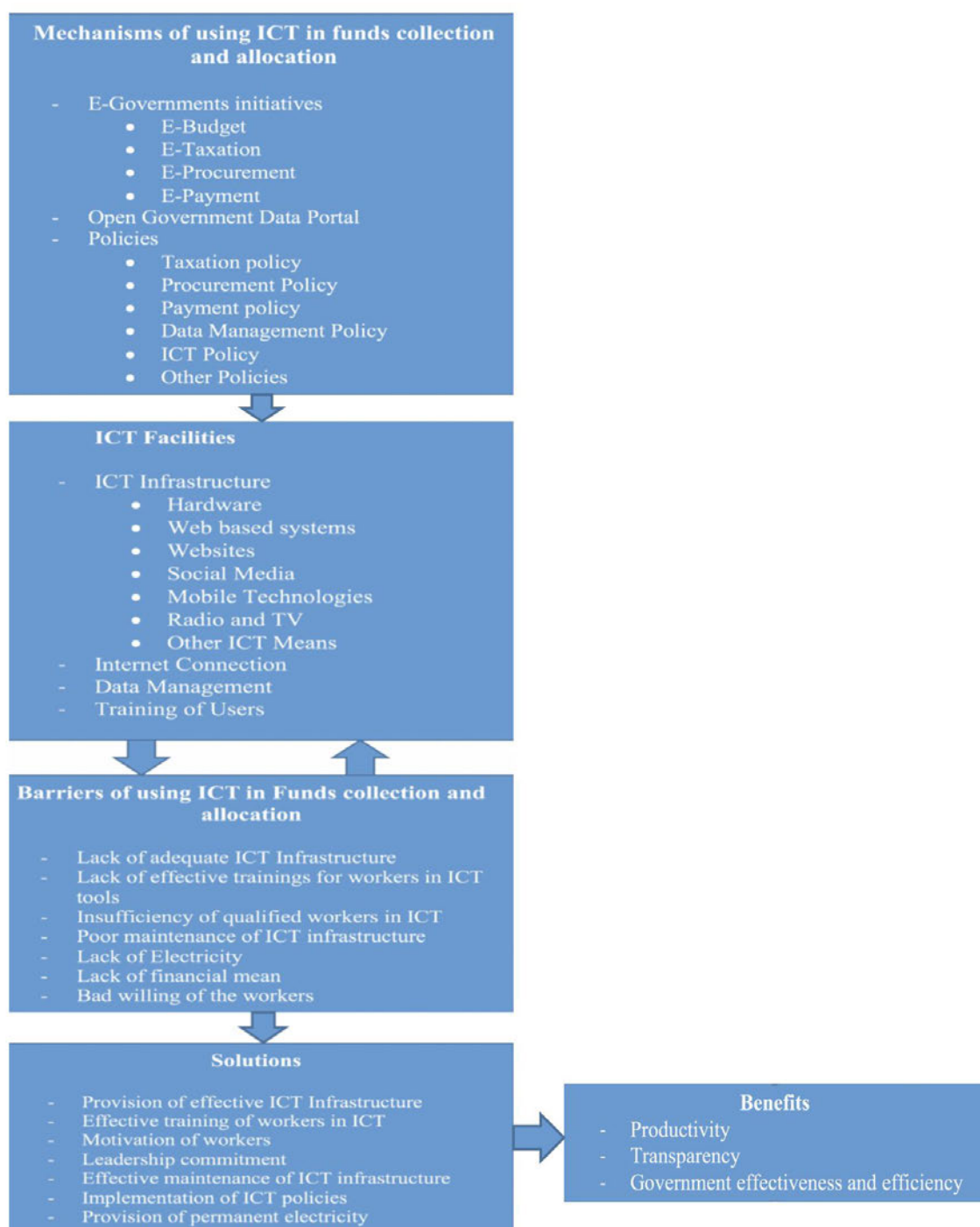


Figure 28: Use of ICT in public funds collection and allocation

7.3.5. Public perceptions of using ICT as a mean to address transparency and accountability issues in public funds collection in the DRC

This section concerns all the constructs of the Capabilities, Empowerment and Sustainability (CES) Model.

The formal processes for paying taxes within the community

Findings (Interview Question 11, Respondent 10) revealed that the formal process of paying taxes in the DRC does not exist because the taxpayers pay taxes without being informed, and sometimes in the own hands of the paying agents without issuing of receipts. In addition, Respondent 11 highlighted that the population is not well informed about the tax that they are supposed to pay and the taxation mode is not well known (Interview Question 11, respondent 11). Additionally, findings (Interview question 11, respondent 12) show that there is lack of information as the nomenclature which defines that taxes is not communicated to the population. Besides, the National Ministry of Finance in the DRC defined four steps that must be applied to pay taxes namely commitment of expenses, liquidation, authorisation (scheduling) and payment.

While ICT is accepted as successful in collecting funds, the government of the DRC should ensure that the funds collection process is computerised and the citizens are well informed about the nomenclature that defines taxes and allow them to pay taxes online, or using other ICT means like Mobile Technologies.

The mechanisms in place to inform the community about the taxes

Findings (interview question 12, respondent 10, 2018) revealed that there is no mechanism to inform the citizen about taxes as the paying agents or tax authorities impose the taxes to the citizen without any information and awareness. Further, findings (interview question 12, respondent 12) show that the citizens pay taxes without knowing its validity.

According to Sousa (2018) access to information is the gear of the citizen participation in the government execution and accountability. Therefore, E-government initiatives provide solutions to cover the information gap between rulers and ruled by granting access to information and services. Thereby enabling citizens to become more acquainted with the policy process. However, the right of access to information has a purely formal value if the citizen is not able to interpret critically the contents in order to produce knowledge about a particular fact and thus to be sufficiently able to participate and intervene in the public funds management. In addition, Open Government Data is considered as the powerful technology to ensure transparency and accountability as all the government data are accessed with the citizen at the open government data portals (Danida 2012). Therefore, the government of the DRC should

ensure the integration of the open government data portal in enhancing transparency as the citizen will be informed about all the program of the country and contribute accordingly. Also, the government should join the global partnership of government of open data to ensure access of information to all and establish a consistent ecosystem, raise awareness and educate the citizen about the use of ICT for public funds collection.

