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人力资源数字化对招聘、培训和绩效管理的影响：利比里亚财政和发展规划部的案例研究

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# **“The Impact of Human Resource Digitalization on Recruitment, Training, and Performance Management: “A case study of the Ministry of Finance, Liberia”**

## **Abstract**

### **摘要**

This research paper aimed to explore the current Human Resource digitalization and its impact on recruitment, training, and performance management at the Ministry of Finance and Development Planning, Republic of Liberia.

The purpose of this thesis research was to explore the current human resource digital technologies in place at the Ministry of Finance and Development Planning. The main objective of the study is “To identify key usage and challenges of the technologies in place at the Ministry”.

The population in this study was employees of the various five departments of the Ministry with a total of 949 people. The research uses both qualitative and quantitative methods and also considered the use of research questionnaire items on human resource digitalization and accidental sampling technique on all members of the population. The data have been collected via questionnaires, and face to face interview/telephone with HR manager and supervisors, HR personnel and selected top management team working at the ministry. The collected data have been analyzed using an exploratory analysis and case study analysis approaches which have resulted in three themes: digital recruitment, training and learning, and performance management.

Findings of this paper have shown that HR personnel and employees at the Ministry of Finance and Development Planning made sense of digitalization, they believed that a digitalized recruitment system has no doubt to enhance the pace, connection and the effectiveness of the recruiting process for modern businesses, the HR and top management have not prepared for the digital revolution of the training and learning process by investing in digital learning tools such as online modes, virtual classroom, The MOOC (Massive Open Online Course), Mobile learning and etc., and at the Ministry of Finance and Development

Planning, HR does not operate a digital appraisal system. Our main findings show that the Ministry of Finance and Development Planning needs to digitalize the recruitment system, digitize training and learning process and initiate a digital appraisal system that will create efficiency in operation. This study has concluded that recruitment, training and learning, and performance management are all interrelated and have a major effect on an organization and its employees. The digitalization has shown that it has majorly changed the workforce population, the skill set needed, and the way to interact and collaborate as well as to communicate within an organization not only from employee's side but also from the leadership side.

**Key words (关键词):** Digitalization, human resource information management system, recruitment, training and performance management, Human resource management, E-recruitment.

# Chapter One: Introduction

“Digitalization”, the use of digital technologies to change a business model and enable automation, increased data quality and analysis, and establish trends for better business decisions. The last decades have been marked by global transformations in all the major aspects of human life reaching far beyond the boundaries of economic activity and affecting social, cultural and political processes. The HR processes can be assigned to three different process clusters: “Workforce Planning” (e.g. Recruitment, Succession Planning), “Talent Management” (e.g. Development, Learning Management) and the “operative HR core processes” (e.g. Payroll, Organizational Management). If these processes are already established in companies, many of them are either analogue (pen & paper) or digitally supported. The digital mapping of HR processes takes place in so-called e-HRM (electronic Human Resources Management) solutions, which today often digitize one or more HR processes.

Digitalization is causing significant changes in the nature of the employment environment, having especially strong effects on the human resource (HR) sector. There are a lot of opinions on, and predictions about, significant shifts in the labor market in the near future. It is expected that machines will replace a huge number of jobs; hence, the level of unemployment will dramatically increase. Machines have already occupied a lot of finance-related jobs, and it is expected that the whole banking sector will become automated. Also, new types of employment arrangements (freelancers, the self-employed, contractors), which have appeared due to the development of the Internet and other innovations, cause both threats and opportunities to arise for employers and workers. From one side, the new types of employment are seen to offer a more flexible schedule, but, from another side, the absence of standards in terms of health of such office hours, sick leave, etc., may negatively impact the mental and physical employees.

There are six traditional human resource modules but for the study purpose and time, this research paper aimed to explore the impact of digitalization on Recruitment, Training, and Performance Management within the Ministry of Finance and Development Planning. The first chapter provides the background of the study, significance of the Study, research purpose, research content and method, and research innovation point. The next chapter aimed is to explain how digital technologies on hands are use and what the challenges are. It covers training and learning, performance management and the new types of recruitment

technologies, such social media, Artificial Intelligence, In-memory technology etc., explaining the potential benefits and challenges for employees. Also, it describes new skills that are needed by employees to stay on the labor market. Later the paper provides a discussion about the challenges that occur with new types of human resource technologies, and its influence on the confidence and productivity of workers and lastly, the paper provides a conclusion about and discussion on the effects of digitalization on customers, employees and employers.

## **1.1 Background of the study**

The accelerated technological development has revolutionized the human resource sector and continues to impact and change the way organizations work. It puts pressure on organizations and its people to adapt to the fast-changing world and the increasing amount of digital innovations. Digitalization has become a prime word in the organizational press, and addressed as something organizations must embrace in order to stay relevant (Cap Gemini, 2013; Spitzer, 2014; Goldstein, 2017; Deloitte, 2016). According to Anderson (2017), transformation is required on all levels, in order to create a modern organization that has the ability for continuous change. While the globalized economy has expanded the interaction among people from diverse cultures, beliefs, and backgrounds than ever before, people are now living in a globalized economy with hard competition coming from various societies. Due to why, different organizations need diversified workforce to become more innovative and open to change. . In order to maximize benefits, capitalizing on workplace digitalization, the research aimed to explore the current Human Resource digitalization and its impact on recruitment, training, and performance management at the Ministry of Finance and Development Planning.

## **1.2 Significance of the study**

Findings and recommendations of the study have supported top management officials and state policy makers of the Ministry of Finance and Development Planning to understand the importance of digitizing the working environment and address the persistent challenges in moving from paper age to the new digital world. The significances of human resource digitalization are a major component of institutional assets that the institution human resource department uses to improve and facilitate a better work productivity and performance.

