Digital Economy: Citizens Awareness and Expectations of E-Government in DRC

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Abstract:- E-Government provides with e-services to enhance the way citizens can interact with government agencies. Citizens are first consumers of public services as users of the systems therefore it is important to understand their awareness and expectations before implementing new services. In this research, we have focused on e-DRC practices. The research used the mix method approach. The qualitative study was conducted through literature review. At the same time, the quantitative study was conducted through a survey with 858 answers from citizens. The survey results from citizens was interpreted and e-services of their interest was listed down. A total of 26 services were suggested by respondents and clustered into 15 categories.

Keywords:- *ICT, Developing Countries, Democratic Republic of Congo, IT Services, E-Government.*

I. INTRODUCTION

Governments around the world are capitalizing ICT to enhance the ways they interact with citizens and businesses in order to meet the information society requirement. E-Government has been employed by developed as well as developing countries to be enabler toward accelerating processes, delivering a higher level of service to citizens and businesses, increasing transparency and accountability while lowering costs [13]. Unlike traditional way government delivery services, government are getting converted to e-Government where services are provided online so that citizen can access services wherever they are at anytime. Citizen can pay utility bills, file taxes, apply for job, renewing driver's licenses without visiting government offices.

Providing e-services is one thing but making sure that they are accessible to the citizen takes on greater importance. As many public sector agencies either have online presence or are implementing e-Government project, it is essential to assess their familiarity with current e-services and the potential benefits. E-Government should be socially inclusive otherwise it will only widen the digital divide among the strata of society. Modern technologies have the potential to create seamless [13], responsive, and citizen-centric system for the benefits of all including people with low income, low literacy level and people with disability. In the context of developing countries, many countries are still lagging behind. They design system intended to a privileged group. DRC e-Governments is at the first stage according to UN's e-G-government maturity model [6]. Most websites do not provide transactional services or interaction between public and private agencies. Only static information about the organization are provided in most websites. If people do not find what they need daily among the e-services provided, they will not use them and will not speak about them. To achieve the full public value for society from e-government, decision makers must understand the full scope of the transformation of public services [9]. Therefore, this paper study the status of e-government services awareness among the population as well as their perspectives of e-government. Besides, potential solutions are suggested in order to raise awareness. To accomplish the objective of the study, the primary research question was formulated as follows:

How familiar are citizens with available e-services and what do they say they want?

II. CONTRIBUTIONS TO PRACTICE AND THEORY

This study will enlighten the policy-makers and implementers of current or future e-services to either upgrade or develop systems based taking into account the wants of citizens in terms quality service and launch new services that will meet citizen daily needs. Besides, it contributes to knowledge on e-Government progress in developing countries, particularly in DRC. Furthermore, the research provides a framework to assist governments in enhancing e-government usage by leapfrogging the challenges of e-government service gaps.

III. LITERATURE REVIEW

A. E-Government Components

➤ *Four Key Dimensions of E-Government Which Reflects the Functions of Government itself are Identified [12]:*

- E-service: the electronic delivery of government services over the Internet;
- E-democracy: the use of ICT increases public participation in public decision-making process
- E-commerce: the electronic exchange of money for goods or services.
- E-Management: the use of ICT to improve the management of government from streaming business processing to maintaining electronic records to improving the flow of and integration of information.

B. E-Government E-Service Identification

➤ *E-Government Service Delivery can be Summarized into Continuum Four Stages of the Development Model [2]:*

- Informational Services: enable information search by citizens via internet. They include general information supplied to the user in the form of instructions or information enquired by the user.
- Interactive Services: These services can be understood as formal interactions between government and citizens in which communication is made two ways through online feedback, email, and so forth.
- Transactional Services: At this stage, the government can provide services through online transactions, such as enabling users to pay tax, traffic fines, apply for National ID cards;
- Integrated Services: With integration, government jointly collaborate with citizens as well as business on projects or processes etc.

C. Government-Citizen Relationship

Government is a set of institution working to improve life standard of the population by enacting policies in the economical, political, social, cultural context. The government is accountable to citizen they are ruling and is expected to continuously innovate, enable conditions for citizen enjoy life the most and participate in governmental decision-making process. In order to achieve this requirement, government can build infrastructure and road, schools, and other facilities, health care, subsidy and so on. This service should benefit all regardless social Stata including disadvantaged, groups. Government enable a seamless interaction with the population, ensure equitable share of public resources, transparent management, guarantee the security, trust etc..

D. Digital Divide

The digital divide is a dynamic and complex problem that is creating service gaps in developing countries particularly in the utilization of e-government services. It is the gap between people who have access to ICT and those who do not [9]. The digital divide reflects the lack of and/or limited access to electronic services by citizens. It is regarded as a significant barrier to the implementation and utilization of e-government since many communities and citizens do not have access to the internet and computing devices.

E. Maturity of Government Services in DRC

Maturity of the government was identified as the readiness of a government to engage and drive e-agenda and deliver the e-government. It includes the level of coordination and standardization and system readiness of the government, the level of usage in the organization, number of services available online and level of interaction between agencies [5]. Official statistics for DRC is absent, yet the Table 1 shows Democratic Republic of Congo's Online Service Index (OSI) according to the U.N. e-Government Survey Report [12]. Democratic Republic of Congo's Telecommunication Index (TII) at 0.0645 [12].

