GOVERNMENT PROCUREMENT OF DIGITAL TECHNOLOGY SYSTEMS (DTSS) IN AFRICA

Liberia Country Report

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Contents

Acronyms

PPCC	Public Procurement and Concession Commission
PPCCA	Public Procurement and Concession Commission Act
LNP	Liberia National Police
LTA	Liberia Telecommunications Authority
FOIA	Freedom of Information Act
MFDP	Ministry of Finance and Development Planning
NIR	National Identification Registry
NBIS	National Biometric Information System
NEC	National Elections Commission
LIS	Liberia Immigration Service[1]

[1] Formerly the Bureau of Immigration (BIN)

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Executive Summary

Introduction

This study focuses on the acquisition and use of digital technology systems in Liberia. It sought to assess the public's awareness of and their reaction to the government's procurement of these systems in Liberia. The study also looked at the availability of a legal framework that govern the use of DTSs especially as it relates personal data collected and stored by such systems. How information related to DTSs are available outside urban areas was also assessed.

The study more generally sought to understand the following: (i) what digital technologies are being procured by governments; (ii) the purposes for which these technologies are procured and the circumstances that trigger their procurement; (iii) the processes which these procurements follow; (iv) the laws that relate to procurement and use of digital technologies; (v) the different perceptions of public and civil society on procurement of digital technologies; (vi) the safeguards to privacy, security, inclusion and individual control in the procurement and use of digital technologies.

Methodology and methods

This study focuses on Liberia. It used key stakeholder interviews, and an in-person and survey data collection methodology gather information. Key informant interviews primarily focused on acquiring information on DTS usage from relevant government and other stakeholders on how DTSs are procured and used in Liberia. The in-person data collection was carried out in the five most populous counties of Liberia.

Findings from the study

- *Public knowledge of DTSs*

  All key stakeholders interviewed for this study clearly understood the procurement process required under Liberian law. They demonstrated knowledge that there were no separate procurement rules for DTSs that there are no separate rules for procuring DTSs. The majority of those surveyed in the general population had very limited understanding of the procurement process.

Most ordinary people do not know about laws and policies that govern the procurement process in Liberia. With a definition, many of the people interviewed knew what a DTS is, though very few of them had any direct interaction with any such system.

Gender was not a determinant in whether a person knew about the existence and use of DTSs in Liberia. Education and whether someone lives in an urban area, on the other hand, were factors in determining whether they knew about DTSs or not.

- *Purpose of procuring DTSs*

  Digital Technology Systems are not widely used in Liberia. Very few government agencies have deployed DTSs as part of their operations. Notable among such government institutions is the Liberia Telecommunications Authority, National Identification Registry, Liberia National Police, Liberia Immigration Service, and the Ministry of Foreign Affairs. Most of these have deployed biometric readers. The biometric readers have been primarily used for human resource management purposes, issuing travel/ID documents or processing travelers.

- *Types of DTS being Procured*

  The technology most commonly being used by Liberian government agencies is biometric readers. Procurement plans from the government's procurement agency's report on the purchase of goods and services between 2016 and 2021 show that hardly any money was spent by government on the acquisition of DTSs. An open-source facial recognition software technology was deployed by the National Elections Commission to weed out double voter registrants during the 2017 and subsequent elections. Surveillance capabilities in the form of CCTV cameras were acquired by the police force.

- *Who is Procuring?*

  A few government agencies have procured DTSs. Chief among these is the Liberia National Police that acquired and deployed surveillance cameras. Some other agencies like the Ministry of Foreign Affairs, the Liberia Immigration Service, the National Identification Registry, and the Liberia Telecommunication Authority were found to have deployed biometric technology for a variety of reasons.

  From the country's budget and various agency procurement plans published by the government, Liberia has invested very little in acquiring and deploying DTSs. The study found that budgetary allocations meant for the acquisition and maintenance technology systems and equipment steadily dwindled over the past five years.

- *Sources of funding for DTSs*

  The main source of funding for the procurement of DTSs in Liberia is the country's national budget and a small amount of donor funding. Budgetary allocation for the purchase of technologies in Liberia, saw a steadily decline over the 2016 – 20121 period.

  Liberia has experienced budget shortfalls for every year over this period. The government, struggling to meet is wage obligations, have eliminated certain capital expenditures with technology featuring high in such cuts. Donor funding for technology systems was found to be provided by the European Union for setting up a database for criminal investigation purposes as part of support to police agencies in the West African sub region.

- *Procurement Processes and methods*

  The study found that there are no separate procurement rules or procedures for the acquisition of digital technologies in Liberia. The country's public procurement laws will apply to all such purchases. Under the PPCA, all procurement agencies are required to have a procurement committee. They are also required to submit procurement plans at the beginning of each budget year. Theoretically a spending agency is not allowed to procure goods and services if it fails to submit such a plan.

  Depending on the amount of money involved in a bid, different rules apply on whether the specific bid can be single sourced, opened for international competitive bidding, or get PPCC approval to proceed.

- *Safeguards to privacy, security, inclusion and individual control in the procurement and use of* digital technologies

  The National Identification Registry Act gives the NIR the authority to make rules for data protection. Yet, no such rules have been promulgated by the Registry. The country's freedom of information law also provides for data protection on privacy grounds. The countries criminal code makes illegal surveillance a crime punishable by imprisonment. The Ministry of Post and Telecommunication is currently leading efforts to enact a cybercrimes statute that aims to regulate how people use the country's computer infrastructure. It is not clear how this will impact data privacy.

- *Disclosure of procurement*

  There are not clear records of the procurement of DTSs available from government agencies. A scrutiny of procure plans published by the government's procurement agency shows no purchase of any form of DTSs over the four years leading to 2021. Even the acquisition of biometric readers and surveillance cameras by government agencies over the same period was not reflected in those records.

- *Laws that relate to procurement and use of DTSs*

  There are no specific laws that govern the procurement of DTSs in Liberia. The Public Procurement and Concession Act applies to the procurement of all goods and services by government.

  This includes DTSs. As of the writing of this report, there are no actions been taken to amend the countries laws to create specific provisions for the procurement of DTSs. There are discussions on the way on the introduction of a Cybercrimes law. There is already a draft of the Cybercrimes law which has undergone extensive public vetting. The Ministry of Post and Telecommunication which has led the process of crafting the draft Cybercrimes law is expected to submit it to the Liberian legislature.

  Recommendations

- There is a need for more publicity around the country's procurement laws and policies.
- There is a need for the government to commence public consultations geared at establishing a legal regime on the importation, procurement and use of DTSs in Liberia.
- Policies around data privacy must be crafted.
- Government documents like the National Budget and procurement plans disclosed to the public should be released in user friendly formats.
- Government should communicate its procurement policies and actions more to the public with the view improving public trust in its activities.
- Government should adapt user friendly formats for information it releases to the public.

Introduction

1.1 Study aims and objectives/Research questions

This study aimed to gauge public awareness of digital technology systems in Liberia. It also seeks to assess the public's perceptions on the government's expenditure on DTSs. The study further seeks to evaluate public perception regarding the legal framework that govern government procurements of digital systems, privacy regarding data collected by the systems, and the use of such systems. The study also assessed the access to information about DTSs in rural, peri-urban and urban areas.

1.2 The Research Problem

As digital technologies become more ubiquitous around the world, many African countries are joining the revolution to acquire and use these technologies. While these transformations are ongoing, there have been concerns that the purpose and purposes for the acquisition of these technologies present varying opportunities and challenges for the various societies. The research seeks to assess the procurement culture that currently exist around digital technologies, the legal regimes that exist that govern their acquisition, and the extent of knowledge that people in Liberia possess regarding digital technologies.

Country Context

2.1 Trajectory and Proliferation of Digital Technology Systems in Liberia

Liberia emerged from two brutal civil wars in 2006 with the restoration of democracy in the country with its election of Africa's first democratically elected female head of state. While Mrs. Sirleaf's election in November 2005 and her subsequent inauguration in January 2006 signaled the end of the country's civil strife, it ushered a period of renewal as the country had lagged the rest of the world in development goals during the period of its wars. She signaled her intention of relying on ICTs as the basis of Liberia's development.[2]

[2] Michael L Best and others, 'Post-Conflict Communications: The Case of Liberia' (International Perspectives 2007) 1–2 <https://cpb-us-w2.wpmucdn.com/sites.gatech.edu/dist/e/965/files/2018/12/p33-best.pdf> accessed 5 May 2021.

While the country's ICT situation has comparatively improved since her declaration, it is still far from ideal.

About eight years before Mrs. Sirleaf was inaugurated president, mobile phone technology was introduced into Liberia. Around the same time dial-up internet was introduced. This was quickly followed by the introduction of satellite-based internet connectivity. The use of other digital technologies was few and far between though close circuit television (CCTV) systems continued to be used in the banking sector and some government and private institutions.

By 2008, the government introduced biometric passports which required the taking of fingerprints as part of the passport issuance process by the Ministry of Foreign Affairs. At the same time, the Bureau of Immigration (BIN)[3] started using biometric readers at Liberian airports to process arriving and departing travelers.