The situations surrounding most of the public institutions in Liberia have to do with civil servants adaptation to new technology and government funding towards these innovative initiatives. However, there are a lot of motivational methods that can be put in place by government to fight for a better digital environment at the Ministry of Finance and Development Planning.

## **1.3 Research Content**

### **1.3.1 Main research content**

Based on the current trends of human resource digitalization, combined with the trend, the paper focuses on the following part of the research, the specific research content is as follows: 1) Research on the usage of the digital tools within the Ministry of Finance and Development Planning. With the rapid development of digitalization, digital transformation has had many impacts on human resource management, and these impacts have played a positive role in promoting, but also poses new challenges to human resource management. 2) Define key challenges of the technologies in place. The paper adopts questionnaire survey, case analysis, literature research and other methods are used to analyze the challenges affecting the impact of digital technologies within the Ministry. 3) Study specific measures the impact of HR digitalization on recruitment, training and performance management.

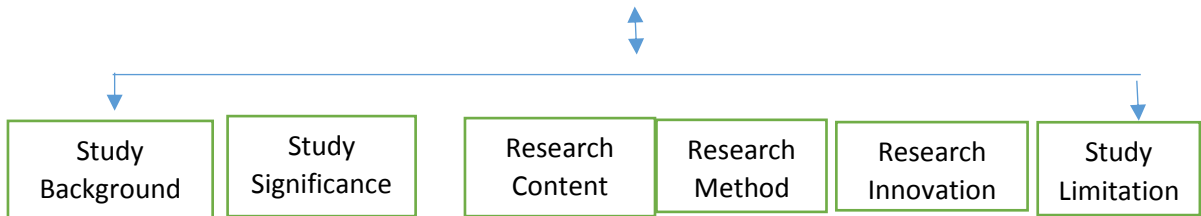
### **1.3.2 Overview of Chapter Content**

Through an overview of relevant literature theories, the paper analyzes the impact of human resource digitalization on recruitment, training and performance management. It is divided into six chapters: Chapter one focuses on the general introduction, background of the study, Significance of the study and research content, research method, the research innovation point and the limitation of the study. Chapter two presents' discussions or the review of related literature, chapter three provides details on the analysis of questionnaire and interview and data collection instruction and techniques. Chapter four depicts case analysis and relevant information of digitalization within the human resource department of the Ministry of Finance and Development Planning. Chapter five presented the data analyses, discussion, findings and results, and chapter six presents the conclusion, and recommendation.

Chapter Contents

Chapter One

Introduction

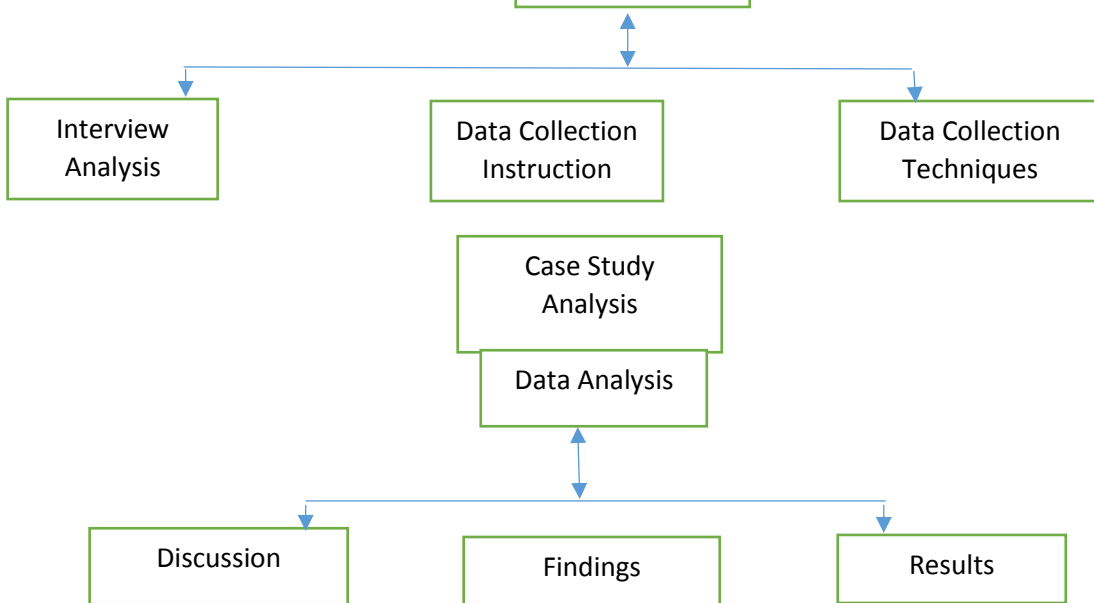


Chapter Two

Literature Review

Chapter Three

Analysis of Questionnaires



Chapter Six

Conclusion

Recommendations

## **1.4 Research Methods**

The thesis paper adopts the method of combining empirical research, qualitative research and quantitative research. Questionnaire survey, case study and other methods to study the impact of human resource digitalization on recruitment, training and performance management were used. The main research methods of this paper include the following: qualitative and quantitative research methods.

### **1.4.1 Qualitative and quantitative research**

By reading relevant literature, papers, and reports on digitalization and digital transformation, reading digital transformation Core journals and cutting-edge journals related to hot technologies such as big data, cloud computing, artificial intelligence, etc., research related dissertations for doctoral and master's degrees, study and analyzed the results of the research and the ideas of various schools, and integrate them and analyzed the correlation of human resources, study and summarize the positive effect of human resource digital transformation.