The barriers of using ICT for public funds collection in the community

The barrier of using ICT in public funds collection correlates with the Sustainability constructs of the Capabilities, Empowerment and Sustainability, CES, Model. Considering this construct, literature revealed many problems that affect the use of ICT in public funds collection are linked to the personal greed, which leads to the unregulated need for money without regarding the moral restrictions; lack of courage or poor awareness in reporting corrupt behaviour and impunity, poor political will, poor salary and poor implementation of the legislative system (Mashal 2011 and Mele 2014). In addition, the lack of awareness in the application of ICT and the poor infrastructure, lack of education or bad learning experience, and poor training facilities affect negatively the use of ICT in public funds collection (Haimanote 2016). Findings (interview question 13, respondent 10) showed that the population of the territory of Fizi is illiterate and peasant and they do not maintain effectively use of computers; also, the government information system applied in Fizi territory is not computerised and there is lack of internet. In addition, findings (interview question 13, respondent 11) depicted that the use of ICT is not yet popularised in the territory of Uvira and thus, the population in this territory is still ignorant about the use of computers. Further, findings (interview question 13, respondent 12) alluded that there is lack of ICT means, as the territory of Kabare is not having even a community radio; also, the level of education of the community and the bad willing of the paying agents or the tax authorities affects the use of ICT in funds collection in the territory of Kabare. Thus, the government should ensure that ICT is used efficiently at the local level by implementing the ICT-led tools and Open Government Data to inform the community or the citizen about the taxes and the execution of the budget; to raise awareness and educate the citizen on the use of ICT for funds collection and to implement successful ICT means that allow the community to be informed about the taxes and pay accordingly to avoid the direct interaction between taxpayers and the paying agent or the tax authorities. Open Government Data portals and the tax payment centers should be implemented in all the corners of the country to ensure the availability of taxation information and facilitate the payment of different taxes at the required time. Citizens can be informed about taxes using the mobile technologies, like

SMS and calls, the social media and the Open Government Data portals. Also, payment can be made using the Mobile technologies and E-payment initiatives that allow online payment. Additionally, the government should make sure that there are tax returns to encourage the citizen to pay taxes and to educate the citizen to apply the implemented ICT means and the importance of paying the taxes.

The figure 29 derived from the use of the public perceptions of using ICT as a mean to address transparency and accountability issues in public funds collection:

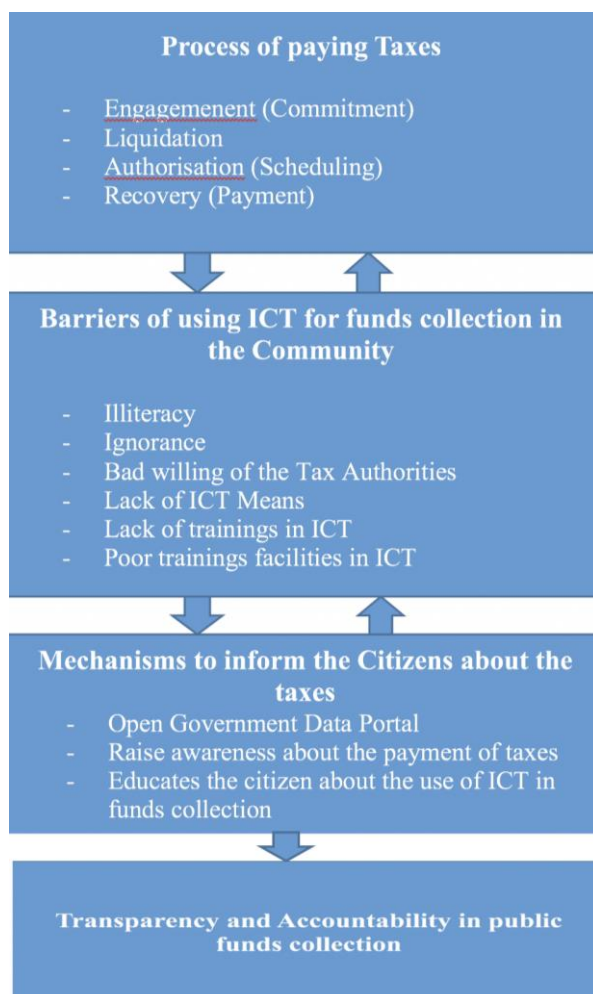


Figure 29: Perceptions of using ICT in public funds collection in the Community

7.3.6. Research Objective 5: To develop a suitable framework for the implementation of ICT for public funds collection and allocation

Framework for the Adoption of ICT in Public Funds Collection and Allocation

The framework that is suggested for the adoption of ICT in public funds management is based on the study findings and the discussion of these findings. This framework concerns all the stakeholders from the national, provincial and local levels. At the national level, the Ministries of Finance and Budget define and apply E-Government Initiatives and policies, Implement E-Government Initiatives and policies, monitor the E-Government Initiatives and the supporting policies to ensure its application in the public funds collection and allocation, evaluate and Audit E-Government Initiatives and policies for the effective use of ICT in public funds management. The E-Government initiatives define the ICT based mechanisms that must be applied to ensure transparency in public funds collection and allocation. Concerning the collection of funds, the E-Government initiatives that may be developed are based on the sources of government funds, mainly taxes. Thus, the initiatives ensure that E-Taxation, E-Payment and mobile technologies are applied for payment of the taxes using ICT means and the Open Government Data portal to ensure access of information to citizens. The policies must be applied to ensure the use of the E-Government initiatives and the management of the public funds in line with the National Development plan and government strategic goals. Concerning the allocation of funds, the National Ministry of Budget defines these mechanisms and ensures its application, based on the National Development plan and government goals.

The Budget of the year defines all the expenditures and the sources of income, but there is no computerised system that allow the allocation of funds in the DRC, this is the reason why the framework defines how ICT can be applied for funds allocation in the DRC and suggest the policies that may be considered to ensure transparency in public funds allocation. Thus, E-Budget, E-Payment and E-Procurement must be applied, as a facilitating tool, to ensure online transactions when allocating funds for the payment of government expenses, depending on the percentages in the government budget, and the Open Government Data Portal must be implemented to ensure the access of government information to citizens. Therefore, the government should ensure that all payments are done using online transaction and make sure that the percentage of funds is considered, with the use of the ICT means.