Table 1: Online Service Index [12]

COUNTRY NAME	WORLD RANKING IN 2018	OSI REGION AVERAGE
Democratic Republic of Congo	0.2083	0.3633

F. Citizen

Citizen maturity can be identified as the readiness of the citizen to participate in e-services given that it is available to them. Mobile cellular subscription per 100 inhabitants is at 43.3 percent in 2018 and Internet subscription is 5.9 percent while household with a computer is at 3.1 percent with a household using internet access at home of 3.2 percent as a result of low coverage of mobile phone lines [12]. In 2018, DRC's human capital index is at 0.5108 little above the regional averaged index of 0.4602 [11].

IV. E-DRC PRACTICES

The majority of the public sector organizations in DRC at least have presence on the Internet through a web site. Congolese Parliament, Presidency, Prime Ministry, some ministries and their affiliated organizations have web sites that present their administrative, duties, organizations, functions related news as well as information, announcements and communication facilities. DRC's e-government development is in its infancy stage as it is still in the phase where it seeks to integrate all services and information across agencies in one place- a national portal. The standardization of all forms and governmental materials are not yet made available online for ease of use of the citizen. This can

partially be explained insofar as the government websites are poor as many of them remain incomplete, unfinished (empty pages, lack of links with other government websites, etc.), often failing to update. They have fewer options of e-services to provide to citizen, hence, they fall short of meeting citizen daily needs. The web sites of the Congolese Presidency, Ministries and agencies were presented in the Table 2.

Table 2: Government Websites

Ministries	Websites
Presidency	https://presidence.cd/
Ministry of higher education	https://www.minesu.gouv.cd
Ministry of primary, secondary and vocational education	https://www.eduquepsp.education/v1/sige/
Ministry of Justice	https://justice.gouv.cd
Ministry of Agriculture	https://minagri.gouv.cd/
Ministry of Health	https://www.sante.gouv.cd:
Ministry of Youth and sports	http://minjsl.gouv.cd
Ministry of Economy	https://economie.gouv.cd
Ministry of Finance	https://finances.gouv.cd
Ministry of Budget	https://budget.gouv.cd
Ministry of Mines	https://mines-rdc.cd/fr
Ministry of Transport	https://transports.gouv.cd/
Ministry of Digital	https://numerique.gouv.cd/
Ministry of Commerce	https://commerce.gouv.cd/
Ministry of Interior	https://interieur.gouv.cd/ :
Ministry of Gender	https://www.mingenre-rdc.org/
Ministry of Cadaster	https://cadastre.gouv.cd/
Ministry of Urbanism	https://urbanisme-habitat.cd/
Ministry of Cooperation	https://cooperation.gouv.cd/ :
Post, Telecommunication, TIC	https://ptntic.gouv.cd/
Ministry of Hydrocarbon	http://hydrocarbures.gouv.cd/
Ministry of SMEs	https://padmpme.cd/
Ministry of Industries	https://www.minindustrie.gouv.cd/

The government's website, which contains the full list of Ministries and Government agencies and their website links is currently absent. Few websites provide with the administrative services online or pay utilities via the website.

V. METHODOLOGY

A. Mixed Methods Approach

Both qualitative or quantitative were used simultaneously given our broad view on the problem under study and it results were compared. The study involves citizens' awareness and perspectives of the e-Government. The analysis of information is clustered into different schemes in order to identify the precise framework and patterns. The survey results from citizens will be interpreted and e-services of their interest will be listed down.

B. Sample Selection

Our focused population contained students, professionals, administrative workers, entrepreneur, manager, unemployed. The group age will be from 16-45 because these age group people are more interested in new services and can have strong opinions about innovations. Our problem is related to citizen and their routines so it is important to enquire about their awareness and their wants towards e-services provided by the government. This will help abstract the user profiling needs including their required e-services.

C. Data Collection

The relevant e-Government researches, works, papers, journals, government reports, conference papers that are closely related to our study subject were used to collect qualitative data. The quantitative data was collected using the questionnaire (survey) leveraging both open-ended and closed ended questions, where citizens answered on questions related to their awareness of e-Government and e-Services systems in DRC. Citizens are first consumers of public services as users of the systems. This perspective has been chosen in order to provide a more comprehensive view of the situation in the country. This questionnaire was simple in understanding(written in French) and easy to respond. This will provide citizen's personal opinions including their expectations from the current and future e-services in a generic way. The survey was published from 1th of July till 5th of September 2022 and 1193 persons participated in the survey. The questionnaires had been distributed in two different ways: electronically through social network 'WhatsApp' and through traditional way(printout). The total amount of respondents who answered the survey were 1193. The figure 1 depicts the share of each way of data collection. After cleaning the datasets 858 records were retained. This happens in the view of several reasons. It is necessary to take into account that some of questions were specific to respondents who agreed to some prior questions, yet there were respondents who were not careful enough to such restrictions. For instant, some respondents answered all questions even the one that were not specific to them (e.g.