## **1.5 Research Innovation Point**

The conceptual theory use in this research paper is the Human Resource Digitalization theory. This thesis aims at showing the current HR digital technologies in place at the Ministry, the usage of digital technology in human resource department and the challenges of the technologies that are used in recruitment, training and development, and performance management. The digitalization of organizations denotes the socio-technical process of exploiting digitization potentials for operational and/or strategic organizational purposes.

## **1.6 Limitations**

I have selected one (1) public institution (Ministry of Finance and Development Planning) which is very much prominent in financial service delivery in Liberia. To research on the very topic, I had to visit the institution and sometimes had to connect with the HR Director on social networking sites. It has been a great opportunity for me to connect with him and know about their Organization digitalization processes, employee performance, and style of recruitment and enormous possibilities of their contributions on development of economic growth of this country. I came to know how the HR director and top management tackle all the recent trends, how they took measures and what the future measures for these challenges are directly.



Due to time and financial constraints, I was not able to visit the external branches of the ministry physically. Via electronic mail and social networking sites, I sent questionnaires to the HR director, off-station employees and HR personnel of the selected ministry. I met with some management officials on holiday unofficially. I collected data from them via Phone interview.

## Chapter Two: Literature Review/Analysis

In this chapter, we present and define concepts that are used for gathering the data, guiding its analysis as well as discussing our findings regarding the impact of human resource digitalization on recruitment, training, and performance management.

### 2.1. Digitalization

It has been established in several literature reviews that digitization is sometimes used as a synonym for digitalization (Urbach & Ahlemann, 2019; Gbadegeshin, 2019; Ilcus, 2018; Kuusisto, 2017), however, these two concepts do not refer to the same thing. Thus, the distinction between the two must be made before defining digitalization as it is used in the study. As found in the literature, digitization means transforming something from analog or physical format into digital format (Schallmo & Williams, 2018; Gbadegeshin, 2019; Heilig *et al.*, 2017). For example, scanning a document so that it is available on the computer. While in general context digitalization is defined as “application of any digital technologies to any human activities, such as personal life, social, economic, and political activities” (Gbadegeshin, 2019). This indicates that digitization is only one component of digitalization. There are several definitions of digitalization that reflect the different contexts and concepts that it is used. For this study we need to look at digitalization in an organizational context that also allows us to see its potential effects on people within the organization. For this reason, in this study, the understanding of digitalization in an organizational context is shaped by the following definition:

Digitalization is the use of technological innovations in the business context with a significant influence on products, services, business processes, sales channels, and supply channels. The associated potential benefits include, among others, increased sales or productivity, innovations in value creation, and new forms of customer interaction. (Urbach & Ahlemann, 2019)

Additionally, it is needed to understand the aspect of digitalization in the context of the workplace i.e. the digital environment that the work takes place. It is suggested that the digitalized work environment is affecting the way people in organizations are collaborating and engaging with each other and with other stakeholders (De Bruyne & Gerritse, 2018). The digitalization in this context is best described by a digital business consultancy i-scoop (n.d.). They say that digitalization in the workplace means that the workforce works

differently, using digital tools such as the mobile devices and technologies that make them mobile and/or using social collaboration and unified communication platforms, which are digital systems, enabling them to work in a more “digital way”. This, in turn, creates new opportunities to engage differently.

### **2.1.1 Effects of Digitalization on Managerial Positions**

The influential work of Frey and Osborne (2017) on the effects of digitalization on professions, focuses on the risk that professions will be fully automated in the foreseeable future. These authors identify computation bottlenecks, that is, capabilities that occupations possess and that cannot be replaced by machines in the near future. They find that the professional category that managers belong to is at a low risk of computerization because these occupations require capabilities such as creativity and social intelligence. Meanwhile, Feltenet *al.* (2018) look at which professional capabilities are mostly affected by advancements in technology, particularly in artificial intelligence (AI). However, their methodology did not allow further insight into whether technology is a substitute or complement to the occupation. Fossen and Sorgner (2019) build on both studies (Frey & Osborne, 2017; Feltenet *al.*, 2018) and assess the effects of digitalization on the occupations. Their assessment puts most managerial occupations in a category that is highly impacted by advancements in technology that is featured as complementary to their capabilities, rather than a replacement. Overall, they find that managers' occupation is going to be transformed and most likely end up working together with new technologies.

Similar conclusions are reached by Dengler and Matthews (2018) who argue that looking at automatization of occupations overestimates the forecast for job losses because some tasks within occupations cannot be performed by machines. Thus, they study the possibility of the tasks “as activities that individuals have to perform in a specific occupation” to be automatized. They find that there are some tasks in the occupation segment, “occupations in business management and organization” that can be fully substituted by machines while others cannot. The fact that some tasks that are performed by managers are susceptible to be digitalized while others are not, indicates the inevitable although partial transformation of managers' occupation.

### **2.1.2 Effects of Digitalization on the Functions and Practices of Managers**

As technology develops, new digital achievements lead to the transformation of business organizations. The concept of digital transformation is tightly or slightly related to

digitalization and digital innovation (Fichman *et al.*, 2014). These concepts are all built on digital technology and the outcomes of the innovation and digitalization will lead to a change in major business conducts. Osmund Sen *et al.* (2018) define digital transformation as “when digitalization or digital innovation over time is applied to enable major changes to how business is conducted, leading to a significant transformation of an organization or an entire industry”. To achieve competitive advantages, companies or organizations need to establish new management practices to govern these complex transformations (Matt *et al.*, 2015).

Managers can use the tools at hand, such as the developing technologies of AI, to organize and form these data to gain a better insight into real-time customer behavior and demand trends (Chidambaram, 2018). For example, it is necessary for a demand forecasting manager to obtain high levels of accuracy of a forecast that in turn converts into higher profitability and revenue (Chidambaram, 2018). With the abundance of data that are gathered during the complex process among supply chains, major companies utilize cognitive-based technologies to support and assist managers to foresee customers’ demands. Osmund Sen *et al.* (2018), along with Haffke *et al.* (2017), pointed out that the digital transformation makes the role of information systems in an organization to become more relevant.