In 2011, the country established the National Identification Registry (NIR). The NIR is meant to design, establish, maintain, and administer a national biometric identification system by collecting information about individuals that cover all forms of human physiographic features. It is authorized to establish a National Biometric Information System (NBIS) for Liberia. The Act gives the NIR the authority to "design, establish and/or 'acquire the technical infrastructure and control procedures that will serve as the platform for implementation of the NBIS".[4]

Though tasked with the responsibility of establishing rules and procedures for collecting and administering control over biometric data in Liberia[5], the NIR has largely operated just as an institution that issues biometric ID cards to Liberian citizens as a means of establishing a registry of all Liberians. The Act also authorizes NIR to acquire "all necessary equipment" relevant to its work. This is a wide-ranging power that could be abused, but for now it goes unused.

In November 2020, the Liberia Telecommunications Authority signed an MOU with the countries two mobile phone companies requiring every people on those networks to us only the national ID card given by the NIR to register or re-register their SIM cards.[6]

[3] The Bureau of Immigration is now called the Liberia Immigration Service (LIS).
[4] National Identification Registry Act 2011 7, s 3.1a.
[5] ibid 3.2e.
[6] Henry Karmo, 'Liberia: LTA, NIR, Lonestar MTN, Orange Liberia Launch New SIM/ Ruim Card Registration System' (*allAfrica.com*, 3 November 2020) <https://allafrica.com/stories/202011030218.html> accessed 2 June 2021.

The MOU seems to have changed the LTA's previous regulation which gave the NIR the role of verifying the government issued ID documents presented for the registration of SIM cards.[7]

2.2 Literature Review

Liberia is still at the very early stages of the deployment of digital technology systems. The most common types of DTSs in use are CCTV cameras and biometric fingerprint readers. The banking sector is the main sector that uses CCTV systems. Several government institutions and other private organizations also deploy CCTVs as a security measure. The Liberia National Police (LNP) in 2016 deployed surveillance cameras at certain places in Monrovia. The purpose of the cameras deployed by the LNP to enhance security around the capital and to also monitor its officers. With the change of government in January 2018, the LNP discontinued its CCTV monitoring system.

An expert who worked on the project told the researcher that the cameras deployed by the LNP had no facial recognition capabilities. The expert note that Liberia has not gotten to the stage of creating the requisite database that will enroll people to make facial recognition an effective monitoring tool. While facial recognition capability remains low, at least one private office in Liberia has a facial recognition system that allows its employees to access its premises. A few organizations, including government institutions have biometric readers that are used as human resource management tools to help their employees access their premises and sign in and out of work.

[7] Amended SIM Card Registration Regulations 2020 4.

Methodology

3.1 Study design

- **Study areas**

  This study focuses on Liberia. The research relied on key stakeholder interviews, in-person data collection through surveys, and an online data collection which involved sending the survey links to people. The in-person data collection was carried out in five of Liberia's 15 counties. Namely Montserrado, Bong, Nimba, Grand Bassa and Margibi.

- **Study population**

  Montserrado, Bong, Nimba, Grand Bassa and Margibi counties are home to more than half the country's population. A total of 200 respondents were interviewed for the in-person surveys, while the same number of people were target for the online version. The interviews proposed for the key stakeholder's sampling was 15. Only eight interviews were done for the key stakeholder aspect of the data collection.

- **Sample size (qualitative and survey)**

  The sample size for the survey was 400 respondents. Two hundred of these were interviewed in-person, while the remaining 200 were surveyed online. The below chart shows the distribution of the in-person interviewees and the counties in which they were interviewed.

County	City	Sample size
Bong	Gbarnga	20
Montserrado	Monrovia	120
Nimba	Ganta	20
Grand Bassa	Buchanan	20
Margibi	Kakata	20

Total		200

- **Methods of data collection** (each discussed including number and categories of people interviewed, documents reviewed, and categories will also be mentioned; Filing of Request for information by agency and information requested will also constitute a method)
  The study targeted the collection of data by interviewing 20 key stakeholders, carrying out an in-person survey for 200 people in five of Liberia's most populated counties, and by administering an online survey to 200 people. While all the in-person and online surveys were completed, just about a third of the key stakeholder surveys were completed. The study reviewed Liberia's PPC Act, the PPCC Act, PPCC Regulations, the Freedom of Information Act, Penal Law, news publication, National Identification Registry Act, the Draft Cybercrime Act, Liberia's Information and Communications Technology Policy, the Liberian Budgets for fiscal years 2016/2017 to 2020/2021, and procurement plans submitted by spending entities to the PPCC.

- **Filing of Information Requests**
  No formal information requests were filed in writing during this study.

  All requests for documents were made informally made to key stakeholders that were interviewed. Where documents were available, they were made available to the research in a relatively short time.

- **Data processing and analysis**
  The study relied on the collection of both qualitative and quantitative data. Several interviews of specialists were conducted. Each of these interviews were recorded and subsequently transcribed. Data entry and transcribing team compiled the data related to both aspects of the research. The quantitative data collection was carried out as an online and in-person survey. Both these were cleaned and aggregated into one data set. The data analysis package SPSS was used to produce graphically representations of the data sets.

- **Ethical Considerations**
  To ensure that all respondents, especially key stakeholders freely participated in the study, they were assured of strict anonymity. Each of the key stakeholder freely consented to have their interviews recorder. Similarly, data collected in the online and in-person versions of the survey did not include information related to the age or names of respondents. All participants were informed of their rights to withdraw at any stage of the interview/data collection process. The highest standards of confidentiality were employed in acquiring, analyzing data from respondents.

- **Study limitations and lessons learnt**

  The study was conducted mainly in urban areas and areas adjacent to them. This limits the incorporation of views on the procurement of DTSs mainly to people living in urban areas excluding most of the people residing in the country. The online survey component of the study took far longer than expected to gather data from just 200 respondents. From the experience with the online survey, just emailing the survey link to respondents is not enough to get them to respond to it. One must be in constant touch with those the link is sent to, to encourage/remind them to respond to it. It is also worth noting that in-person follow with those who receive the link is also helpful. It some instances it was even necessary to take a computer or tablet to people to facilitate their response to the survey.

  The survey was unable to interview most key stakeholders because of their inaccessibility or varying schedules. From the Liberian context, digital technology systems are years away from being ubiquitous.

Study Findings

4.1 International/National Legal frameworks On Procurement and use of DTS

- **Laws related to procurement and use of DTSs**

During the study, it was noted that there are no separate laws or regulations that govern the procurement and use of DTSs in Liberia. While the country is currently discussing the passage of a cybercrimes law to address the chronic abuse of digital technologies especially internet crimes, there is little effort being put into the crafting of policies or laws aimed at governing to procurement and use of digital technologies.

Even though there are no standalone laws to govern the procurement of digital technologies in Liberia, it is generally agreed that the Public Procurement and Concession Act (PPCA) governs all government purchases regardless of what is being bought. The PPCA was passed in 2005 as part of the governance reform process that followed the country's second civil war. The Act was amended in 2010 to strengthen it. As part of the PPCA, the Public Procurement and Concession Commission (PPCC) was established and has operated in the country ever since. The PPCC oversees all government procurement. It ensures that procurement of goods and services by government institutions follow the rules spelled out in the Act and regulations.

In 2019 the Ministry of Post and Telecommunications completed consultations and drafted the Cyber Crimes Act and submitted it to the office of the president. The draft Act when passed into law by the Liberian legislature, aims to interdict the commission of cybercrimes in the country. Though the proposed Act does not exclusively address the issue of DTSs, several provisions of it may apply to technology systems across the board. Section 3 of the proposed law gives the president the power to designate certain computer networks as "critical national infrastructure". Someone convicted of damaging such infrastructure shall serve a prison term of 3 – 5 years.

The law also imposes prison terms for anyone who unlawfully intercepts communications (Section 7) or unauthorizedly modifies computer data (Section 8). Section 10 of the proposed law also makes the “misuse of devices” an offence. This provision focuses more on the use of spyware as opposed to the protection of individual data.

In 2019, the government through the Ministry of Post and Telecommunications also released the “Liberia Information and Communications Technology Policy”. While the policy states in Section 5.14 that the country adheres to “universal data protection principles”, it provides no clear strategy on how such principles are operationalized in the country. This Policy also focuses on the government’s desire to use of digital technologies as the prime mover in its quest to digitalize the country’s economy. This is clearly in response to the cash problems related to the limited supply of banknotes in the country.

4.2 Perspectives of Key Stakeholders on Procurement and Deployment of DTS

Several key stakeholder interviews were conducted as part of the study. These interviews cut across government institutions that either serve a policy role in the use of technology or were end users themselves. From these interviews, certain conclusions were drawn on the acquisition, and use of DTSs in Liberia. Some of these include:

- The deployment of digital technology systems is rare within Liberia.
- The use of digital technology systems exists in very few government and private institutions.
- There is no policy on the importation of digital technology systems into Liberia.
- There is no policy on the deployment of digital technology systems across institutions in Liberia.
- The digital technology systems in most use in the country are biometric readers and closed-circuit television cameras.
- Biometric readers are largely deployed as a human resource monitoring mechanism by some government and private offices.
- Biometric readers are also deployed in some institutions as a security measure to control access to buildings or parts of buildings.
- Biometric readers are also used by government agencies like the Ministry of Foreign Affairs and Liberian Immigration Service to respectively issue passports or record the entry and exit of travelers from the country.