Some respondents checked they had never heard or used e-government but still answer the question "how often do you use e-services?"). That is why after cleaning our dataset, 335 (29 percent) of records were deemed outliers and were discarded to avoid a biased interpretation. The ratio between both data collection way is about 2 to 1 – Two answers in social network to one through a traditional way.
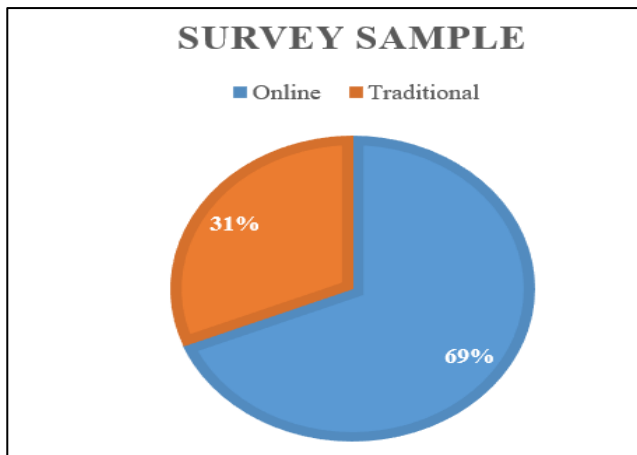

Fig 1: Survey Sample of Data Collection Medium

It was advantageous to use WhatsApp as it is one of the popular social media in DRC. All students and services have their WhatsApp groups where they share information and announcements. The survey used "Google Form" which is part of Google's web-based apps suite. It is a free online software that allows create surveys. The link was shared in WhatsApp groups, where respondents have to use their mail accounts for identification. Respondents were able to answer the questionnaire only once (but of course participant can take part twice or more times, if they have more accounts, but there is fewer chances they do so). The traditional way data collection was carried out during seminars and conferences. Besides, traditional way helped the population groups that are too often absent in the network to participate as well. The research aims and the definition of e-government were posted. Hence, the users made decisions to participate in this survey on a voluntary basis.

➢ *The Empirical Data Collected through a Quantitative Method of Data was:*

• Investigated citizens awareness of the existing e--Government services;
• finding-out the reasons for absent or limited usage of e-Services;
• Investigated citizens' expectations or public services they would like to be provided online.

The main questions, which can help to understand the awareness of e-Services in DRC are listed in Appendix 1.

VI. DISCUSSION AND SUMMARY OF FINDINGS

A. Discussion

The citizens' opinions and estimates, which were collected through survey questionnaire, will help analyze whether or not citizens are aware of available e-services including their perspective of future e-services. This will provide decision makers and IT implementers with necessary insight of features to improve current e-services as well as to consider in future planning to achieve the best results.

The questions 1,2,3,4 of the survey analyzed the demographic features of the respondents using descriptive statistical analysis. The ages of the respondents in the questionnaires and ways of getting answers presented on Figure 2. As we can see, the highest part of the answers, 528 (77,8 percent) was in age group between 16-25 years old in social media and 123(68,3 percent) in traditional way. This age group have the highest amount of answers in both the social network and traditional way. It can be explained with the statistics of internet users but also it is the age range of university students in DRC as far as this research is concerned. This finding can create some picture of potential future users (or, already users) of e-Government services as they have technology facilities and connection to Internet. All the respondents had at least higher education, bachelor's degree and there were no respondents that had solely a primary school or lower level of education.
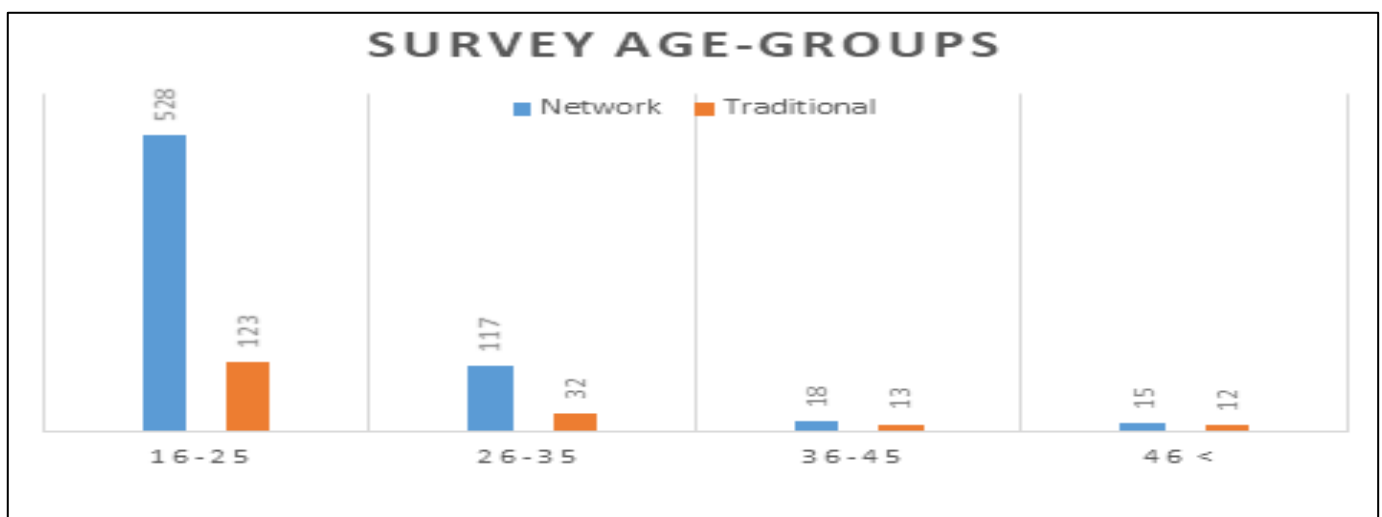