At the operational level, the government should ensure the implementation and application of ICT for public funds collection and allocation, and consider the application of the policies to support the effective use of ICT in public funds management. As discussed above, the government should make sure that the process of collecting and allocating funds is

computerised using specific systems. The use of E-Taxation, E-Payment and Mobile technologies for funds collection, and the Open Government Data Portal for the availability of information, will ensure the effective collection of public funds. In addition, the use of ICT-led tools will increase the government income as citizen use ICT means to pay taxes online and use the Mobile Transactions. Also, the use of ICT means like E-Budget, E-Payment and E-Procurement, in the National Ministry of Budget and the Provincial Ministry of Budget, ensures that all the expenses are computerised based on their percentages in the country budget, and allocates the funds depending on the percentages of allocation, and use of Open Government Data Portal for the availability and accessibility of government information, thereby increase productivity and transparency in public funds allocation.

At the system level, the government should ensure that ICT tools are well implemented used effectively and efficiently for public funds collection and allocation. Thus, to ensure the applicability and sustainability of ICT in public funds collection and allocation. The government should ensure that there is provision of effective ICT Infrastructure, effective training of users, effective maintenance and upgrade of ICT infrastructure, motivation of workers, leadership commitment, implementation of ICT policies, and provision of permanent electricity.

Based on the Capabilities, Empowerment and Sustainability (CES) Model that conducted this study, the Capabilities construct is considered at the institutional Level, where the National Ministries of Finance and Budget must define and apply E-Government Initiatives and policies, implement E-Government Initiatives and policies, and the monitoring, evaluation and auditing of these E-Government initiatives and policies.

The Empowerment construct is considered at the operational and system levels, where the services concerned with funds collection and allocation, including the Provincial Ministries of Finance and the Budget, the National Ministry of Budget, DGDA, DGI, DGRAD and the provincial services of funds collection, DPMER, in the case of the province of South Kivu must apply the E-Government initiatives, including E-taxation, E-Payment, Mobile Technologies, Open Government Data Portal, Radio and TVs and Social Media to facilitate the collection of funds, and inform the citizens about funds collection and E-Budget, E-Procurement, E-Payment, Radio and TVs and Social Media for the allocation of funds, and Open Government Data Portal to inform the citizen about the funds allocation. Thus, the taxpayers would be able to make the payment online, informed and updated about the taxes anytime. In addition, the government would be able to allocate the funds according to the budget of the year and inform the citizens about the government expenses and how they are expected to respond to these

expenses. Furthermore, to ensure sustainability of the use of ICT in public funds collection and allocation, the government of the DRC should ensure that there is effective maintenance and upgrade of the ICT infrastructure, provision of effective ICT Infrastructure, effective training of users in ICT, motivation of workers, leadership commitment, implementation of ICT policies and the provision of permanent electricity.

Furthermore, despite the fact that CES model provides the possibility of using ICT for public funds collection and allocation, there is also need to ensure the applicability of ICT in public funds management. According to Wilson (2010), applicability refers to “the extent to which the results are likely to impact on practice”. This implies that applicability refers to the functioning of ICT in public funds collection and allocation and how it impacts on transparency in public funds management. Based on the findings of this study, the applicability construct must be considered to ensure the use of ICT in public funds collection allocation, to determine the cost of the system and the time taken for a system to handle the tasks and ensure that there is no challenge and barrier that can hinder the use of ICT in public funds management. Findings revealed that there are many challenges and barriers that affect the use of ICT in public funds management in the DRC. However, to ensure the applicability of ICT in public funds collection and allocation, the government of the DRC should ensure that the implementation of ICT-led tools is effective and make sure that these tools respond to the needs. In addition, the government of the DRC should recruit qualified personal in ICT and organise training programs for workers and ensure that they are well monitored and motivated. This ensures that all workers are able and ready to use effectively and efficiently the implemented system.

Additionally, the system can be implemented and workers are able to use it but some factors, like lack of electricity and the bad willing of government workers, can affect its use and affect the productivity. Based on the findings of this study, the government should ensure that there is permanent electricity and government workers are willing to use the system. Therefore, the inclusion of the applicability construct is most important because it helps to identify the personal affected to the use of the system and ensure their trainings, how the system respond to the needs, and comply with other challenges and barriers that may hinder the use of ICT in public funds management. Moreover, this construct helps to find out how the use of ICT impacts on service delivery in public funds collection and allocation, and check the severity of using ICT in public funds management. The figure 30 represents the framework for the adoption of ICT in funds collection and allocation.