- The government has embarked on a national identification scheme which issues biometric ID cards to Liberian citizens.

- The government's primary use of digital technology is with the view to moving the country into a digital economy. This is clearly in response to the cash problems related to the limited supply of banknotes in the country.
- There are no separate procurement rules for digital technology systems. The general procurement rules that apply to other government acquisitions applies to DTSs.
- Government agencies say they intend to deploy DTSs soon.
- The Liberian government, at this stage lacks the capabilities of deploying facial recognition technology.
- Liberia current lacks the capability of deploying facial recognition technology because of its current inability to activate the required database for enrolling people.
- The main kind of DTS used in Liberia is biometric readers that are used as human resource management tools to help their employees access their work premises and sign in and out of work.

- **Knowledge of procurement and use of DTS in the country**

  All the key stakeholders, especially those working for state institutions, interviewed as a part of the study showed clear understanding of the procurement process required under existing government rules. All of them made it clear that there are no separate rules for procuring DTSs. They stated that the general procurement rules as outlined in the PPCA and PPCC regulations govern the procurement of all goods and services including DTSs.

  On the other hand, most of those surveyed from the public had no understanding of the procurement process. Most of them, in both the online and in-person surveys, stated that they did not know about laws and policies that govern the procurement process in Liberia. In the online survey 74% of respondents had no idea of policies that govern the procurements generally. In the same vein 84% of online respondents were also not aware of laws and policies that govern the procurement of DTSs in Liberia. For the in-person survey 65% of respondents were not aware of laws and policies that generally guide procurements; while 74% of them had no idea of laws and policies that specifically govern the procurement of DTSs.

Few government institutions like the Liberia Telecommunication Authority (LTA), Liberia National Police (LNP) and the National Identification Registry (NIR) had used DTSs in the form of biometric readers. The LTA deploys them as a human resource management tool, while the LNP requires biometric entry to its cyber security center at its headquarters in Monrovia. The NIR for its part collects biometrics of Liberian citizens for the issuance of national ID cards.

While all of those interviewed knew what DTSs are, especially when a definition was provided, very few of them had had any direct interaction with such technologies. Table 4 below shows this trend stating that about only 13% of the respondents knew about the digital technology system in the country, a big percentage 54% at least knew the biometric type of technologies. None of the respondents in Liberia mentioned artificial intelligence type of technology and only 20% had an idea of facial recognition type of technology.

Table 1: Knowledge on different technology

Response	Digital Technology Systems		Biometric technologies		Artificial Intelligence		Facial recognition (CCTV Cameras)	
	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent
No	350	87.5%	185	46%	400	100%	321	80%
Yes	50	12.5%	216	54%	0	0%	79	20%
Total	400	100%	400	100%	400	100%	400	100%

According to the respondents who mentioned that they knew the different types of technology, there was no major difference in the response in terms of the respondents' gender. The respondent's education level seems to determine the knowledge level when it comes to them knowing about digital technologies. The study shows that among respondents who know digital technology systems, most of them had acquired a university diploma (46%), while those that mentioned biometric technologies had acquired a bachelors' degree (44%). The study also found that a person's area of residence was also reflective of the knowledge of DTSs. Across all the different types of digital technology systems, over 70% of the respondents were based in urban areas.

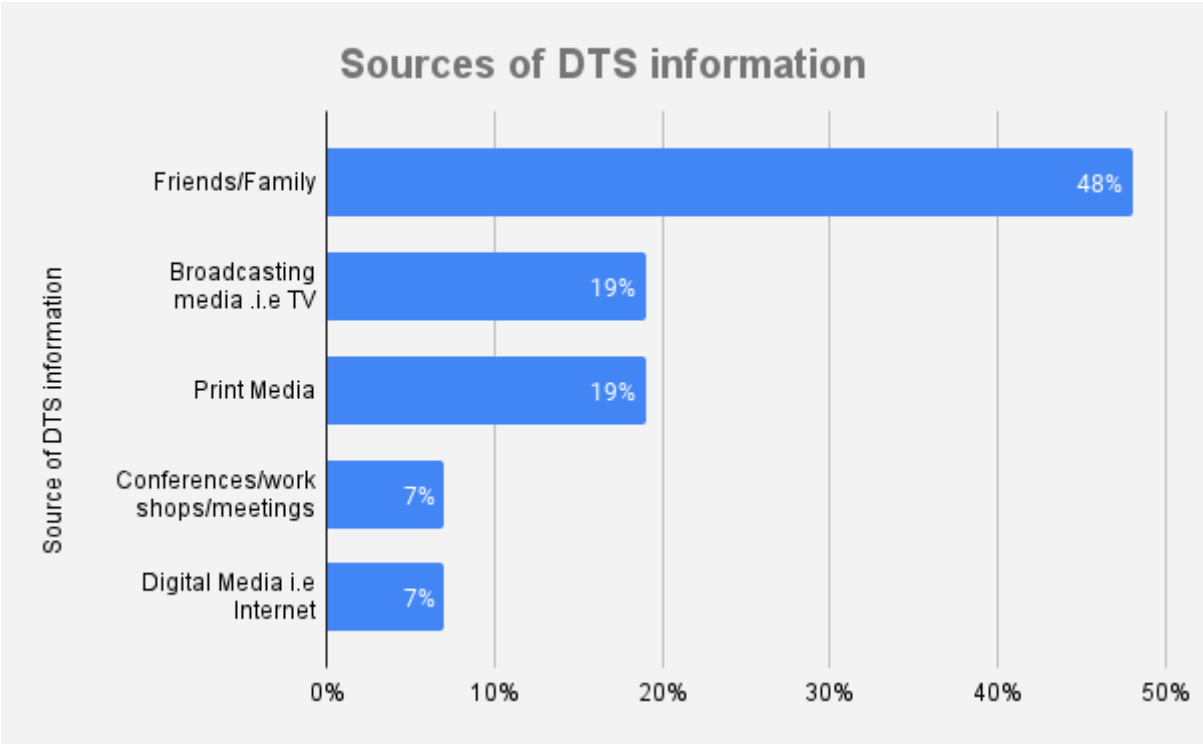
When asked about how they knew the different DTS, 43% of them saw the facial recognition type of technology. About 72% had heard about the digital technology system and 63% had used biometric technologies. For the artificial type of technologies, none of the respondents mentioned that they had an idea what it was. Also as stated above, most of these respondents were all from urban areas and so there was no significant difference in terms of the respondents' residence and their knowledge towards the different types of DTS since the majority of them were urban-based.

With most of the respondents being drawn from urban areas there was no significant difference in terms of their residence and their knowledge of different types of DTSs. Most respondents who knew about DTSs were mainly males and resided in urban areas.

The research shows that there was not a significant difference in the gender distribution of knowledge of specific DTSs compared to the reflection of gender in the entire study. While there was a slight increase of females who know about biometric technologies, knowledge of general DTSs and artificial intelligence roughly reflected the gender representation in the survey. Both male and female respondents had no knowledge of facial recognition.

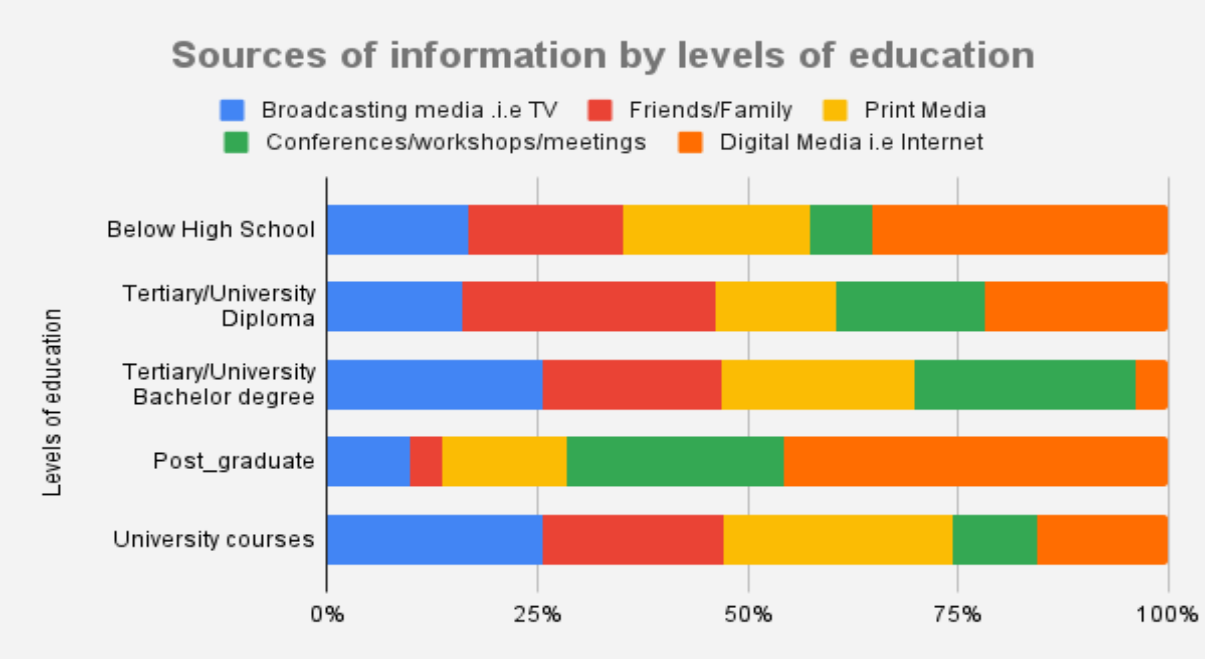
According to the Figure 4 below, many respondents (48%) get their information about DTS from friends and family. There are some who get information from broadcasting media and print media. As already noted in this report, there was no significant difference between the respondents' source of information and their residence since majority were all from urban areas.