Fig 2: Comparison of Ways of Getting Answers and Respondents' Group-Ages

➢ *The Question No.5: How Often do you use the Internet?*

This question is open to all. 541 (63 percent) of respondents answered they use internet daily while 122 (14.2 percent) use internet less than 4 times a week. 134 (15.6 percent) use internet when needed. The 39 (4.4 percent) use "Monthly" while the choice "Never" did not apply to any respondents. The remaining did not choose any option. This shows that a large number of respondents have experience on internet and are active users. In addition, it highlights that the majority of citizens have cyber identity and are likely to get converted to e-citizen.

➢ *The Question 6: "Do You Know What E-Government Is?"*

Is the centerpiece of this survey which investigates on citizen awareness of e-services provision in DRC. The finding broadly shows that 639 (74.5 percent) of respondents have heard of e-Government or know little about it. About 174 (20,3 percent) never heard of it. The remaining did not respond to the question. Without abusing, we can assume that e-Government concept is not a uncommon concept in DRC. Citizen are aware of ICT can be used to deliver public service. Further questions will help confirm where they know about it all along or from the definition provided on the survey.

➢ *The Question No.7: "How Did You Hear of it?"*

This question tried to investigate the medium through which respondents who said "Yes" on question 6 (74.5 percent), heard of e-government. The survey reveals that 453 (71 percent) of respondents heard of it from government websites, may be by searching key words on internet. 105 (16.5 percent) heard from advertisement on TV. The remaining checked "a person told me" or did not check. This means that government poorly sensitize on available e-services which restrain the awareness-hence the usage. Campaigning on ICT using mass media like radio or television will help reach out a large strata of society including marginalized groups.

➢ *The Question No.8: "Have You Ever Used Any of the Government's Electronic Services?"*

This question is intended to respondents who said "Yes" on question 6 (74.5 percent). The survey reveals that among those who have heard of government e-services, 389 (61 percent) said they have not used any of them while 166 (26 percent) said they have used at least once. The remaining did not respond, may be they were not so sure whether they have used it or not. Also there were not a "Not sure " choice in the survey questionnaire for this question. Besides, the researcher abstains from misinterpretation to distinctly conclude whether the 61 percent who said "No" have ever used unknowingly or they really never used it. May be some still refer to e-service to its transactional or interactive approach only or may be the definition of government is not well understood.

➢ *The Question No.9: "Which Service Do You Use Most Often?"*

This question is intended to respondents who agreed they have used e-government services. Almost 123 (74 percent) search information about government institutions, statistics and documents. This can be explained as most

respondents are students, they use it for research purpose. Also, about 4(2,4 percent) of respondents download forms or videos or audios. None of respondents have used online payment service. The remaining either selected "others" or did not answer.

➢ *The Question No.10: "How Often Do You Use E-Government Services?"*

The question is restrictive as it is applicable only to respondents who said "Yes" to question Number 8. It investigates on the frequency of respondents' usage of the e-services. In another way, the question seeks to know how familiar are respondents with e-services. The survey shows that among those who use e-services, 121 (73 percent) use them when needed. According to the author, "when needed" is not specific, it stands for "once in a while" or "when it please to me". 11(6.6 percent) of respondents use them daily. 13(7.8 percent) say they use monthly. It is clear in the view of this figure that when respondents connect to internet, government websites are not their common destination.

➢ *The Question No.11:"The Information Of Websites Is Useful"*

This question is intended to those who said "Yes" on question 8. It investigates on the relevancy of information on websites. The survey shows that 67 (40,3 percent) of respondents selected "strongly disagree" or "disagree" to this statement. Only 18(11 percent) of respondents selected "agree" that information on websites meet their intended need. The remaining are "not sure".

➢ *The Question No.12:" What Are Reasons Behind Distrust?"*

This questions highlights the phenomenon in the previous question 8 about respondents who are aware of the existence of e-Government but can't use them. The survey reveals some reasons behind this. Around 143(36,8 percent) of respondents advocate they are not interested in using e-services although they know their existence. 44 (11,3 percent) say they don't trust online services especially when it concerns online payment. 158(40,6 percent) say they don't have adequate equipment (May be they alluding they don't have a computer or adequate smart phone). The remaining of respondents did not answer. There is a need for government to build interest and trust in terms of quality e-services and security in order to break down cultural resistance change issue. Campaigning on ICT and their benefits remain one of the critical solutions.