### **2.1.3 Enterprise Benefits of Human Resource Digitalization**

Enterprise are evolving, and there is a need for converting promise into purpose thus forcing them to integrate digital HR transformation to deliver innovation solutions. The enterprise benefits of Digital HR transformation includes:

- creating the workforce of the future,
- ensuring better employee experience,
- increase accuracy in dashboards and analytics data,
- manage the workforce and increase efficiency and agility to meet evolving business needs.

#### **a) Time and Leave management**

Manual or traditional management of time and leave can be dangerous for any organization. Digital HR can track the pertinent information and manage leave requests, monitor remaining leaves and automate the time-consuming process of time/leave management

#### **b) Information Management**

Digital HR simplifies the process of accessing all employees' essential information, in addition to simplifying decision-making, as all data is instantly accessible and up to date. Just as employees like to be able to choose how and when they manage their professional emails and workload, they want to manage their HR data. At the other end, access to confidential information can be controlled for employees making sure the right information is available to the right people at the right time.

**c) Data usage & analytics**

As institutions are starting to comprehend the value data analytics can add to the business, areas like pre-selection, learning & development, and employee engagement can be measured by digital HR. The HR function can benefit a great deal by learning to make sense of this data. Predictive analytics tools, placed at the disposal of the HR function, can also help in improving HR processes and ensuring employee satisfaction

**d) Improve the employee experience**

For million years, the line between their professional and personal lives has become blurred. Yes, they'll check their social media account during office hours, but they'll equally check their work emails during the weekend. As such, they expect to be treated as customers, and they want their employer to provide them with a similar user experience when it comes to the digital work environment. Enterprise social platforms like Slack, Yammer, and Workplace by Facebook allow employees to work closely together on group activities and tasks and keep all users updated on the latest developments.

**e) Focus shifting on the core activities**

Digital HR can automate any time-consuming manual processes, allowing you to concentrate on more productive and important work. Any organization with a large number of employees will find it difficult to manage their information on paper. Digital HR allows HR professionals to streamline workflows to improve overall work management and productivity.

**f) Employee Development**

Digital HR can help in training and learning and development activities. It can help in employee development from training courses to performance appraisal. Regular appraisals boost employee morale and give them incentives to maintain high standards of work – the software stores data on the issues discussed, feedback given, and the goals/objectives you decided together.

**g) Future-proof recruitment**

Smooth mobile experiences, data-driven pre-selection processes and personalized, AI-based onboarding programs. These are just a few of the many examples of the benefits from digital HR in recruitment. According to a study by Undercover Recruiter in 2018, AI is expected to replace 16% of HR jobs within the next 10 years.

#### **h) Better Tools for Recruitment**

Recruiting the best team members is one of the most valuable HR functions. Effective digital tools make this process more efficient. There may be thousands of potential candidates with the right qualifications and experience for any open position, for example. In order for HR to deliver the best results, the department needs to be able to filter through many candidates and perhaps reach out to promising people on job boards, LinkedIn, and personal websites. Such practices require efficient digital HR tech and tools.

#### **i) Enhanced Productivity**

Productivity for a business comes down to many factors. HR transformation can help provide a better employee experience in a number of ways:

Provide better training, improving productivity as well as employee experiences

Make it easier to clarify company policies to improve compliance and ensure workers receive updated information promptly

Offer efficient processing of employee data, payroll, and benefits through robust software to get tasks done faster and more accurately

Upgrading tools, technology, and processes helps to boost HR practices as well as overall efficiency and productivity, not only for human resources but for the entire organization.

#### **j) Improve the employee experience by providing answers**

HR departments have the opportunity to take a cue from their marketing counterparts and create employee experiences that resemble the customer experience. And the good news is most employees are customers (somewhere), so the adoption rate should be significant, which brings immediate value to everyone involved.

#### **k) Managers: Reduce paperwork to spend more time with employees**

While we need paperwork for compliance and back-up, a manager's job shouldn't be all paperwork. Organizations want managers to spend more time building good work relationships with employees because the employee experience is important. We rely on managers to deliver a great employee experience. So, we should give them the tools they need to get the job done.

## **2.2 Impact of HR Digitalization on recruitment**

Recruitment and selection are the first and most important functions of HRM. The HRM process starts with the recruitment, followed by the completion of the selection of the candidate. Now the global human resource employment revolution has become easy and cost-effective due to the online social network. Electronic recruitment is designed to make the recruitment process more efficient and effective. The candidate can complete their necessary information (Resume) name, email, experience, qualifications and skills after completing all the details that the candidate can upload the resume. The company recruitment team will shortlist, and they will inform the candidate again. Even with the assistance of digitalization, many companies use social media platforms like Facebook, LinkedIn, Skype (video conferencing) etc.

### **2.2.1 Meaning of E-recruitment**

E-recruitment refers to any types of recruitment operations that are carried out with the help of different electronic means and the Internet. (Holm *et al.*, 2014). It entails the posting of online open positions, the availability for applicants online fill-in form, and the use of an existing web-based database to hold the resumes of those who have applied. (Brando, Silva, & dos Santos, 2019). 'Attracting, sorting, and contacting applicants' are the three key processes of e-recruitment. All processes relating to the suitable design of portals which are web based and tracking potential applicants are referred to as 'attracting.' The following stage, referred to as "screening," is scrutinizing candidate profiles using sophisticated online methods and exams. E-recruitment tools are quite successful in the final stage, contacting – to get in touch with applicants, because they give efficient communication methods that may be automated. (Holm *et al.*, 2014). Due to the expansion of enterprise information systems and methodologies utilized and implemented for recruiting objectives, e-recruitment today also covers candidate management technology and the recruitment process in general, such as application tracking, selection, job offers, and rejection. These definitions suggest that the word "e-recruitment" can be used in two ways: as technology-enabled recruitment management methods and as the usage of an Internet-based recruitment source. (Holm, 2012).