Figure 1: Sources of information



The study found that there is not much difference when the source of information is considered in terms of gender. Slightly more women (49%) as compared to men (47%) get their information regarding the DTS from friends and family, while they equally (19% each got information from broadcast media. Slightly more males (20%) than females (17%) get information on DTSs from the print media. Figure 6 below shows that despite the different educational backgrounds of the respondents, those with below high school level of education together with those respondents who have postgraduate education receive most of their information through digital media such as the internet.

Figure 2: Sources of information by respondents' level of education



- **Country budget Allocations to DTS in the past 5 years (explanations for: growth or decline in allocations overtime and differentials in allocations across MDAs)**

  It is not clear how much money has been allocated to the procurement of DTSs by the Liberian legislature during annual budget processes. The Liberian National Budget has no clear or distinguishable lines for the procurement of technologies. What exists are two lumpsum figures that are classed under the headings "Goods & Services" and "Consumption of Fixed Capital". These two budget lines seem to refer to the acquisition of all forms of goods and services including ICTs and other DTSs for which funding has not independently been allocated. In the 2016/2017 budget the Goods and Services budget line contained a projected amount of $128.90 million. This amount represented a decrease of 6% on the same line from the previous budget period. For the Consumption of Fixed Capital line, the amount in the 2016/2017 budget was $10.87 million representing a 2% decrease on the previous year.[8]

[8] National Budget FY2016-2017 2016 16.

In the 2017/2018 budget $96.67m was allocated to Goods and Services, representing a 25% decrease on the previous budget period's allocation.[9] During this budget period, the Consumption of Fixed Capital line was eliminated. The budget notes noted that austerity measures were being applied to telecommunications and other capital expenditures.

The reductions in expenditures on Goods and Services continued in the 2018/2019 budget with an allocation of 79.14m which represented a 38% decrease on the previous year's allocations.[10] A further decrease was seen in the 2019/2020 budget with an allocation of $72.1 which represented a 13.1% reduction on the previous budget period.[11] In the current budget for 2020/2021 the decrease in allotment for the Goods and Services budget line continued the downward trend seen over the previous four years.

These budget allocations show that the government is less concerned with the acquisition of most goods and services. The reductions or elimination of the budget lines that could be used to fund the acquisition of DTSs shows that they are not a priority in the current Liberian context as the government struggles to meet basic expenditures on salaries and infrastructure projects like roads it deems as more important.

- **Procurement of DTSs as part of national expenditure frameworks**

  There is no clear information on the expenditure framework associated with the procurement of DTSs by the Liberian government. The government's general expenditure framework is not even clear especially when it comes to the budget lines that represent allocations meant for goods and services acquired by government agencies.

- **Purposes and circumstances for which DTS are procured**

  As has been noted earlier, DTSs currently in use in Liberia have largely been used as a human resource management tool. In some instances, the technology has been employed as a means of helping government agencies deliver certain services like the issuance of passports or identity cards to the public. The National Elections Commission has also used DTSs to ferret out people who register multiple times during the country's electoral processes.

[9] National Budget FY2017-2018 2017 3.
[10] National Budget FY2018-2019 2018 xix.
[11] National Budget FY 2019-2020 2019 xx.

Respondents in the survey believe that DTSs are procured for different reasons. Table 11 below shows that about 41% of the respondents believe that the purpose for DTS is for person identification, while about 29% said it was to promote security. The people who stated that it is to promote efficient service delivery accounted for 15%. None of the respondents mentioned promoting citizenship nor promoting democracy.

Table 2: Purpose of the procurement

Purpose of Procurement	Response	Rate	Percent
Person identification	No	236	59%
	Yes	164	41%
	Total	400	100%
Promote safety	No	359	90%
	Yes	41	10%
	Total	400	100%
Promote security	No	286	72%
	Yes	114	29%
	Total	400	100%
Promote citizenship	No	400	100%
	Yes	0	0%
	Total	400	100%
Efficient service delivery	No	342	86%
	Yes	58	15%
	Total	400	100%
Promote democracy	No	400	100%
	Yes	0	0%
	Total	400	100%
Monitor Political Activities	No	377	94%
	Yes	23	6%
	Total	400	100%

Again, there is no differences in the views of respondents in terms of their gender since majority were males across all the responses. The respondents who mentioned promoting person identification, 69% of them knew biometric technologies. Those that mentioned the purpose as promoting security, about 65% of them knew facial technologies. The survey also found that slightly more females than males stated person identification. Similarly, slightly more females stated promoting security as the purpose of procuring DTSs.

- **Government MDAS procuring and using DTSs**

  A few government agencies have procured DTSs. As stated earlier, these agencies have mainly procured the technologies for human resource management reasons, providing security access or as part of the execution of their mandate of providing identification cards for Liberian citizens. An examination of the procurement plans presented by government agencies to the PPCC between 2016 and 2021 shows that the government has hardly spent any money on the acquisition of technologies.

  The National Identification Registry, Ministry of Foreign Affairs, Liberia Immigration Service, Liberia National Police, and the National Election Commission were the only government institutions that were noted to have deployed DTSs as part of their service deliver. All these largely relied on the use of biometric readers either as a service delivery tool, human resource management tool or implementing security measures.

- **Types of DTS procured and used by MDAs**

  The government agencies that have acquired DTSs have mainly purchased biometric readers. The Liberia National Police in 2016 procured and installed surveillance capabilities around Monrovia by deploying CCTV cameras. By 2018, though, the new inspector general of police disconnected those cameras. The camera, deployed by the LNP reportedly did not have facial recognition capabilities. While the reason for the disconnections is not clear, it might be good for civil rights that he is not keen in the national police having surveillance capabilities.

  The National Election Commission (NEC) has used soon form of facial recognition software. According to the NEC, they used some basic open-source facial recognition software during the conduct of general and special elections to help them identify people who registered multiple times during the voter registration process. The commission warned its workers to avoid being party to such activities.[12]

[12] 'NEC Warns Magistrates to Desist from Fraudulent Acts in Election | Liberian Observer' <https://www.liberianobserver.com/news/nec-warns-magistrates-to-desist-from-fraudulent-acts-in-election/> accessed 3 May 2021.

- **Countries from where DTSs are procured**

  Key stakeholders from the government interviewed for this study indicated that they do not have any country preference for the source of the equipment that they procured. The LNP noted that the only issue of concern for them is whether the equipment in question is compatible with their existing set up. They are also concerned about the possibility of easily obtaining spare parts for the equipment in question. Every other stakeholder interviewed expressed similar position on the matter.

4.3 Procurement processes and Methods

The PPC Act imposes certain requirements on government institutions that are involved with procurement issues. It requires each such institution to have a procurement committee which shall be comprised of five people and headed by the head of the institution or his/her deputy.[13] As part of its duties, the procurement committee is required to constitute a bid evaluation committee of people who have the requisite expertise to evaluate tenders that are solicited on behalf of the institution.[14]

Each procurement committee is also responsible to prepare and submit the spending entity's procurement plan to the PPCC. The committee is also responsible to ensure that the entity's budget aligns with its procurement plan. The procurement plan serves as a guide. It should include the types of contracts that will be used, the planned delivery or implementation dates for the contracted product or services, the types of metrics that will be used to evaluate the vendor's performance and an explanation of how the procurement process will be performed. Procurement plans submitted by spending entities reviewed for this study did not usually meet these minimum standards. Though each spending institution is required to submit their procurement plans for each fiscal year, this is hardly the case. The PPCC web portal that lists the various procurement plans, does not contain plans for all government institutions.

The PPCC Regulation 90 sets thresholds that will trigger international competitive bidding for the procurement of goods and services or for the procurement of works. The regulation sets the ceiling threshold for the procurement of goods and services and works respectively at $500,000 and $1,000,000 United States dollars for the use of national competitive bidding.