➢ *The Question No.13: "How Do You Often Perform Public Administrative Tasks?"*

This question is intended to all participants in the survey. It investigated how citizens perform administrative duties. It goes without saying that the 818(95 percent) of participants including those who are aware of e-services, prefer to visit government offices rather than e-Services. It is worth clarifying that, when it is about collecting information for research purpose, citizens choose to visit some online websites, but when it concerns public utilities such as apply for certificate, pay utility bills etc., they prefer to visit government offices. This broadly give insight to the

resistance to change or cultural issue in the mindset of citizens. On the other hand, as mentioned previously, the e-government in DRC is in it infancy stage—meaning it has not achieved the third level of UN maturity which includes features like: Uploading forms/documents, online payment, Applying for certificates and licenses etc. [12]. This justifies that in addition to cultural resistance to change, the available e-Government provision do not meet citizens daily needs.

➢ *The Question No.14: "Please Suggest Quality Features For Future E-Services"*

All participants in the survey could answer this question. It inquires about citizens wants in terms of quality services. The Table 3 lists down e-services qualities demanded by citizens and the number of times they repeated.

Table 3: Suggestions of E-Government Quality Services

Quality Service	Repeated times
Regular updated of websites	46
Provide official information including document about government to for research purpose	54
Easy to use	32
Local languages	58
Online form	3
Downloadable files(Audios, Videos)	17
Have notifications of new posts	4
Financial transaction using Mobile Banking(MPSA, etc)	51
Quick feedback	1
High speed broadband	105
No crash when using	20
E-Portal	24

High speed is the most required e-service It's goes without saying that 'high speed broadband" is a challenge in most developing countries. To access e-services, citizens needs quality internet broadband. Citizens would like also to have websites in local languages. Yet, none of government websites provides content in local languages. In DRC, the official language is French language. Yet, it is restricted to a strata of educated people. Consequently, providing e-services in international languages will only benefit only the "privileged group ", hence widening digital divide. Also, there is a need to leverage mobile banking (like MPSA, Orange Money etc.) for financial transaction rather than bank account. According to [11], Mobile payment helps with financial inclusion in African countries, where many people still don't have bank accounts.

➢ *The Question No.15: "Name Websites That You Use Most Often"*

This question is intended to those who said "Yes" on question 8. It Allowed to know government websites that respondents use the most. The survey shows that Media Congo (https://www.mediacongo.net) is the most visited website with 122 respondents. It is famous for online job application. It can be justified as the first insofar as students—who are the majority of this survey are also job seekers either part time or full time especially those in final year who would desire to find their potential job after graduation. The ministry of higher education website is ranked second. This goes without saying as almost all respondents are college students as well. Figure 3 shows popular websites used by most citizens.
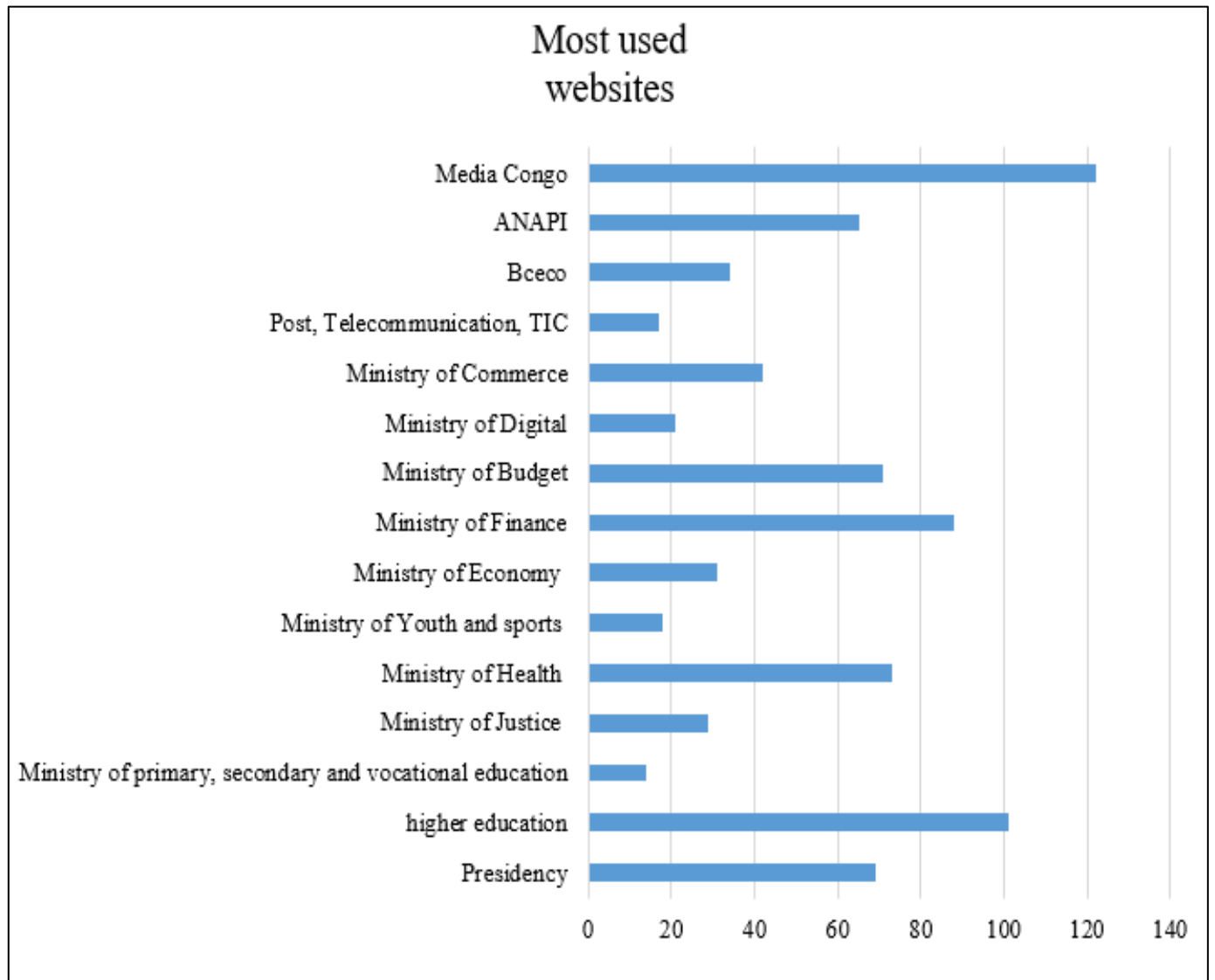
Fig 3: Most Used Websites