### **2.2.2 Social Media Platforms**

According to Liu et al. (2018), social media platforms can better be defined as a group of online applications or operations that allow for the creation and exchange of user-

generated content (Hamm et al., 2017). Many authors such as Chung et al. (2018); Kaplan and Haenlein (2017) declare that social media platforms can have copious and wonderful opportunities for corporations, but a failure to manage how these applications are used can have important and undesirable consequences. In this context, Aggarwal et al. (2019), Duane and O'Reilly (2019) or Piskorski (2018) assert that a social media (business) profile is an online presence and platform used by corporations for marketing, advertising, public relations, recruitment, research, product and service testing. According to Thomas and Ray (2018), social media platforms fall into following categories: social networks (Facebook, Twitter, and LinkedIn), media sharing sites (Instagram, YouTube, Snapchat) and other (Pinterest, Google Plus).

## **2.3 Recruitment in the digital Era**

According to a study published by Financial Force, one of the main pain points of HR professionals is “The chaos of recruiting”. In the context of the economic growth of the last years, the hiring volume has risen by 20% over the course of the past 2 years. Still, the budgets assigned to recruiting have only risen by 13%. This leaves HR Managers with the challenge: How can recruiting be done smarter and more efficient?

The Digital Transformation of HR has opened new opportunities for organizations to implement smarter hiring strategies. Companies are using complex HCM systems, lowering the costs of Recruiting processes. Nevertheless, a study by Oxford Economics shows that the logistical cost of finding and absorbing a new worker, as well as the costs of lost output, is a staggering €6.000 per employee on average. This adds up to triple the budget allocated to employee training. In an ideal scenario, these costs are worth it, because they enrich your team with a valuable new member. However, the reality differs. HR professionals report that one of the challenges of recruiting is ensuring a high quality of hire. So what more can HR Managers do in order to implement a Smart Recruiting strategy in the era of Digital Staffing?

### **1. Research the candidate's Digital Reputation**

As HBR states: the internet is simply a vast social network, giving companies access to a wider talent pool, with higher chances of finding the right hire. However, Digital Recruiting means more than simply posting a job opening on LinkedIn. It also means that the traditional resume is being replaced by complex data. This data reflects the individual's experience and his/her digital print, which add up to a Digital Reputation of candidates.



Recruiters can use this data to get important insights into the skills of potential candidates. Correlations between social media profiles can reveal important aspects such as interests and hobbies, as well as an overview of the candidate’s personality.

**2. Use Skills Assessment tools**

In order to raise the quality of your hires, you need to make sure that the skills claimed by the candidates are actually reflecting his capabilities. The experience listed on a resume is no longer enough for a precise understanding of the candidates experience and skills. By using a pre-hire assessment tool, you can see whether a candidate can really work with the tools he needs to. This allows for better filtering of applicants within the early stages of the process.

Taking this to the business communication context Speexx works in, statistics show that the self-assessed language level does not match the actual language level. The candidate therefore overestimates his/her capability to work in a specific language. Online language assessment in the pre-hire stage is one of the easiest ways for companies to filter through the pool of candidates efficiently and in an objective manner

**2.4 Benefits of Digitalization on Recruitment**

a) Smart Recruitment:- There is research by Bersin’s firm which shows that nearly 40% of companies are using some form of AI in HR. Organizations like IBM, Huawei, SAP, Facebook, GE, and Hilton worldwide are already using this game changer technology to screen, interview and recruit new talent.

**Table 1. Transformation of the recruiting services in the digital era.**

Service	Competencies and responsibilities	
	Artificial intelligence	Recruiter
Recruitment	Processing large volumes of data on the candidates’ knowledge, skills, competencies and personal characteristics; collection and analysis of the data from different digital sources; preliminary screening of the candidates, resume analysis.	Making a job offer, defining professional and personal requirements for the candidates; outlining the core values the candidates have to meet; taking the final decision about employment.
Career development	Following the history of career development, analysis of career progression opportunities, evaluation of the employees’ productivity and professional behavior, making a program for competency gap reduction	Professional coaching, defining the best career trajectories, implementation of the mentoring system in the organizations, building

Service	Competencies and responsibilities	
	Artificial intelligence	Recruiter
		career plans and career requirements lists.
Training and professional development	Achieving efficiency in transmitting, tracking and evaluation of the corporate training results; individual approach to training with focus on individual characteristics of the employees.	Development and implementation of corporate training, development of instructional design and training program budgeting, taking decisions about the most appropriate approach/system to be applied.

b) Ease out the Screening and Interview process-Artificial Intelligence is also proving very helpful in automating the interview process by assessing candidates' word choices, speech patterns and facial expressions. AI can turn a 15 min video interview into a complete set of 20,000 data points on facial movements, innovation and word choice to evaluate a candidate.

c) Enhance Onboarding experience:-Recently Boston consultancy group found that Onboarding had a strong impact on employee retention. So it's essential to make the first impression worth for. Artificial Intelligence is helping HR in building this first impression strong and positive by redefining the whole employee joining process by creating journey maps, right from pre-hiring assessment and interviewing to Onboarding and employee orientation.

d) Data security and Transparency- Technologies has the power to ascertain whether certain corruption, bribery or other potential wrongdoings is about to be undertaken by an employee. Tools such as Big Data and In-memory technology allows companies to scan vast amounts of non-structured data (e.g. emails, texts, scanned invoices etc.)