[13] Public Procurement and Concessions Act 2010 s 26.
[14] ibid 30.

Where the total cost of the bid exceeds these thresholds, the spending entity is required to revert to international competitive bidding. Similarly, the Regulation sets thresholds for the use of requisition for quotation, use of restricted bidding, planned sole source procurement, and contracts for the procurement of consulting and non-consulting services.[15]

The Act lays down minimum qualification criteria that bidders must meet to be considered qualified to participate in tendering for a contract. These at the minimum include the bidder showing that it possesses the professional and technical qualifications; has a good past performance record; it has the required legal paperwork in order; it has a history of after-sales services; it is tax compliant; and it is financially stable.[16] Though this list is not exhaustive, it points to the basic minimum that must be met by the bidder.

A successful bid that exceeds the threshold set by PPCC regulations is required to be reported to the Commission and it is required to make this information to be published.[17] Spending entities are also required to provide justification to unsuccessful bidders who request to know the reason their bid did not win the bidding.[18] Spending entities are required to retain all bid documents of both the successful and unsuccessful vendors for a period of six years.[19] The PPCA outlines various types of procurement methods that spending entities should use. The Act also outlines how each of these methods shall be used.[20] Bids are required to be submitted in a sealed envelope. They must be signed. A bid that is submitted after the deadline is automatically disqualified from being considered.

- **Openness in the procurement of DTSs**

  The procurement of goods and services under the current PPC Act is generally transparent as each spending entity under the Liberian budget law is required to submit its procurement plan to the PPCC. The procurement plan outlines what the institution intends to purchase based on the allocations that have been made for it in the National Budget.

- **Compliance with the set Legal procedures (planning, methods of bidding and attracting bidders, duration of the process ;)**

  The PPC Act requires all spending entities to comply with the Act and all regulations that are promulgated by the PPCC to govern its implementation.

[15] Amended PPCA Regulations (Final) 64–66.
[16] Public Procurement and Concessions Act s 32.
[17] ibid 37.
[18] ibid 38.
[19] ibid 43.
[20] ibid 46.

The law provides very little leeway to the spending entity when it comes to it having discretion in how it chooses a successful bid. The procurement method used by a spending entity are generally required to follow the guidelines laid down in the Act[21] and the Regulations. Spending entities, though, have a little bit of discretion in granting a Margin of Preference designation to Liberian businesses.[22]

The Act requires that procurements be done "by means of advertised open bid proceedings". It also requires that all qualified bidders be provided equal access.[23] The Act requires the imposition of a prison sentence of up to five years on anyone who violates any of its provisions. The person may also be made to pay a fine of up to one hundred thousand United States dollars.[24]

- **Number of bids attracted per tender**

  No information has been gathered on bids that are attracted to tenders at this stage of the study. Procurement data available from the PPCC does not show such detailed information. Individual government agencies carry out their own procurement processes. They do not release information related to how many tenders that are attracted to bids. They generally release information related to winning bids as required by the law. Bidders have to right to raise issues related to failed bids.

- **Efficiency and effectiveness in procurement for DTSs (Reported values match actual expenditures, alignment of expenditures with market prices)**

  The study could not identify any sources of data to make an evaluation of the efficiency and effectiveness of DTS procurements. The survey, though, noted that most of the respondents do not believe that the costs that are incurred by the government are worth it. And a few believe that it is worth the cost. As usual, many respondents were undecided.

Table 3: Government Procurements worthy the costs

Response	Freq	Rate
Strongly Agree	12	3%
Agree	55	14%
Neutral	138	35%
Disagree	112	28%
Strongly disagree	83	21%

[21] ibid 46 (3).
[22] ibid 45.
[23] ibid 46.
[24] ibid 138.

- **Professional competencies of Procurement personnel in MDAs**

  Generally, the people who run the procurement departments or committees are well conversant with the requirements of the law. This is the case even in instances where they step outside the bounds of the legal requirements imposed on them by the Act and the PPCC Regulations.

4.4 Source of funding for DTS (National Vs External/donor funding)

Though the Liberian budget has had donor funding components over the years, most procurements that are sourced from the National Budget come from taxes collected. Donor funding for govern agencies are usually done separately from budgetary allotments. For example, the Liberia National Police is in the process of setting up a data collection center across its police stations across the country. According to the LNP, the process which is been funded by the European Union and implemented by AFRIPOL through ECOWAS, is meant to share criminal databases across West Africa.

4.5 Safeguards to privacy, security and inclusion in the procurement and use of DTSs

- **Institutional mechanisms that protect data collected through DTSs**

  There is no policy that exists currently in Liberia on the acquisition and use of DTSs in the country. There is also no law or policy that exists on the protection of personal data gathered because of the use of DTSs, especially if such collections are done outside the National Identity Registry's remit. Though the NIR is required to establish rules and procedure for gathering biometric data of Liberians and people living in the country, there is no indications that it has made any move in doing so. The study found the existence of no such rules or policies that have been crafted by an institution that governs the data it gathers because of its deployment DTSs.

  Just about (33%) of the respondents believe that the Government should create a single National Identification Authority with the sole purpose of collecting and regulating personal data. More of the respondents (41%), though, did not agree with the statement nor disagree. This data shows that not many people in the country know that the National Identification Registry has already been created by law to specifically play this role. This was also evident when asked the respondents of Liberia about the institutions managing the procurement of DTS, and only 15% mentioned the National Identification Authority.

Table 4: Government create one National Identification Authority

Response	Response
Strongly Agree	12%
Agree	21%

Neutral	41%
Disagree	18%
Strongly disagree	9%

Only 32% of the respondents in Liberia say that their government should unify all identity information into one database and only 23% of the respondents don't believe so. The big percentage of the interviewed (46%) population was undecided, this means that they did not know what to respond when asked about the statement.

- **Existing laws, policies and regulations governing use of DTSs**

  There are no laws, policies or regulations that currently exists in Liberia on the use of DTSs in the country. There is also no law or policy that exists on the protection of personal data gathered because of the use of DTSs. There are few laws, though that could be interpreted to extend to privacy and data collection involving DTSs though such a conclusion will at best present itself as an issue for debate.

- **Sanctions for data misuse**

  There are currently no rules in place for the procurement of DTSs in Liberia. There are also limited laws or policies on the privacy issues related to the collection of data by DTSs in the country. At present anyone can procure and deploy these technologies in Liberia. Anyone can buy them and import them to Liberia regardless of whether the person runs a government agency or a private business.

  The situation of a lack of rules to govern these systems poses a serious risk to the public when it comes to privacy issues. In 2016 there was a massive cyber-attack in Liberia. The attack collapsed the internet service of one of the two mobile telephone networks. It was later revealed that it had been paid for and orchestrated by the rival phone company and staged from the United Kingdom. Though the culprit was arrested and tried in the UK[25], no one in Liberia was held to account because there are no criminal laws to interdict cybercrimes in the country. Data protection policies involving the use of technology are also nonexistent. There are no civil statutes that directly address the issue of contracts and disputes that arise out of business relationships involving technology.

[25] 'Briton Who Knocked Liberia Offline with Cyber Attack Jailed' *BBC News* (11 January 2019) <https://www.bbc.com/news/uk-46840461> accessed 3 May 2021.

Section 4.5 of Liberia's Freedom of Information law exempts personal information from being disclosed as part of an access to information request if such a "disclosure would constitute an unreasonable disclosure of the personal information."[26] Chapter Seven of the Freedom of Information Act imposes both civil and criminal sanctions for its violation.[27] It is not clear, though, whether the sanctions outlined in this law will apply to information gathered because of the use of DTSs.

Respondents in the surveys that accompanied this study were of the view that an independent regulator should exist to prevent abuse of data collected by DTSs. In the online component of the survey slightly more than half of respondent held this view. In the in-person version of the survey a similar percentage of respondents held the view that an independent data regulator is necessary in Liberia.

As seen in the table below about 66% of the respondents also suggest that the government or institution responsible for the management of these DTS has an obligation of ensuring that the data collected by Digital Technology Systems is not abused or misused. About 55% of the respondents believe that there is a need for an independent regulator to prevent abuse of data collected by Digital Technology Systems. 17% of the respondents do not agree with the statement.

Table 5: DTS data should not be abused/misused.

Response	Response
Strongly Agree	13%
Agree	53%
Neutral	26%
Disagree	5%
Strongly disagree	3%

4.6 Private Sector involvement in the supply of DTSs to government

- **Risks and opportunities for PPPs in the procurement of DTSs**

  Most procurements of goods and services done by the government in Liberia are done through private companies.

[26] FREEDOM OF INFORMATION ACT 13, 8.
[27] ibid 12.

Depending on the amount of money involved, the spending institution is required to seek the approval of the PPCC. If the good/service meant to be procured is sole by a limited number of sellers, the spending entity is also required to seek the approval of the PPCC to single source its procurement.

Since there are no separate procurement processes for DTSs in Liberia, their acquisition also follows the same pattern enumerated above. For example, the Liberia National Police contracted the services of a local firm called RoviaGate to procure and install its surveillance camera systems around Monrovia in 2016.