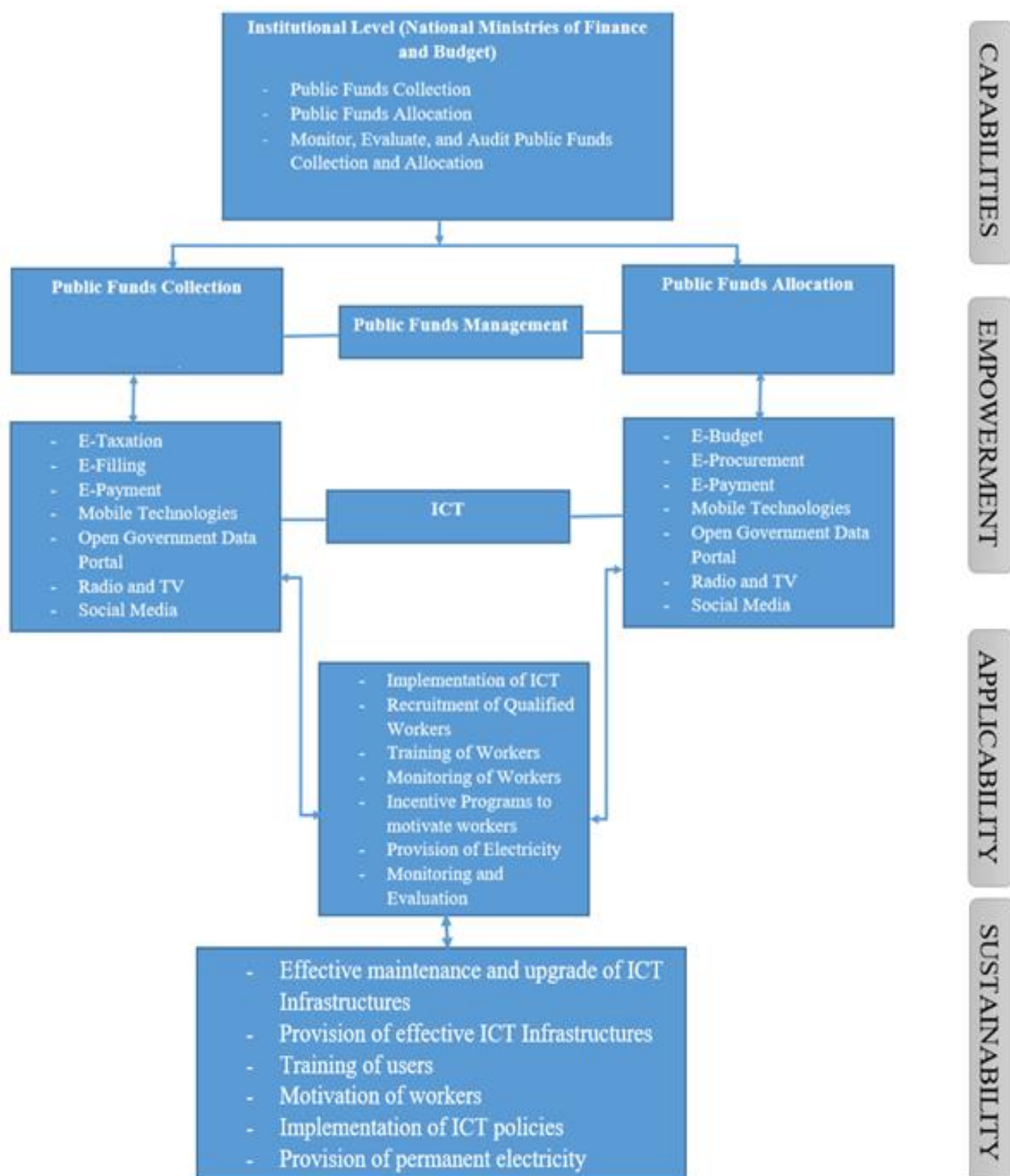


Figure 30: Framework for the adoption of ICT in funds collection and allocation

7.4. Summary of Chapter 7

This chapter discussed the findings presented in chapter 6. The discussions were based on answering the research questions depending on the findings from the respondents and the related literature. Firstly, the discussion concerned the current mechanisms in place to ensure transparency for funds collection and allocation in the DRC. However, there is no mechanisms used in the National Ministry of Budget, the mechanisms applied in the National Ministry of Finance are not effective to ensure transparency, and ICT is used poorly in this case. Hence, there is need of integrating E-Government initiatives supported by the policies to ensure transparency and accountability in public funds collection and allocation. Secondly, the current use of ICT to collect and allocate public funds, including the ICT tools being used to collect and allocate funds and the current plan for ensuring the use of ICT in public funds collection and allocation were discussed. The provincial Ministries of Finance and Budget and the services concerned with funds collection, including DGI, DGRAD and DPMER, acknowledged that they are not using ICT for public funds collection and allocation and but presented their plans for integrating ICT for funds collection and allocation in the DRC. Hence, there is a need to effectively implement ICT for public funds collection and allocation. In addition, the challenges related to the implementation of ICT in public funds collection and allocation were identified and the main problems were related to poor ICT infrastructure, lack of training in ICT, poor training facilities, insufficient electricity and lack of awareness of the use of ICT in public funds collection and allocation. Further, the chapter discussed the use of ICT to address issues related to transparency and accountability in public funds collection and allocation in the DRC. However, workers in the Provincial Ministries of Finance and Budget and the service concerned with funds collection mentioned that there are no mechanisms in place to ensure the implementation of ICT in funds collection and allocation, but highlighted that the use of ICT ensures transparency in public funds collection and allocation rather than manual systems, as it removes physical and direct interactions. Furthermore, the barriers that could affect the effective use of ICT in public funds collection and allocation are due to limitation of the following; adequate ICT infrastructure, effective training for workers in ICT tools, insufficiency of qualified workers in ICT, poor maintenance of ICT infrastructure, electricity, of financial means and the bad attitude of the workers. The suggested solution are as followed: to ensure the effective use of ICT in public funds collection and allocation, the provision of effective ICT Infrastructure, effective training of workers in ICT, motivation of workers, leadership commitment, effective maintenance of ICT infrastructure, implementation of ICT policies, and the provision of permanent electricity. Hence, there is a need to implement ICT

for public funds management in the DRC and make sure that the government was involved in the monitoring of ICT use in public funds collection and allocation. Moreover, the perceptions of the citizen to the use of ICT as means to address transparency and accountability issues in public funds collection were discussed. However, the citizens argued that there are no formal processes applied in the community to pay taxes because the citizens are subject to imposition from the paying agents or tax authorities and the nomenclatures that define the taxes are unknown. In addition, there are no mechanisms to inform the citizens about the taxes, and the tax authorities impose taxes without informing the citizen or raising awareness. Furthermore, the barriers of using ICT for public funds collection in the community, namely illiteracy, ignorance, bad attitude of the Tax Authorities, lack of ICT means, lack of training in ICT, and poor trainings facilities in ICT were also discussed. Hence, there is need of an open Government Data Portal to ensure the availability and accessibility of information to citizens, raising awareness about the payment of taxes using ICT and educating the citizens about the use of ICT in funds collection and allocation. Further, a framework for the adoption of ICT in public funds collection and allocation in the DRC was suggested based on the findings from the study. This framework was made based on the constructs of the CES model and the researcher suggested the applicability construct to ensure the application of ICT in public funds collection and allocation. Therefore, this study suggested the CEAS model to be used for the adoption of ICT in public funds management in the DRC.

CHAPTER 8: CONCLUSION AND RECOMMENDATIONS

8.1. Introduction

This study assessed the role that ICT can play to enhance transparency in public funds management in the DRC. The research investigated how ICT can be used to promote ethical attitudes for transparency in public funds collection and allocation in the DRC and proposed a framework for its adoption. Further, the study investigated the processes in place for public funds collection and allocation; the use of ICT for public funds collection and allocation and identified the challenges related to the implementation of ICT in public funds collection and allocation. In addition, the study established the determinants of ICT for transparency in public funds collection and allocation, and mapped a suitable framework for the adoption of ICT in public funds collection and allocation. This chapter concludes the contents of other chapters and presents the recommendations and suggestions for the successful implementation of ICT in public funds management in the DRC. Furthermore, this chapter provides the contributions and limitations of the study, and the suggestions for future researchers.