**Table 2. Transformations in the patterns of HR technologies in the conditions of digitalization.**

Traditional patterns	Patterns in the conditions of digitalization
Focus on the process	Focus on the employees, their involvement and productivity
Temporary cloud solutions	Complex information framework
HR-programs are elaborated based on the linear structure of the company	HR-programs are elaborated separately per each category of employees

HR managers are involved into all HR processes	Some processes are automated due to high-tech solutions and can be used singlehandedly
Formation and use of databases	Formation and use of dynamic databases

### 2.4.1 Downsides of Digitalization on recruitment/HR

A few of the side effects of digitalization that human resources and recruitment have to bear are piracy, cybercrime, breach of privacy, and malware.

As easy as it has become to function using digital resources for HR stakeholders, it has become equally easy for criminals to infiltrate these systems – mandating better digital security across organizations and industries. Considering the confidentiality and personal nature of the information in store with human resources, this can prove to be a significant disadvantage.

Additionally, while the wealth of information and easy accessibility has allowed recruiters to find ideal candidates, it has also introduced increased retention woes for human resource managers.

Rivals can easily prey on excellent performers and lure them using multiple communication channels afforded to modern employees. This makes it harder to retain employees, requiring organizations to be wary of appropriately treating and compensating their workforce. While the influx of technology has led to an abundance of information – not all of it is reliable or substantial.

Verification and candidate research have become the basic needs of modern day HR management to avoid wasting resources on the wrong candidates.

## 2.5 Impact of HR Digitalization on Training and development

It is one of the constituent parts of the Ministry of Finance and Development Planning. Significant training and development provided to employees will lead to the success in the goals and objectives of the institution. In the past, government training and development took place through demos, lectures, book references, which took time usually time and effort for HR management to engage staff in training and development.

However, due to the introduction of digitalization in training and development, the human resources department has moved forward. Modern technology which has been used like displaying work-related videos, online courses, computerized learning methods, reading through soft copies has revolutionized teaching techniques. Once the employee joins the Ministry, HR management creates employee documentation and creates a personalized account for that employee. All SOPs (Standard Operating Procedures) of Ministry

operations are stored on the computer, and any employee who feels difficult in performing the work can refer to the SOP fed into the system and move forward with his tasks.

### **2.5.1 About e-learning Industry**

The provision of educational content through electronic media and information and communication technology is referred to as e-learning. E-learning is a form of electronic learning that reduce and supplements the classroom teaching process. Similarly to how knowledge is provided in a 'physical' classroom by a teacher who manages and delivers a prescribed curriculum (portions and sequence of course content to be taught, as well as assessments related to it) to a group of students, e-learning involves efficiently managing and distributing relevant content to consumers/customers online.(Punia, 2013). Content, delivery/distribution system, management system, and consumers or customers are the four main components of the e-learning industry.

A successful and gratifying 'e-learning experience' for a consumer/customer is the result of an efficient integration of all three aspects - content, management system, and delivery/distribution system (Punia, 2013). E-learning education has gained prominence rapidly in the last decade. With multifarious courses on almost all domains of learning available online, a person only needs a source of internet to access them. Person can access the course(s) from at any location. They can respond better to online learning/training because they can go back over the areas that they didn't understand. Cloud-enabled platforms for training, such as Learning Management Systems (LMS), are available to help with e-learning by acting as a repository for all courses in one place. A person can log in to his LMS account to access the course(s), review the status of courses completed, raise query, attempt exam, view result & also obtain online certification. Several web based online training tools are available now which allows one to deliver interactive online training sessions to anyone, anywhere and anytime. Digital tools are heavily employed by e-learning organizations to promote one's company & market their products. Tools like Facebook ads, Google ads are used heavily for this purpose. Webinars are also conducted for online audience generally giving orientation to a topic / course.

### **2.5.2 E-training**

Electronic-training is considered as a way of distance training through the use of web-based Technologies encompassing either Internet or Intranet that provide individuals with the required knowledge on specific selected topic or a specific specialty, with the help of

the computer-based digital technologies, sound tracks, videos, multimedia messages, e-books, emails, and discussion groups (Amara, & Atia, 2016-17). In e-training, the use of technology to teach is prominent (Mohsin & Sulaiman, 2013). This kind of training can be either in the form of face to face education or in the form of video recorded or pure online education. Origins of this term e-training goes back to the 1980s, as in the case with emergence of the term online training.

There are several terminologies indicating e-training such as distance training; virtual training; online training or web-based training (Amara & Atia, 2016-17). And E-training systems encompass myriad tools including writing technologies, communication technologies, visualization, and storage (Aparicio, Bacao, & Oliveira, 2017). Furthermore, e-training activities are not bounded merely using a computer or we-based technology as an artifact in the training process. Students or company employees that prefer using these modules in congruent with the development policies of their employers (Aparicio, Bacao, & Oliveira, 2016-17).

These processes are often carried out by HR department of the company with the help of a special institute or Education Company like the Liberia Institute for Publication (LIPA) that is specialist on the related subject. Companies prefer e-training to decrease their costs of education they spend for training their personnel. Considering the cost of training employees working in different geographies, it is an important solution to get rid of both waste of time and travel costs. In fact, different from the traditional face-to-face training techniques, e-training techniques help companies reach a considerably large number of education contents with low costs (Jackson et al., 2018). It is a more egalitarian way of educating employees when compared to classical methods of education, owing to the greater number and quality it serves to employees from various hierarchical levels and geographies. In the table below a good summary of the differences between classical face to face training and web-based digital e-training can be found.