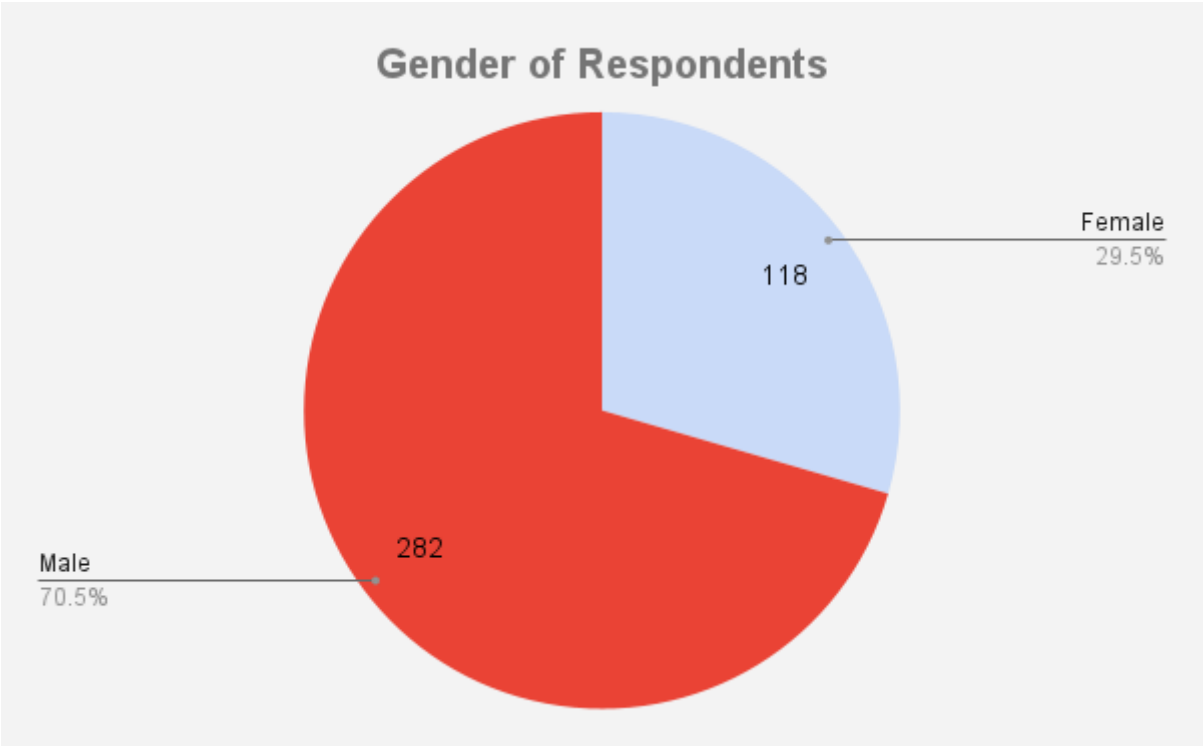
4.7 Survey Findings on Procurement and Deployment of DTSs

4.7.1 Survey sample Characteristics

- **Respondent Distribution by Sex**

  As the below graph shows, just slightly under 30% of those surveyed for this report were female, while about 70% of respondents were mail. No gender considerations were made in the selection of respondents.

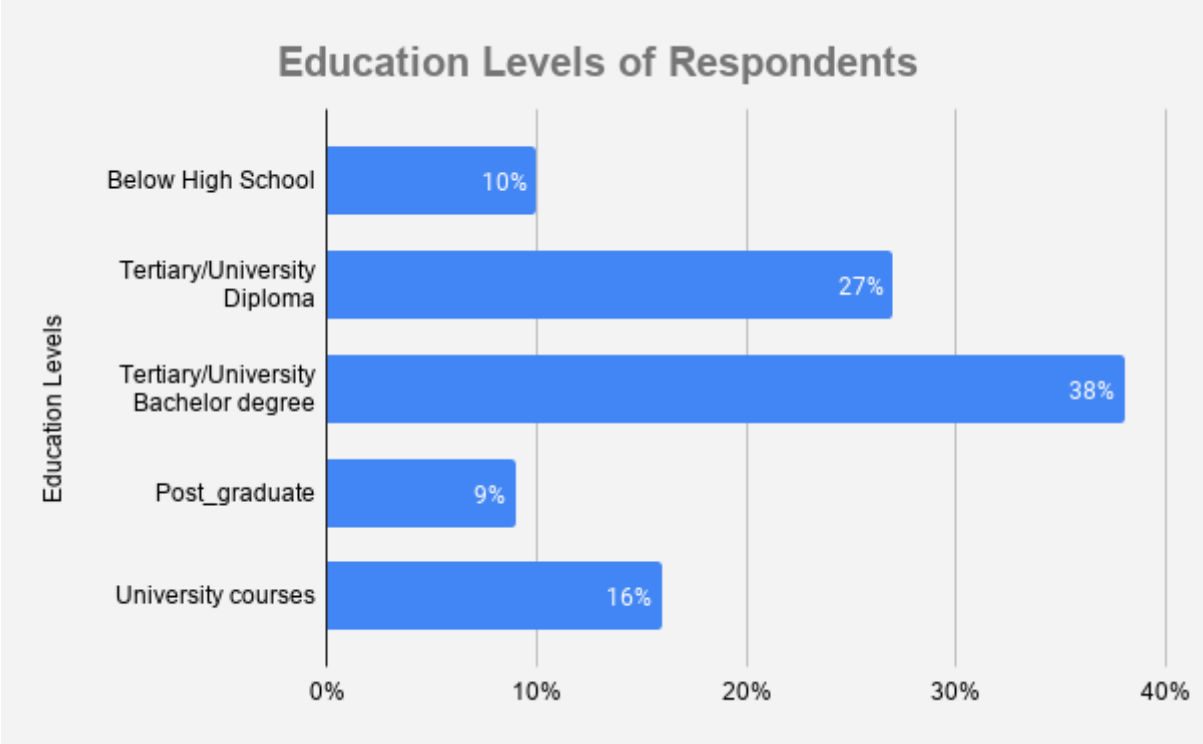
Figure 3: Gender of Respondents



- **Highest Level of Education**

  As Figure 2 shows bachelor's degree was the highest level of education attained by most of those who participated in the survey constituting 38%; while 27% of respondents had attained high school diplomas. Only 9% of respondents had post graduate education, 16% of them had done some university courses while 10% of respondents are educated below the secondary school level. The data reflected in Figure 2 shows that the education levels of most of the respondents means that they all could easily happening in the country.

Figure 4: Levels of respondents' education



- **Employment status**

  Table 2 shows that most people interviewed in the in-person survey are self-employed constituting 33%; while those formally employed in the private sector constituted 31%. Formally public sector workers made up 16% of respondents, while 20% of those interviewed were not employed.

Table 6: Employment status of respondents

Employment Status	Freq.	Rate
Not employed	80	20%
Formally employed in public sector	62	16%
Formally employed in private/Non-govern	125	31%
Self-employed	133	33%
Total	400	100%

- **Place of residence**

  As shown in Table 3, 74% of those interviewed described their areas of residence as urban, while 15% and 11% respectively stated that they reside in rural and peri-urban areas.

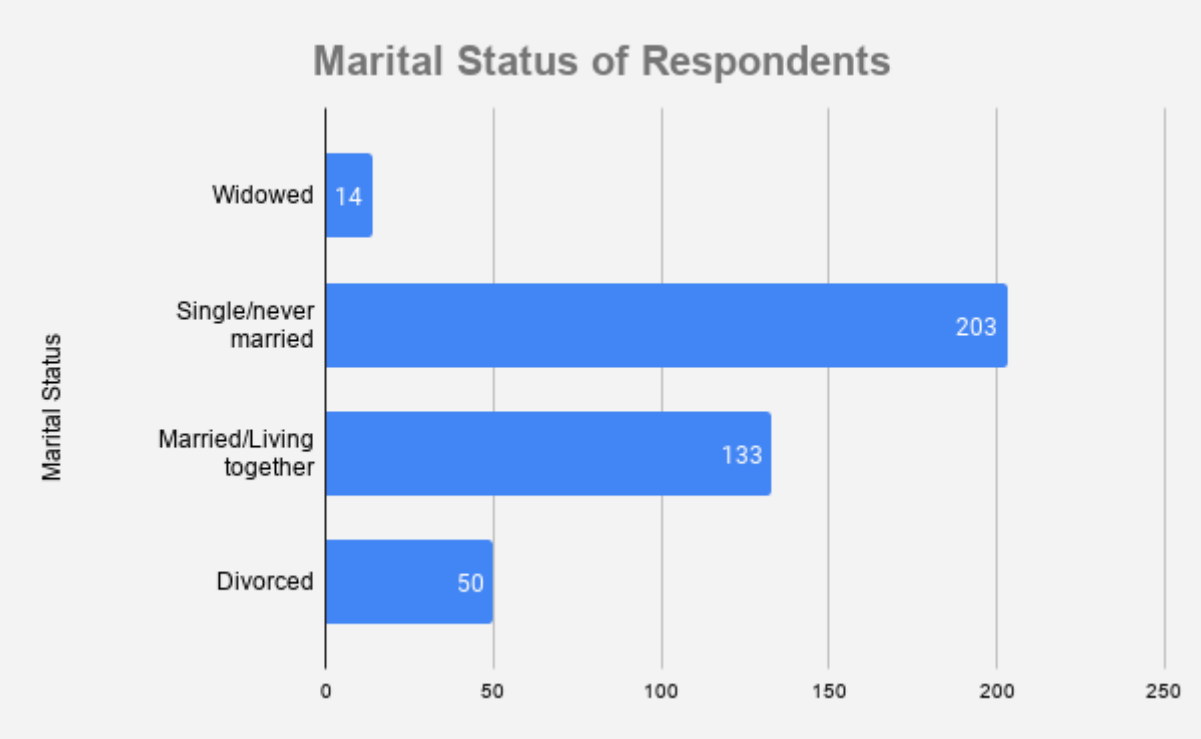
Table 7: Residence of respondents

Residence type	Freq	Rate
Rural	59	15%
Urban	296	74%
Peri-urban	45	11%
Total	400	100%

- **Marital Status**

  As seen from Figure 3 below, most of the respondents interviewed were either Single/never married and others were married/living together with their partners.