8.2. Conclusion based on the Chapters and Findings

This study sought to find out from national, provincial, and local levels, the prospects of using ICT, what it entailed for ICT to be applied in public funds managements and suggested a framework that should be adopted for the effective use of ICT for transparency in public funds collection and allocation in the DRC. The study adopted the Capability, Empowerment, and Sustainability (CES) model, a revised version of the Capability approach model, as the guiding theoretical framework. It assessed the role that ICT can play to enhance transparency in public funds management. This approach allowed the researcher to assess how ICT-led tools would empower public funds collectors and allocators to manage such funds in a transparent way. The CES is built up of the following components: Capabilities, Empowerment and Sustainability. The study adopted an exploratory design coupled with the qualitative approach. A purposive sampling technique was adopted to select the sample. Interview guides were used as research instrument. Data was analysed using Nvivo software for qualitative statistical analysis. Data was collected at three levels, national level, which includes the ministry of finance and the ministry of budget; provincial level, which includes the Provincial Ministry of Finance and the Provincial Ministry of Budget, and the services concerned with funds collection (DGDA, DGI, DGRAD and DPMER); and at the local level, it included the civil society representatives of the territories of Fizi, Uvira, Walungu and Kabare. The total number of respondents was 16 but the

researcher interviewed only 12 respondents due to the constraints presented in Chapter 5 of this study.

Further, literature revealed that many countries have already adopted the use of ICT as mechanisms to fight corruption and to promote service delivery, as all government services are automated, and open government data portals are implemented. In addition, ICT allows citizens to express their voice in decision making and allows access to public information, which is among the factors that improve transparency because the citizen will be aware of what the government actions are running. The computerisation of government services (E-Governance) is most important in managing the collection and allocation of funds and hence, enables communication with the taxpayers, facilitate the payment of taxes, and get updates from the bank. However, the effective use of computerised systems in tax collection and administration is needed, as issues in managing taxation information are increasing on the daily basis.

Besides, the use of ICT in public funds collection and allocation is facing many challenges and barriers classified in socio-economic, political and technological fields. Literature revealed that the lack of accountability occurred when the government officials are aware that the monitoring mechanisms are not implemented to monitor the management of funds collected and the covered expenses, the lack of leadership and a bad governance is observed in many developing countries with the involvement of the government officials. Further, the problems that affect the funds collection and allocation in the developing countries are related to greed and selfishness, lack of leadership, weak government institutions, lack of political will, weak ethical values, and corruption gates are open due to weak judicial and legislative systems, political instability and poor political will, low salary, poverty, lack of insurance and unemployment.

However, findings revealed that the current mechanisms in place to ensure transparency in public funds collection and allocation are poor because the strategies that are adopted do not respond to the transparency and accountability expectations as the National Ministry of Finance is using a manual system and the National Ministry of Budget is using the GES-Depense but this system is not applied country wide and is not applied effectively. In addition, the policies applied are not related to the issues affecting public funds management in the DRC. In addition, the ICT-led tools being applied do not respond to the need of users in terms of funds collection and allocation, as they cannot be used to record, monitor or track the funds collected or allocated, or being used for any purpose related to the management of public funds, but are used for secretarial services and the budget is executed using a manual system which opens the gates to corruption. Additionally, findings revealed that the problems that affect the use of ICT in funds collection and allocation are linked to a lack of motivation of the staff in terms of salary

because they believe that the implementation of the computerised systems in funds collection and allocation may affect their interest outside the salary, and remove the practices that were applied to gain that interest. However, some workers believe that ICT-led tools are most important in public funds collection and allocation but others are not willing to use computerised systems and some are not able to use ICT-led tools which can cause problem because the system can be designed and implemented but may not be used due to the non-adaptation of workers in using ICT tools. Moreover, electricity poses a serious problem to the use of ICT in the DRC because it is not permanent, and even absent in some areas. In addition, the government of the DRC does not have any mechanism to ensure the implementation of ICT in public funds collection and allocation. Additionally, the taxation mode and the nomenclature which defines the taxes are not well known and communicated to citizens.

Thus, the study suggested to implement an E-Government initiative based in public funds collection and allocation combined with the policies to overcome the gaps that exist in enhancing transparency in funds collection and allocation in the DRC. The government of the DRC should make sure that ICT coupled with the policies are applied to record, save, monitor, control, track, audit, reporting and reporting. Also, the integration of ICT will help to promote ethical attitudes and raise awareness. Therefore, using in ICT provides the most important strategies that may increase the revenue and implement transparency measures in funds collection and allocation. The government of the DRC should also ensure the implementation of the open government data portal to help the citizens to be informed about taxes. In addition, challenges of using ICT for funds collection and allocation were identified, including the political, socio-economic, and the technical challenges. However, some solutions were provided and the benefits of using ICT and policies for funds collection and allocation. In addition, the government of the DRC should ensure that there are sufficient ICT infrastructures used for funds collection and allocation for service delivery. Additionally, the government of the DRC should ensure that there is permanent electricity in rural and urban areas; and raise awareness about the use of ICT for funds collection and allocation and ensure that the process of funds collection is computerised to ensure the access of information to the citizen and allow them to pay the taxes online or using Mobile Technologies. Further, the government of the DRC should ensure the integration of the open government data portal and join the global partnership of government open data to ensure access of information to all, and establish a consistent ecosystem, raise awareness, and educate the citizen about the use of ICT for public funds collection. Thus, ICT must be implemented to ensure the effective collection and allocation of public funds in the DRC as suggested in the proposed framework for the adoption of ICT in

public funds management in the DRC.

8.3. Recommendations

1. The government of the DRC should implement an ICT Policy that ensure the use of ICT in the DRC. This ICT policy should define clearly how ICT can be used and managed to ensure its effectiveness and efficiency in public funds management.
2. The implementation of E-Governance will help the government of the DRC to ensure the collection and allocation of public funds. However, the government of the DRC should partner with other countries that have already succeeded in the implementation of E-Governance to ensure effectively the use of ICT in public funds collection and allocation. In addition, the government of the DRC should also make sure that E-Government initiatives are aligned with the goals and priorities of the DRC.
3. The citizens and government workers should be motivated to ensure the effective application of ICT in public funds collection and allocation. The government could implement an Incentive model to motivate, encourage, and attract government officials to collect and allocate public funds.
4. In the DRC, there is need of developing a culture of transparency by raising awareness to government workers and citizen to ensure that the public funds are managed in the right way. Thus, the government workers and citizens should be trained in using ICT to improve service delivery. This should be coupled with the policies that define how ICT can be used and orient users for the effectiveness of ICT in service delivery. The Government should also make sure that ICT is applied effectively and monitor the implemented system accordingly.
5. The government of the DRC should ensure that the National Digital Plan is implemented to ensure the implementation of E-Governance and raise awareness to citizens and government officials on the use of ICT in public funds management. In addition, the implementation of the open government data portal is most important to ensure that the citizens are well informed about the program of the government and the taxation process.
6. The government of the DRC should make sure that ICT infrastructures are well maintained and monitored and ensure that all the corners of the DRC have access to information.
7. The government of the DRC should make sure that there is improvement in the implementation of infrastructure that are most important and ensure that there is permanent electricity for the effective use of ICT tools.