### **2.5.3 Ways of implementing digital transformation of Training & Development**

In recent, employee training is required to be less time-consuming, preferably delivered on-the-job and in small chunks, remain efficient and relevant to the current job responsibilities of a particular employee. Thus, employees can improve their knowledge and skills without hindering business continuity and decreasing productivity. And digital transformation of employee training and development (T&D) is the answer to these modern demands.

Various tools can be effectively used for digital transformation of employee T&D:

**a) Learning management systems (LMS)**

An LMS is the core element of digitalized employee training. LMSs support creating and delivering learning materials to trainees, organizing collaboration and communication between trainers and trainees, assessing training results, tracking progress, and more. They are mostly used in online training but are also suitable for hybrid learning that combines traditional classroom training and e-learning. While earlier LMSs used to focus on course administration, modern systems center on learners and effective distribution of learning content. If you want to get a full picture of the key LMS functionality, you're welcome to check our interactive demo.

SharePoint-based LMSs can be a good example of learner-centered modern LMSs. They enable formal, informal, and social learning due to their collaboration, content and knowledge management capabilities. SharePoint LMSs provide a possibility to create reusable learning content within hours, deliver it on desktops and all types of mobile devices. As a result, employees may undergo training in their workplaces, at home and even on the go.

**b) Mobile applications**

Mobile applications serve as an extra element of digitalized training and extend the capabilities of LMSs. M-learning allows for 24/7 access to training materials from mobile devices. Thus, learning becomes available even for employees working at distant locations. Mobile apps can also be used at a post-training phase to brush up employees' skills. For example, audio simulation apps can help employees practice communication with customers through simulations of real-life dialogues.

**c) Extended reality technologies**

There are more improved forms of digital transformation of employee training and development that can make learning experience immersive – extended reality (XR) technologies. These technologies are getting more widespread, despite high costs and time budget of creating and deploying 3D e-learning content throughout XR environments. XR includes virtual reality (VR), augmented reality (AR) and mixed reality (MR) technologies. All of them offer advanced learning opportunities for employees, especially in such practice-focused industries as manufacturing and healthcare:

- **Virtual reality** immerses users in a completely artificial digital environment.
- **Augmented reality** projects virtual objects on the real-world environment.

- **Mixed reality** is an intermediate technology between VR and AR. Just like AR, MR projects virtual objects on the real-world environment, and it also anchors virtual objects to the real world enabling users to interact with them.

#### i) **Five (5) Challenges of Digital Corporate Training and How to Solve Them**

##### 1) **The glaze over**

With online training the dropout rates are high. Numbers vary from 35% churn to 54% for online courses and higher than 90% for MOOCs. When Time to Know started to work with a South American partner, they reported a staggering 60% drop-out rate from their flagship vocational training programs. Moreover, completion of online programs doesn't necessarily mean success, as described in this report: in some cases, it's higher than 60%. Simply staring at a screen can be boring, especially if you're new to a subject and not understanding what's going on, or if it's going too fast.

##### **Solution:**

Make your training courses interactive with videos, games and quizzes – keep learners engaged and following along in the process to make it a complete learning experience that involves all their senses. Make sure the training is available on all devices for easy access using next-generation solutions like with T2k Echo.

##### 2) **Not spending too much time**

You want to get your employee working as soon as possible with cost-effective training. You don't want the training to last forever but the amount of material you need to go through to properly train is lengthy.

##### **Solution:**

Break it up. A person can get overwhelmed by consecutive days of training and not retain as much information as they would if it was broken up into chunks and there was some hands-on work in between. This is also known as micro-learning or chunking, which doesn't just mean it's small but also very focused and personalized.

##### 3) **Creating quality training content**

Just like you need the right person for the job, you need the right training instructors, materials and methods.

##### **Solution:**

Get the right kind of training for the right position. Does the training fit the job? Are the instructors knowledgeable and accessible for questions? Make sure it's tailored to the position.

Find a delivery method: web-conference, web-based, simulation, blended learning, etc. that best accomplishes the desired learning outcome

#### **4) Lack of commitment from employees**

If management sees training as a bother then their employees will also see it as a mundane task and not treat it as a way to develop their education.

##### **Solution:**

Executives and managers must approach this process with commitment and support. If they see it as important and valuable then the trainee's will as well. There needs to be a way, for example, video conferencing, for employees to contact managers and ask questions throughout the process.

#### **5) Monitoring performance**

Did it work? Evaluating the training even with digital courses can be tough.

##### **Solution:**

Use a system that comes with built-in monitoring like Echo. This will allow you to monitor but also adjust the training sessions and instantly improve learning while still in the process, or for future training! Echo's comprised a set of tools that can plug into any learning environments. Its underlying principles combine the pillars of effective learning with best practices for scalable software platforms.

## **2.6 Influence of HR Digitalization on Performance Management**

Oxford Economics (2012) sites out that technology is also reshaping the performance of human resources (HR). HR leaders today can leverage tools that put metrics around things that once were difficult to measure or predict. Research reveals that the transformation of HR into a strategic business function is well under way and will continue over the next years. The process involves deepening and broadening collaboration between HR and other business units to improve the performance and analysis of talent management, and a greater focus on driving business results through the strategic use of technology.

Wolf (2015) elucidates that performance management is actually being transformed by social and digital technologies. Going paperless is now a standard in many organizations, but the changes are evolving beyond that. Now managers can capture and provide feedback to employees nearly every day, so that they always know how they're doing and where they stand (Wolf, 2015). This informal feedback can also be directly fed into the formal performance management process, which can help increase completeness and accuracy and minimize surprises.



### **2.6.1 Impact of Digitalization on Employees Performance**

The uninterrupted change that the digitalization of things is bringing along is having a major impact on the workforce/employees at various levels such as rationalization, knowledge, performance, efficiency, skill set, etc... Hereafter, the authors sum up the impact based on an extended literature review.