Figure 5: Marital status of respondents



4.7.2 Knowledge on procurement of DTSs

From the study, the public has limited understanding of the operation of the procurement process in general and the procurement of DTSs particularly. Though the PPCA specifies how the bidding process should work, respondents provided a widely varying view.

4.7.3 Perceptions on government's procurement of DTSs

Most respondents were of the view that the government is not transparent about the acquisition of DTSs in the country. According to the table below, most respondents (73%) said that their Government need to ensure that the process of procuring these Digital Technology systems is more transparent.

According to Table 40 below, most respondents (73%) said that their Government need to ensure that the process of procuring these Digital Technology systems is more transparent.

Table 8: Process of Digital Technologies should be transparent.

Response	Response
Strongly Agree	25%
Agree	48%
Neutral	20%
Disagree	5%
Strongly	3%

disagree

Very few respondents (5%) think that the government always follows these open bidding/contracting when conducting procurement processes. While 40% do not know whether the government follows the open bidding whereas 34% think that the government sometimes but not always follow the open bidding process.

Table 8: Government procurement of DTS follow open bidding/contracting

Response	Freq	Percent
Always	21	5%
Don't Know	158	40%
Not at all	86	22%
Sometimes	135	34%

4.7.4 Knowledge of institutions that deploy/manage of DTSs

Most respondents, as shown in Table 15, believe that it is the mandate of the Ministry of Post and Telecommunication to manage the procurement of digital technologies. Few respondents think is the Police (4%) and the Electoral Commission (5%) in charge of managing the process. As seen in Table 16 below the survey found no differences in the opinion of the respondents in terms of their genders on which government agency they thought was responsible to manage the procurement of digital technologies. Figure 8 above shows that people who have acquired bachelor's degrees are of the view that it is the responsibility of the electoral commission to manage these DTS institutions. Table 17 below shows that those respondents from rural areas think that it is the responsibility of the police to manage these digital technology systems.

Table 9: Institutions managing DTS

Variable	Response	Freq	Rate
Min. of Post and Telecommunications	No	57	14%
	Yes	343	86%
Police	No	385	96%
	Yes	15	4%
National Identification Authority	No	340	85%
	Yes	60	15%

Electoral Commission	No	381	95%
	Yes	19	5%

4.7.5 Knowledge of the procurement processes for DTSs (Advertising, Opening in the presence of bidders & Disclosure of winners)

In the survey most respondents stated that bids were neither advertised, nor opened in the presence of bidders. They also stated that the winners of such bids were never disclosed publicly. Most respondents had little or no understanding of the laws that govern general procurement in Liberia. This result is quite telling since a significant portion of the online and in-person respondents were people with college degrees. This result also points to the limited publicity of the PPCA and the PPCC.

Table 18 below shows that more females think the procurement process should follow advertising compared to the male. There was no significant difference in terms of gender when asked about disclosure of winners and opening the bids in the presence of bidders during the procurement of digital technologies. The study also showed that, a respondent's place of residence did not change the view of how the government treated bids.

Table 10: Respondents' Perception by Gender

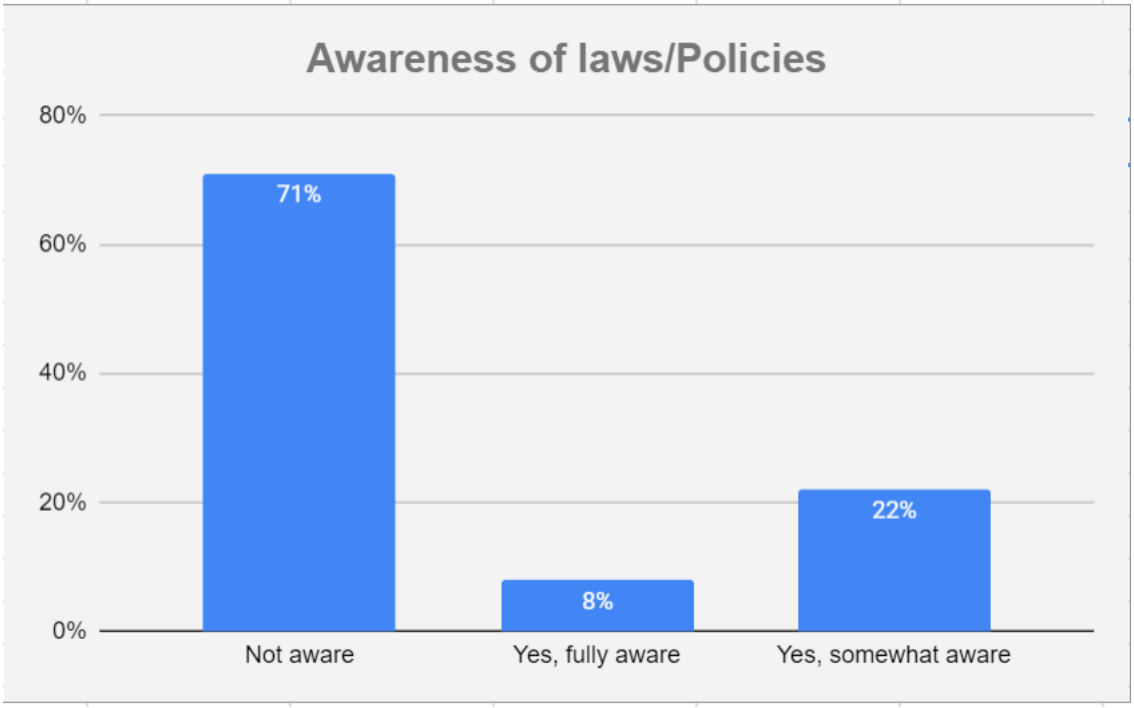
Variable	Response	Female	Male
Advertising	Yes	59%	39%
	No	41%	61%
Opening in the presence of bidders	Yes	27%	40%
	No	73%	60%
Disclosure of winners	Yes	73%	78%
	No	27%	22%

A huge majority of respondents, accounting for 81% think that a call for expression of interest should be advertised and potential bidders should be given at least 30 days to submit their bids. Very few respondents (4%) had a contrary viewpoint.

4.7.6 Knowledge of Laws and policies that relate to procurement of DTSs

Respondents in the survey were not aware of the country's procurement laws. As Figure 9 below shows, nearly 71% of respondents are not aware of any policies or laws governing the procurement of digital technology system. Only a small portion (8%) are fully aware of these policies/laws.

Figure 6: Awareness of laws and Policies



4.7.7 P Perception on why Government procures DTSs (Extent to which procurement of DTS is known to be for public benefit)

There were diverging views from the respondents in the survey on the reason for the procurement of DTSs by the government. As seen from Table 20, most respondents agree that the procurement of DTSs should be done with the sole purpose of benefiting the public. Surprisingly only 7% don't think so.

Most of the respondents (54%) do not think that digital technologies are used by the government to monitor the activities of the opposition. However, a few respondents (15%) agreed with the statement and about 32% were neutral with the statement.

Table 11: Procurement for public benefits

Response	Freq	Rate
Strongly Agree	68	17%
Agree	201	50%
Neutral	87	22%
Disagree	26	7%

While 73% of respondents agree with the statement that the government is completely justified to procure digital technology systems in the country, respondents who disagreed constituted 11%. About 16% were undecided. About 67% of the respondents seem to suggest that the government should use digital technologies to the advantage of the public. They are of the view that procurement should aim to benefit the public.

According to the table below, a higher proportion of respondents (58%) were against the use of Digital technologies for the purpose of monitoring the activities of opposition political parties. About 19% think it should be the reason for DTS procurement, while about 24% are undecided.