8. The government should also implement an ICT4D Research Centre for developing adequate frameworks that can be adopted for service delivery in the DRC.
9. The government should also consider the extension and expansion of the ICT services in the different provinces of the DRC and ensure the connection between the main branch and the ministers with different entities in the provinces. Thus, ICT should be used in all the concerned services to share information between the national, provincial and local levels.
10. The government should ensure that rules and laws related to corruption practices are applied, and ensure that those who are involved in corruption practices are punished. This will entail adopting innovative mechanisms to detect and provide proof of corruption behaviour that is admissible to court

8.4. Limitation and Future Research

This study investigated how ICT can be used in enhancing transparency in public funds management in the DRC. However, at the provincial and the local levels, the study covered the South Kivu province and the territories of Fizi, Uvira, Walungu and Kabare. Further studies are still needed to ensure the use of ICT in service delivery in the DRC. Such studies will add more insights and ensure the adoption of ICT in public funds management in the DRC. In this study, the researcher applied the Capabilities, Empowerment and Sustainability Model, where the Capabilities construct was considered at the national level, to suggest E-Governance initiatives and the implementation of policies that can be used to ensure transparency in public funds collection and allocation. In addition, the Empowerment was considered at the operation level where ICT-led tools were suggested to be applied in public funds collection and allocation; and the measures to ensure the sustainability of ICT for funds collection and allocation were presented. However, the CES Model does not ensure the applicability construct to ensure the use effectively ICT in public funds collection and allocation. Thus, the researcher suggests the inclusion of the applicability construct in this model to ensure the successful use of ICT in public funds collection and allocation. Therefore, the model that derived in the CES Model is Capabilities, Empowerment, Applicability and Sustainability (CEAS) Model, which considers the Capabilities, Empowerment, Applicability and Sustainability constructs.

8.5. Contribution of the Study

This study is the pioneering study that investigates the potential use of ICT to enhance transparency in public funds collection and allocation in the DRC. It contributes significantly to the public fund management in the DRC. The study considered the use of ICT from the national, provincial and local levels to ensure how ICT can be applied from the institutional, operational and system levels; thus, ensure transparency from the government officials to the citizens. Further, this study presented the barriers and challenges that face the successful adoption of ICT in public funds management and contributed to knowledge on handling such gaps. Thus, the framework that derived from this study demonstrated how ICT can be adopted for funds collection and allocation in the DRC. It is anticipated that the adoption ICT in public funds collection and allocation will enhance transparency in public funds management in the DRC.

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APPENDIX A: INTERVIEW GUIDE ENGLISH VERSION

AT THE NATIONAL LEVEL

Current Mechanism for Funds Collection and Allocation

1. What are the strategies currently used to collect and allocate public funds in the DRC?
2. Is there any policy used to address the issue of transparency in public funds collection and allocation in the DRC? How do you ensure its application?

Challenge in ICT Implementation

3. What are the problems related to the use of ICT in public funds collection and allocation?
4. What are the opinions of the personnel to the introduction of ICT in public funds collection and allocation?

AT THE PROVINCIAL LEVEL

Use of ICT for Funds Collection and Allocation

1. What are the ICT tools being used for Public funds collection and allocation?
2. What is the current plan for ensuring the use of ICT in public funds collection and allocation?

Use of ICT to address issues related to transparency and accountability in public funds collection and allocation

3. What are the mechanisms in place to ensure the implementation of ICT in public funds collection and allocation?
4. Please highlight some of the activities undertaken as part of the mechanism (s) highlighted above?
5. Can ICT-led tools be better for ensuring transparency in public funds collection and allocation than the actual mechanism (s)?
6. What can be the barrier of using ICT for public funds collection and allocation?

AT THE LOCAL LEVEL

Public perceptions of using ICT as a mean to address transparency and accountability issues

1. What are the formal processes for paying taxes within the community?
2. What are the mechanisms in place to inform the community about the taxes?
3. What can be the barriers of using ICT for public funds collection in your community?

APPENDIX B: INTERVIEW GUIDE FRENCH VERSION

AU NIVEAU NATIONAL

Les Mécanismes actuels de collection et allocation des Fonds Publics

- Quelles sont les stratégies couramment utilisées pour collecter et allouer les fonds publics en RDC ?
- Y a-t-il une Procédure et/ou Politique de gestion appliquée pour adresser les questions de la transparence dans la collection et l'allocation des fonds publics en RDC ? Comment êtes-vous rassuré de son application ?

Challenge dans l'implémentation de la TIC pour assurer la Gestion des Fonds Publics

- Quels sont les problèmes liés à l'utilisation de la TIC dans la Gestion des fonds publics en RDC ?
- Quelles sont les opinions du personnel de la fonction publique pour l'introduction de la TIC dans la collection et l'allocation des fonds publics ?

AU NIVEAU PROVINCIAL

De l'utilisation des TIC dans la collection et l'allocation des Fonds Publics en RDC

- Quels sont les outils de la TIC que vous utilisez pour assurer la collection et l'allocation des Fonds Publics ?
- Quel est votre plan actuel pour assurer l'utilisation de la TIC dans la collection et l'allocation des Fonds Publics en RDC ?

Utilisation de la TIC pour adresser les problèmes liés à la transparence et redevabilité dans la collection et l'allocation des Fonds Publics

- Quels sont les mécanismes actuellement appliqués pour assurer l'implémentation de la TIC dans la collection et l'allocation des Fonds Publics
- Veuillez signaler quelques activités faisant parties des Mécanismes cités ci-haut
- Est-ce que la TIC peut être une meilleure pour assurer la transparence dans la collection et l'allocation des fonds publics que le mécanisme actuel ?
- Selon vous, quels sont les obstacles de l'utilisation de la TIC dans la collection et l'allocation des fonds publics ?