➢ *No.16: "What Government Service(S) Would You Want To Be Electronically Provided?"*

The question is intended to all participants in the survey without restriction. The survey depicts that citizens are willing to get converted to e-citizen though lot of websites are available but still their usage is not so common. Knowing what citizens wants is key to successful implementation of e-Government provision. The following Table 4 lists down the e-services respondents would like to be provided electronically. A total of 26 services were suggested by respondents and clustered into 15 categories. The number of times e-Services were repeated by different respondents is also provided.

➢ *The Responses were Collected and Clustered as Follows:*

Table 4: Suggestions of E-Services

	Services	Service Type	Repeated times
	Education		
	Online Admission And Application	Informative, interactive	14
	Online Librairies	Informative	27
	Educational Information, application And Results	Informative, interactive	23
	Online Education (Blended Learning)	Interactive	14
	Paying Educational Fee	Transactional	24
	Teacher Online Assistance	Informative, interactive	13
	Taxation		
	Taxation Services	Informative, interactive, transactional	8

Utility Bills		
Paying Household Bills	Transactional	42
Passport		
Renewing and Issuance Passport	Transactional	32
Jobs Application		
Job offers and application	Informative ,Interactive	63
National Id Card service		
ID Card application, Issuance and Renewal	Transactional	10
Voting Service		
Voting Card application, Insuance And Renewal	Informative, interactive	29
Voting on Internet	Transactional	42
Municipality services		
Getting Citizen Related Documents	Transactional	14
Birth/Death/Mariages services	Informative, Interactive, transactional	31
Vehicle		
Car Registration And Confirmation	Transactional	29
Applying for Licences		
Application, Issuance and Renewal of Driving Licences	Interactive, Transactional	36
E-democracy		
Complaint About Different Government Services	Interactive	5
Information Regarding Public Expendature	Informative	21
Emergency call	Interactive	3
Trip		
Booking Ticket/Car/train/Airline	Informative Transactional, interactive	23
Trip Information	Informative	12
Transportation		
Public Taxi/Bus Services	Informative Transactional, interactive	11
Public Utility		
Information Regarding Public Places	Informative	4
Online Shopping From Government Utillity Stores	Informative Transactional, interactive	37
Justice		
Judicial record certificate(application, issuance, renewal)	Informative, Transactional, interactive	10

The survey points out that education is the most wanted category service. This can be explained as the majority of respondents are students. Students are parts of the social groups who are critical about social concerns. They are aware of quality studying conditions in developed countries that they would like be applicable to them as well. The job application is ranked second. The table is self-explanatory for further analysis.

B. Summary of Findings
The summary of survey can be viewed and interpreted as follow

Table 5: Summary of Findings

Area	Main Findings	Interpretation
Internet Usage	63 percent use internet daily and 14.2 percent use alternately	This shows that a large number of respondents have experience on internet and are active users. In addition, it highlights that the majority of citizens have cyber identity and are likely to get converted to e-citizen to consume e-Services provision.
E-service awareness and usage	74.5 percent of respondents have heard of e-Government or know little about it. Of the 74,5 percent—26 percent said they have used at least once while 61 percent said they have not used any of them. Of the 61 percent, around 36,8 percent of respondents advocate they are not interested in using e-services although they know their existence. 11,3 percent say they don't trust online services especially when it concerns online payment. 40,6percent say they don't have	We can assume that e-Government concept is not an uncommon concept in DRC. Citizen are aware that ICT can be used to deliver public service efficiently. The survey shows that very few are using e-Services provided. Based on e-services suggested by respondents, it clear that though citizen have internet experience, there is service gap in terms quality e-services as well as transactional services. Few websites provide transactional services.