Table 12: Use DTS to monitor the activities of opposition political parties

Response	Response
Strongly Agree	5%
Agree	14%
Neutral	24%
Disagree	19%
Strongly disagree	39%

4.7.8 Knowledge of Government disclosure of information regarding procurement of DTSs

Survey respondents were generally in agreement on the government's disclosure of information regarding the procurement of DTSs. The data show that 60% of the respondents do not believe that the government discloses information regarding the procurement of DTS and only 18% agree with the statement.

Table 13: Government discloses information

Response	Freq	Rate
Strongly Agree	10	3%
Agree	58	15%
Neutral	93	23%
Disagree	166	42%
Strongly disagree	73	18%

4.7.9 Respondents' rating of transparency in government procurement for DTSs (whether interested bidders have equal chances)

More than half of the respondents in the survey do not agree that bidders have equal chances in the procurement process. Again, 63% of the respondents do not agree that competing firms are given chances to participate during the procurement of DTS. And only 17% of the respondents seem to think that the different bidders are always given equal chances during the procurement process.

It is worth noting at this point that Section 45 of the PPCA does allow a measure of discrimination in favor of Liberian owned business in the bidding process for government contracts. The provision allows spending entities to grant such businesses a "margin of preference" within the remit of the law and PPCC regulations.

Table 14: Bidders given equal chances during procurement

Response	Freq	Rate
Strongly Agree	13	3%
Agree	57	14%
Neutral	81	20%
Disagree	171	43%
Strongly disagree	78	20%

More respondents do not believe that there is transparency when the government procures digital technologies. Only 16% of all the 400 respondents agree with the statement. According to the table above, about 81% of respondents in Liberia think that the local companies need to be given equal chances to supply digital technologies. Only 6% are the ones who think that local companies should not be given chance to supply Digital technologies in their country.

Table 15: Transparency in procurement of DTS

Response	Freq	Rate
Strongly Agree	20	5%
Agree	42	11%
Neutral	87	22%
Disagree	162	41%
Strongly disagree	89	22%

4.7.10 Privacy of citizens in the use of DTSs

There are no specific laws in Liberia that govern the issues of privacy when it comes to the use of DTSs. Even though this is the case, the country's Penal Law seems to address unwarranted intrusions in Chapter 19. The law makes it a misdemeanor of the first degree for anyone to engage in "Unlawful eavesdropping or surveillance" of a private property or in a space where someone may reasonably expect to have privacy by using "any device for observing photographing, recording, amplifying or broadcasting sounds or events in such place".[28] This provision is quite wide-ranging and could be applied to data captured by the use of DTSs even though criminal lawyers may argue that when the law was passed in 1976, the framers could have not intended to cover modern technologies.

Most respondents (about 54%) noted that there is usually no prioritization by the government in protecting the privacy of its citizens. Still, there is a big number of respondents who did not agree nor disagree with the statement.

Table 16: Government protects the privacy of citizens

Response	Freq	Rate
Strongly Agree	10	3%
Agree	54	14%

[28] Penal Law - Title 26 - Liberian Code of Laws Revised ch 19.1.

Neutral	121	30%
Disagree	118	30%
Strongly disagree	97	24%

4.7.11 Human Rights in the use of DTSs

The scant use of DTSs in the country makes it difficult to assess their impact on human rights. This situation also makes it impossible to draw any conclusions around how their uses impact the human rights of people in the country. As at the conclusion of this report, there were no information regarding human rights issues linked to the use of DTSs in Liberia.

About 30% of the interviewed people say that the government uses digital technology systems to promote human rights. However, 32% seem not to agree with the statement and a huge number of respondents (40%) neither did agree nor disagree.

Table 17: DTS to promote human rights.

Response	Freq	Rate
Strongly Agree	34	9%
Agree	82	21%
Neutral	158	40%
Disagree	76	19%
Strongly disagree	50	13%

4.7.12 Respondents' opinions on whether government adheres to existing laws and policies in procurement of DTSs

Survey respondents clearly disagreed that the government adheres to existing laws and policies on the procurement of DTSs. Table 29 indicates that 34% of the respondents did not agree nor disagree (neutral) whereas about 15% agreed that the procurement done by the government adheres to the existing laws and policies and 51% of the total population disagreed with the statement.

Table 18: The procurement of digital technologies adheres to the existing laws and policies

Response	Freq	Rate
Strongly Agree	16	4%
Agree	42	11%
Neutral	137	34%
Disagree	132	33%
Strongly disagree	73	18%

4.7.13 Level of disclosure of procurement plans and budgets

Liberia is a member of the Open Budget Initiative. As a result of this, the government has consistently made the countries budget available to the public via the Ministry of Finance and Development Planning's (MFDP) website. Though the pdf format of the budget that is placed on the MFDP's website is not user friendly, every single national budget and their expenditure reports have been made available going back several years.

Like it is the case with the National Budget of Liberia, the procurement plans of government institutions are made available to the public on the PPCC's website. While the PPCA requires that all spending agencies submit their procurement plan as per the budget allocations each fiscal year, not all government's institutions present these plans as required. There are also a portion of procurement plans that were meant to be transferred to a database on the website, but the link to those plans seems not to be functional now.

4.7.14 Public Expectations DTSs procurement practices

Most respondents prefer the procurement practices of government to be transparent. About 48% of the respondents settled with the statement that the procurement which is done by the government tends not to promote accountability and only 13% believes that there is always accountability. A huge number of respondents (30%) neither did agree nor disagreed with the statement.

Table 19: Government procurement of Digital Technology Systems promotes accountability

Response	Freq	Rate
Strongly Agree	10	3%
Agree	40	10%
Neutral	120	30%
Disagree	155	39%
Strongly disagree	75	19%

Most respondents (over 68%) suggest that the Government needs to create public awareness about the purpose/need of digital technology systems. This is evident when these respondents were asked about the different types of digital technology systems and there was low knowledge across the different types of DTS. In Liberia for example, none of the respondents had ever heard about the artificial intelligence type of digital technology system.

Table 20: Government should create public awareness

Response	Response
Strongly Agree	23%
Agree	45%
Neutral	23%
Disagree	6%
Strongly disagree	4%

Conclusions

Liberia emerged for many years of civil war 15 years ago with the restoration of civilian rule to the country. Over this period, the country has struggled to recover the lost it suffered in all aspects of its social and development life because of the civil strife. Even though there has been a lot of international goodwill towards the country, especially in the decade following the post-war elections, its economy and institutions have continued to lag.

Due to the setbacks of the civil war, Liberia's advancement in technology has not happened uniformly. Since the first introduction of dial-up internet in the country in the late 1990s, it has made great progress with the landing of fiber optic cables in Monrovia in 2011.[29] Before the landing of the cable, internet services were unreliable and sketchy, but since, the situation has greatly improved.

Even with the improvement of the connectivity situation and the availability of mobile phone technology across the country, Liberia is still largely many years aware from being fully integrated into the world of technology. This situation is both a blessing and curse on different levels. While it means that advanced technologies that could be the basis for intrusive government surveillance are not generally available in the country, it also means that the state is missing out on the benefits digital technology systems present in improving the lives and livelihoods of its people.

At present, there are no laws or policies that govern the acquisition and use of digital technology systems in the country. This means that there is a vacuum which, if care is not taken, could be filled by unscrupulous people. Such a vacuum, if not addressed by the governing authorities in the soonest time, will likely spell disaster for the wellbeing of people in the country. As things currently stand, anyone may import or use technology systems that have the capability of collecting and storing personal data and even carrying out intrusive surveillance of individuals.

[29] 'Fiber Optic Cables Finally Bring Reliable Internet to Liberia, West Africa' (*The World from PRX*) <https://www.pri.org/stories/2011-11-10/fiber-optic-cables-finally-bring-reliable-internet-liberia-west-africa> accessed 5 May 2021.

Recommendations

From the findings gathered during the study, the following recommendations are being advanced. These recommendations if followed will help improve the procurement process in Liberia and provide information to the public about government and private acquisitions of DTSs. These recommendations will also help establish mechanism to properly administer the importation and use of DTSs in the country.

1) The government should shift policy by ensuring that budgeting for the acquisition and usage of DTSs is clear by specifying budget allocations for technologies instead of current system of lumping up the acquisition of all goods and services together.
2) The government should amendment the Public Procurement and Concession Act to strengthen provisions of transparency by requiring publication of procurement data in Open Contracting Data Standards.
3) The Government of Liberia should urgently fast track the adoption and implementation of a data protection legislation consistent with regional and international standards. Civil society organizations should be adequately consulted on the process and content of the proposed law.

4) The Public Procurement and Concession Commission should embark upon a publicity campaign around the country increase public understanding of Liberia's procurement laws, policies and the way the commission functions.
5) There is a need for the government to commence public consultations geared at establishing a legal regime on the importation, procurement and use of DTSs in Liberia.
6) The government should institute a policy that will require all government agencies to disclose documents like the National Budget and procurement plans in user friendly formats.
7) The National Human Rights Commission of Liberia and the Independent Information Commission of Liberia should prioritize raising public awareness of their rights to access procurement information as well as privacy.

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