AU NIVEAU LOCAL

Perceptions de la population pour l'utilisation de la TIC comme moyen d'adresser les problèmes liés à la transparence et redevabilité dans la Gestion des Fonds Publics

- Quels sont les processus de paiement des impôts et taxes applicables dans la communauté ?
- Quels sont les mécanismes en place pour informer la communauté à propos des impôts et taxes ?
- Quels peuvent être les obstacles de l'application de la TIC pour la collection des fonds publics dans la communauté ?

APPENDIX C: Informed Consent Documents, English Version

UNIVERSITY OF KWAZULU-NATAL School of Management, IT and Governance

Dear Respondent,

Research Project

Researcher: IMAJA MATIYABU ITULELO, Telephone number: +243818279734, Email: imajaitulelo1@gmail.com

Supervisor: Manoj MAHARAJ, Tel: +27312607576, Email: maharajms@ukzn.ac.za

Research Office: Humanities & Social Sciences Research Ethics Administration, Govan Mbeki Building, Westville Campus, Tel: + 27 (0)31 260 8350, Email: hssreclms@ukzn.ac.za

I, IMAJA MATIYABU ITULELO, am a PhD student in the School of Management, IT and Governance, at the University of KwaZulu-Natal. You are invited to participate in a research project entitled *the Role of ICT to enhance Transparency in Public Funds Management in the Democratic Republic of Congo*.

The aim of this study is to find out from national, provincial and local levels perspectives, the prospects of using ICT, what it will entail for ICT to be implemented as a tool for transparency in public funds managements and the approach (framework) that should be adopted for effective utilization of ICT for transparency in public funds collection and allocation.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this research project. Confidentiality and anonymity of records will be maintained by the researcher and the School of Management, IT and Governance, UKZN. All collected data will be used solely for research purposes and will be destroyed after 5 years.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number_____).

The interview should take about 30 minutes/s to complete. Thank you for your time.

Sincerely

Researcher's signature _____ Date _____

IMAJA MATIYABU ITULELO

UNIVERSITY OF KWAZULU-NATAL
School of Management, IT and Governance

Research Project

Researcher: ITULELO MATIYABU Imaja, Telephone number: +243818279734, Email: imajaitulelo1@gmail.com

Supervisor: Manoj MAHARAJ, Tel: +27312607576, Email: maharajms@ukzn.ac.za

Research Office: **Humanities & Social Sciences Research Ethics Administration, Govan Mbeki Building,**
Westville Campus, Tel: 27 31 2604557, Email: HSSREC@ukzn.ac.za

CONSENT

I _____ (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

Additional consent, where applicable

I hereby provide consent to:

Audio-record my interview YES / NO

Signature of Participant

Date

APPENDIX D: Informed Consent Documents, French Version

UNIVERSITY OF KWAZULU-NATAL School of Management, IT and Governance

Monsieur Respondant,

Projet de Recherche

Researcher: IMAJA MATIYABU ITULELO, Telephone number: +243818279734, Email: imajaitulelo1@gmail.com

Supervisor: Manoj MAHARAJ, Tel: +27312607576, Email: maharajms@ukzn.ac.za

Research Office: Humanities & Social Sciences Research Ethics Administration, Govan Mbeki Building, Westville Campus, Tel: + 27 (0)31 260 8350, Email: hssreclms@ukzn.ac.za

Moi, IMAJA MATIYABU ITULELO, je suis doctorant au School de Management, IT and Governance de l'Université de KwaZulu-Natal, en Afrique du Sud. Vous êtes invités à participer à un projet de recherche intitulé Rôle des TIC pour améliorer la transparence dans la gestion des fonds publics en République démocratique du Congo (The Role of ICT to enhance Transparency in Public Funds Management in the DR Congo).

Le but de cette étude est de déterminer, aux niveaux national, provincial et local, les perspectives d'utilisation des TIC, ce que cela impliquera pour que les TIC soient mises en œuvre comme outil de transparence dans la gestion des fonds publics et l'approche (cadre) qui peut être adopté pour une utilisation efficace des TIC pour la transparence dans la collecte et l'allocation des fonds publics en RDC.

Votre participation à ce projet est volontaire. Vous pouvez refuser de participer ou de vous retirer du projet à tout moment sans conséquence négative. Il n'y aura aucun gain financier à participer à ce projet de recherche. La confidentialité et l'anonymat des dossiers seront maintenus par le chercheur et le School of Management, IT and Governance, UKZN. Toutes les données recueillies seront utilisées uniquement à des fins de recherche et seront détruites après 5 ans.

Cette étude a été revue et approuvée par le comité d'éthique de la recherche en sciences humaines et sociales de l'UKZN (numéro d'agrément _____).

L'interview devrait prendre environ 30 minutes / s à compléter. Merci pour votre temps.

Cordialement

Signature du Chercheur _____ Date _____

IMAJA MATIYABU ITULELO

UNIVERSITY OF KWAZULU-NATAL
School of Management, IT and Governance

Projet de Recherche

Researcher: ITULELO MATIYABU Imaja, Telephone number: +243818279734, Email: imajaitulelo1@gmail.com

Supervisor: Manoj MAHARAJ, Tel: +27312607576, Email: maharajms@ukzn.ac.za

Research Office: **Humanities & Social Sciences Research Ethics Administration, Govan Mbeki Building,**
Westville Campus, Tel: 27 31 2604557, Email: HSSREC@ukzn.ac.za

CONSETEMENT

Moi, _____ (noms complets des participants) confirme par la présente que je comprends le contenu de ce document et la nature du projet de recherche, et je consens à participer au projet de recherche. Je comprends que je suis libre de me retirer du projet à tout moment, si je le désire.

Consentement additionnel, le cas échéant

Je consens par les présentes à :

Enregistrement audio à mon entretien OUI / NON

Signature du Participant

Date

APPENDIX E: Gatekeepers Letter, English Version

January 24, 2018

To whom it may concern

PERMISSION TO CONDUCT RESEARCH AS PART OF THE PhD QUALIFICATION

It is a requirement of our PhD qualification that the student completes a thesis based on research in a specific field of study. In this way students are given the opportunity to creatively link and discuss the theoretical aspects of the programme to the practical issues facing organisations in real life settings. Typically, a thesis necessitates data gathering by the student by means of questionnaires and interviews.