		adequate equipment. The remaining of respondents did not answer. About 20,3 percent never heard of it. The remaining did not respond to the question 73 percent use e-Services when needed. 6.6 percent of respondents use them daily. 7.8 percent say they use monthly.	Almost all respondents prefer to visit government offices despite e-Services provisions. Cultural resistance to change issue is also one of the reason behind distrust. Besides, It is clear that when respondents connect to internet, government websites are not their common destination.
	Intention	61.5 percent of the set of respondents have on average at least either suggest e-services or service quality	This highlights that respondents acknowledge the rationale of e-Government and have expectations in terms of quality e-Service or service provision

VII. SUPPORTING ACTIONS

E-Government is primarily concerns citizens and citizens have lot of expectations from government. The current e-DRC practice is in its infancy stage. Full transaction services to achieve a maturity stage is not reached yet. Therefore, the government should start thinking more strategically about how e-services can play role in the enhancement of productivity and use of information in the public sectors at larger extent. Based on the survey, some policies are suggested in order to raise citizens' awareness about e-Government usage and meet citizen's expectations as far as the government concerned:

➢ *For Mature Citizen:*

• Creating a Community Online Access Centres for training programs and Citizen awareness training programs along with certain benefits for promotion and increased usage of these e-services;
• There is a need to need organize basic IT training programs focusing on disadvantage groups in order to bridge digital divide. Besides, target groups like unemployed, women, elderly or low income, rural citizens should be prioritized.
• Technical, structural and strategic skills needs fostering;
• The Telecommunication Action Plan for Remote Indigenous communities, has the potential to increase the variety of information, communication, and educational service;
• The Telecommunications Action Plan for Remote Indigenous Communities, has the potential.

➢ *For Citizen Awareness*

• Use TV, radio and newspapers for direct marketing campaigns to raise awareness and attention of the general public with the available e-services [5].

➢ *Raise Citizen Involvement*

• There is a need for government to build interest and trust in terms of quality e-services and security in order to break down cultural resistance change issue.
• User prototyping and profile is one of the building blocks of e-Government implementation. Implementers of e-Governments do not involve citizens in perspectives in the design phase. As a result, they are likely to implement e-services schemes that do not meet user acceptance and

satisfaction. The designers of e-Government systems assume to know all the needs and expectations of the users in advance hence, at times they resist the adoption of e government services provided.

➢ *For Mature Government E-Services:*

• There should be one portal for all the government departments.
• E-services provided by the government should be user-centric in order meet citizen daily needs by providing e-Services not only in the informative way but also transactional way.
• Encourage IT content in local languages and citizen ease of use should also be considered;
• The official websites of the DRC should be resourceful at all levels of political, economic, social, cultural, environmental life, etc [1].
• Benchmark successful model in some countries advanced in e-Government service delivery like South Korea, Australia, Estonia and share experience.
• System integration is lacking in e-Government systems as most systems exist in 'silos'. There is a need to achieve the full maturity model provided by the UN.

➢ *Support IT Penetration:*

• Establish "IT equipment tax reform" by giving tax incentives for IT equipment penetration.
• Instead of subsiding cost of broadband build-out, give incentives to ones that will invest in rural areas [5].
• Low cost internet utility;
• Support the penetration of access through a Public Internet Access Points (PIAPs).
• Develop community programmes that offers recycled computers on low incomes.

VIII. CONCLUSION AND RECOMMENDATIONS

The key reasons to implement is to increase efficiency, effectiveness and satisfaction in public service delivery to citizen and businesses. To this purpose e-Government is expected to be responsive, resourceful and convenient rather than stand still. Besides, supplying new services is not enough, the necessity to create enabling conditions to influence consumption and access during and after the implementation phase takes on greater importance especially in countries with poor digital culture. This research was conducted through a literature review, where surveys with

more than 858 answers from citizens through both traditional and online way. Citizens awareness of available e-services was analyzed through series of questions, including their expectations in terms of quality and services. The paper collected some public services citizens expect digitalization. A total of 26 services, classified into 15 categories. At the same time, another point from this research discovered that only few know e-Government concept though they consume services. To this purpose, this paper studied the status of e-Government services awareness among the population as well as their perspectives of e-Government. The opinions and estimates of citizens', which were taken through surveys have helped to analyze which factors are critical and which aspects are influencing on this process from their point of view. It was difficult to access suggestions from the whole Congolese population including those living other cities. The study focused on students from two prestigious universities -- the university of Kinshasa and the Institut Superieur de Commerce. There were about 858 replies. Although it is a small set compared to the Congolese population (estimated over 90 million) yet, the selected groups are active as they are students, business holders, administrative works, they need public information or services either for research or business duty, so they can have a strong opinion on the topic. A total of 28 services were suggested and clustered into 15 categories. Thus, the conclusion and suggestions provided in this paper are significant. In response to every question citizens respond varyingly. We described the response against every question which depicts different features. The factors highlighted by participants and the researchers, have given the opportunity to formulate and structure a picture of the potential critical factors in implementation process.

IX. LIMITATIONS AND FURTHER RESEARCH

In this paper, the factors enhancing awareness of e-government service were proposed. The survey is not intended to provide a complete picture of the actual awareness and expectations of e-services in DRC. it rather provides an overview of particular awareness and e-services expectations from certain population. It is hard to conclude that the factors revealed in this study are conclusive. Furthermore, this study was focused on the urban population in Kinshasa (the capital city) where the population is presumed to have access to the internet and experience in the use of e-Government services. Further research should include the marginalized communities. In addition, it is worth mentioning, the work we did is a pilot study. This can be extended in the future to find e-Literacy of citizen by comparing factors for example gender, urban include the marginalized communities, etc. can be discussed individually to raise literacy rate and bridge the digital divide as e-Inclusion remains a challenge in DRC.

REFERENCES

[1]. Al- Mushayt et al., (2012). Electronic-government in Saudi Arabia: A positive revolution in the peninsula Chen, L.-Q. (2002). Phase-Field Models for Microstructure Evolution. Annual Review of Materials Research, 32(1), 113–140. https://doi.org/10.1146/ANNUREV.MATSCI.32.112001.132041

[2]. DRC Stats (2020). Indice de développement des TIC de 2020: Proposition ; Retrieved from Congo, Democratic Republic statistics Human Capital-World Bank :www.worldbank.org/human capital; Tuğba, İ. (2004). Evaluation of readiness of turkey for e-Government.

[3]. Nesterenko M. (2014). Implementation of E-Government services: Analysis of factors in case of Ukraine Shahzad , H. &Sandhu, W.(200 7), E-government services in Pakistan Pujan, Z. (2013). Challenges and issues of ICT industry in developing countries based on a case study of the barriers and the potential solutions for ICT deployment in Iran.

[4]. Rashed, M. & Abdul W. (2007). E- government services: a case study of DC office Laxmipur, Bangladesh.

[5]. Staistica (2020). Number of mobile cellular subscriptions per 100 inhabitants in the Democratic Republic of the Congo from 2000 to 2020. Retrieved from statisca; https://www.statista.com/statistics/501992/mobile-cellular-subscriptions-per-100-inhabitants-in-democratic-republic-of-congo/

[6]. UNDP(2020), Human Development Report (2020). Human Development and the Anthropocene of Congo (Democratic Republic of the).

[7]. World Bank (2020). Democratic Republic of Congo: Education Sector Public Expenditure Review. An Efficiency, Effectiveness and Equity Analysis. Washington, DC. Retrieved from World Bank organization: http://documents.worldbank.org

APPENDIX 1
Questions and answers in the survey

Dear Sir/Madam,

Thank you for your willingness to participate in this survey. I am Joseph NGWABA, Teaching Assistant and researcher at the university of Kinshasa. This survey is conducted in the context of my research in the field of "electronic government in DRC".

Definition of electronic Government (online administration): it is any public service online (or accessible on the Internet) available on a website of a public entity (presidency, ministry, public agency, etc.). ex: registration with a public institution, passport application, ID card application, payment of bills or taxes, driving license application, any information on state management or public expenditure, etc.

Note that the information collected will remain confidential and will be used exclusively for the purposes of this study. Please read each statement carefully and respond to the best of your ability.
Thanks!

Questions	Answers
gender	Male
	Female
Age range	16-25
	26-35
	36-45
	46-55
	More than 55
What is your highest level of education?	High school diploma or specialized education
	University student(Currently)
	Higher education or Bachelor degree(if completed)
	Master degree or PhD degree
Which of the following categories best describes your occupation?	Entrepreneur
	Manager
	Administration worker
	Student
	Lecturer(Junior, Senior, professor)
	Other
How often do you use the internet?	Daily
	Less than 3 times week -
	Monthly
	When needed
	Never
Do you know "electronic administration?" If Never, go to question 14,15,16,17	Yes
	A little bit
	Never
How did you hear of it?	A person told me
	TV ads
	On government website
	Other
Have you ever used any of the government's electronic services? If No, go to question 13, 14,15,16,17	Yes
	No
Which service do you use most often?	I search information and statistics
	I download forms
	full application including online payments
	Other
How often do you use e-Government services?	Daily
	Less than 3 times week -
	Monthly
	When needed
	Never
the information of websites is useful	Disagree

	Not Sure
	Agree
	Strongly agree
	Disagree
:What are reasons behind distrust?	I don't have adequate equipment to access
	I don't trust online service including online payment
	Not interested
(13) How do you often perform public administrative tasks?	Strongly disagree
	Disagree
	Not Sure
	Agree
	Strongly agree
How do you often perform public administrative tasks?(to all)	Visit government offices
	Telephone
	Postal services
	Fax
Please suggest quality features for future e-services	
Please add one or more services that you consider useful to be provided online? (as many as you want)(to all)	