IMAJA MATIYABU ITULELO (Student No. 215082073) has chosen to do a research project entitled:

THE ROLE OF ICT TO ENHANCE TRANSPARENCY IN PUBLIC FUNDS MANAGEMENT IN THE DR CONGO

Your assistance in permitting access to your organization for the purposes of this research is most appreciated. Please be assured that all information gained from the research will be treated with the utmost confidentiality. Furthermore, should you wish any result/s or findings from the research “to be restricted” for an agreed period of time, this can be arranged. The confidentiality of information and anonymity of personnel will be strictly adhered to by the student.

I am available at any stage to answer any queries and/or to discuss any aspect of this research project.

If permission is granted, please sign the attached form.

Thank you for your assistance in this regard.

Yours sincerely



Prof. M S Maharaj
(Supervisor)

APPENDIX F: Gatekeepers Letter, French Version

January 24, 2018

A qui de droit

DEMANDE D'AUTORISATION DE MENER UNE RECHERCHE DANS LE CADRE DE LA QUALIFICATION DE DOCTORAT

C'est une exigence de notre qualification de doctorat que l'étudiant termine une thèse basée sur la recherche dans un domaine d'étude spécifique. De cette façon, les étudiants ont la possibilité de relier de manière créative et de discuter des aspects théoriques du programme aux problèmes pratiques auxquels sont confrontées les organisations dans des contextes réels. Typiquement, une thèse nécessite la collecte de données par l'étudiant au moyen de Questionnaires et d'entretiens (Interviews).

IMAJA MATIYABU ITULELO (étudiant n ° 215082073) a choisi de réaliser un projet de recherche intitulé :

**LE RÔLE DES TIC POUR AMÉLIORER LA TRANSPARENCE DANS LA GESTION DES FONDS PUBLICS
EN RD CONGO**

Votre aide pour permettre l'accès à la Direction Provinciale de Mobilisation et Encadrement des Recettes (DPMER) et votre organisation pour les besoins de cette recherche est le plus apprécié. Soyez assuré que toutes les informations obtenues grâce à la recherche seront traitées avec la plus grande confidentialité. En outre, si vous souhaitez que les résultats de la recherche soient "limités" pour une période de temps convenue, cela peut être arrangé. La confidentialité des informations et l'anonymat du personnel seront strictement respectés par l'étudiant.

Je suis disponible à tout moment pour répondre à toute question et / ou pour discuter de n'importe quel aspect de ce projet de recherche.

Si la permission est accordée, veuillez signer le formulaire ci-joint.

Merci pour votre aide à cet égard.

Cordialement



Prof. M S Maharaj
(Supervisor)

APPENDIX G : GATEKEEPER'S CONSENTS

REPUBLIQUE DEMOCRATIQUE DU CONGO
PROVINCE DU SUD-KIVU
MINISTÈRE, DES FINANCES, DE L'ECONOMIE,
DE L'INDUSTRIE, DU COMMERCE, DES
PETITES ET MOYENNES ENTREPRISES,
ARTISANAT ET DES INVESTISSEMENTS
PROVINCIAUX

Bukavu, le 29 MARS 2018

AIR



Le Ministre

N/R/61.../CAB/MIN/EDD-FIN-INDU-COMM-PMEA-INVEST /SK/2018

Objet : Demande d'Autorisation de mener une recherche dans le cadre de la qualification de doctorat.
Accusé de réception

✓ A Monsieur le M.S Maharaqj. Supérieur,
C/P University of KWAZULU-NATAL Campus
Westville Afrique du Sud.

Monsieur,

Je suis en possession de votre lettre m'adressée depuis le 24 Janvier mais réceptionnée le 27 Février 2018 relative à l'objet en marge et vous en remercie.

Après lecture, j'ai retenu que vous me recommandez l'étudiant ITULELO MATIYABU IMAJA (Student n°215082072) pour lui faciliter les recherches en rapport avec sa thèse en préparation.

Je marque mon accord à votre demande et vous retourne le formulaire m'adressé à ce sujet dûment signé.

Veillez agréer, Monsieur, l'expression de ma considération distinguée.



David KWETA KISWA MABUNGANO

Avenue P.E Lumumba, n° 102^{ème} Commune d'Isanda Bukavu Province du Sud-Kivu

Consentement du Gestionnaire

Je soussigné Ratou KIRONGIRO, en ma qualité de Rapporteur de la société civile
donner la permission au nom de l'étudiant : **ITULELO IMAJA MATIYABU** (No. 215082073)
pour mener des recherches dans mon organisation/Entreprise.

L'étudiant PEUT / NE PEUT PAS (supprimer celui qui ne s'applique pas) utiliser le nom de
l'organisation dans la dissertation.

Signature du gestionnaire / propriétaire / portier:

Cachet de l'entreprise :



Date

01/06/2018

Gatekeeper's Consent

I David KWETHA KISWA in my capacity as Ministre Prov. des finances Sud-Kivu hereby give permission to Student name: ITULELO IMAJA MATIYABU (Student No. 215082073) to conduct research in my organization

The student MAY/MAY NOT (delete whichever is not applicable) use the name of the organisation in the dissertation.

Signature of Manager/Owner/Gatekeeper:

Company Stamp:



Date: 25th May 2018

APPENDIX H: ETHICAL CLEARANCE LETTER



20 August 2021

Mr Imaja Matiyabu Itulelo (215082073)
School of Management, IT & Governance
Pietermaritzburg Campus

Dear Mr Itulelo,

Protocol reference number: HSS/0911/018D

Project Title: The role of ICT to enhance transparency in Public Funds Management in the Democratic Republic of Congo

Amended title: The role of ICT in enhancing transparency in public funds management in the Democratic Republic of Congo

Approval Notification – Amendment Application

This letter serves to notify you that your application and request for an amendment received on 26 July 2021 has now been approved as follows:

- Change in Title

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

Best wishes for the successful completion of your research protocol.

Yours faithfully



.....
Professor Dipane Hlalele (Chair)

/ms

Humanities & Social Sciences Research Ethics Committee
UKZN Research Ethics Office Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Tel: +27 31 260 8350 / 4557 / 3587

Website: <http://research.ukzn.ac.za/Research-Ethics/>

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

INSPIRING GREATNESS

APPENDIX I: TURNITIN REPORT

My Dissertation

ORIGINALITY REPORT

9%

SIMILARITY INDEX

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