Digital educational platforms can improve the company's internal education by hosting trainings and development programs for employees and leaders, where they can attend the training in alignment with their work schedules, matched with their self-pacing and choice of topic. This new training methods support the acquisition of skills based on the strategies the organizations follow and which educational systems fail to deliver. However, this on the contrary, demands the employees to be able to continuously learn to be able to keep up with the advancements of technology and avoid rationalization in the long run (Gow and MacDonald, 2006). Until now, the rationalization of workforce due to the new digitalized world has majorly affected those employees with low qualifications due to the automation of production processes. However, the advancements in intelligent automation and artificial intelligence start to cast a shadow over higher qualified resources. Having a formal qualification is no longer a guarantee for a lifelong secured career, this is due to the fast changes in technology that can no longer be secured by the educational system. Nowadays, specially endangered are those professions in which precision and routine make a high portion of the daily job activity as these can be more easily automated and replaced by computer algorithms such as sales agents in call centers, clerical workers, packers, pilots and even judges. Regarding latter ones, it is argued that they fight an unequal competition against autopilots and algorithms which can navigate flawlessly and are sly decision takers. On the other hand, jobs that require a higher amount of creativity and social intelligence as well as entrepreneurship, seem to be more sustainable (Rinne and Zimmermann, 2017). Due to the before mentioned the future of work based on a digitalized economy also requires a new skill set which will enforce a sustainable working future. As an example, the outsourcing industry has started to demand specific hard and soft skills to be related to the advancements in technology to be able to deliver added value services which will help to win the competition against artificial intelligence and algorithms (Foerster-Metz & Golowko, 2017).

Within higher qualified jobs in the digitized world, a new working space is created that allows new collaborative working models due to cloud computing platforms. The software

industry is one of the trendsetters regarding this working model which is based on agile development such as Scrum with principles of Lean Production. This new type of collaborative working on clouds permits quick development sprints which constantly and in real time allow managers\leaders to test the performance of each delivered work package. Furthermore, it enables them to take decisions and direct work at a higher speed as well as to make the work performance of each team member transparent. Consequently, each team gains more empowerment. It also shows the tendency of simple execution as in an “assembly line”.

Due to the digitalized world, employees are no longer limited to work only from the office and for only one employer. This has brought changes in how workforce is being contracted. Many individuals chose today to work as digital freelancers so called “crowd worker” who can work from everywhere through mechanisms like clouds, skype, teleconferences, etc. These offer their work and skills through virtual crowdsourcing platforms in which organizations can outsource and post specific work packages. Due to this flexible work organization and flexible work time models, home office and variable time schedules will continue to increase due to the limited availability of qualified workforce. Through this trend, entrepreneurial risks are shifted from employer to employee. Instead of strict work instructions, new civil arrangements come to place. Flat hierarchies, as well as performance based remuneration, gain more significance. Employees turn into entrepreneurs which consequently demands entrepreneurial thinking as a key competence for the future work market place. In addition, work compensation is reduced to work packages so that costs last for the time of an assignment and hidden cost reserves of permanent employees can be reduced. Through these virtual platforms, the workforce also turns global and is exposed to higher competition. On the downturn, these “employees” have no sense of affiliation to companies and therefore, higher effort is requested to motivate and engage them towards the values, vision and mission of companies. At the same time contractors are not protected by syndicates or similar and do not have codetermination rights. They fall out of the labor law agreements as they are independent entrepreneurs. Furthermore, freelancers are not often integrated by law to the social security systems if the government has not foreseen any protection. (Rinne and Zimmermann, 2016; Staab and Nachtwey, 2016).

Performance surveillance has taken a new shape through the digitization of work steps for example, the logistics industry in which pickers hold a hand scanner enabled with cameras and microphones which are able to transfer movement data of the workforce.

Companies can use this information to define performance profiles, measure and compare the performance of diverse workforce. In addition to having a performance surveillance, a high technical process control is enabled through this hand scanners as these provide the employees with consecutive work steps to maximize workflow efficiency.

## **Chapter Three: Research and Analysis**

We are in a community of great digital development and digital transformation has great impact on human resources. It has already had an impact, and the digital transformation of human resources has been going on for several years. In order to understand the impact of these digital transformations on human resources, recruitment, training, and performance management concerns of the digital transformation of human resources, etc. are designed. This set of questionnaires has been conducted once. The total of 475 questionnaires were administered and collected, mainly distributed in person at the institution building. In order to improve the research effect, the questionnaire mainly adopts straight forward questions, and based on the comprehensiveness of the questionnaire, it did not limit the answering population, but the questionnaire for human resources workers has a separate topic.

### **3.1 Analysis of Questionnaire**

The questionnaire combines some specific perceptions of the general employees of the institution on the impact of human resource digitalization on recruitment, training, and performance, and refers to relevant content. The questionnaire set options for the improvement of the digital transformation of human resources, and investigates the challenges of digitalization of human resources department.

### **3.2 Research Design**

For the purpose of this research, the researcher used the cross-sectional research design. This design afforded the researcher the opportunity to gather data through the administration of printed questionnaire forms; evaluation of primary and secondary sources data (material ledger on HR digitalization, etc.) and interview with personnel.

### **3.3 Population of the Study**

The population of this research are employees from the departments of Administration, Budget, Fiscal Affairs, Economic Management and Comptroller and Accounting General at the Ministry of Finance and Development Planning.

### **3.4 Sample and Sampling Technique**

Sample is a portion of the population selected to represent the entire population and sampling technique is a process by which the sample is selected. Therefore, for the purpose

of this research, the researcher has used the accidental sampling technique thereby making use of employees that were available during the research questionnaires administering.

Sample size for this population is 475 employees who were randomly selected from the above named departments using the below mathematical approach:

$$n = \frac{N}{1 + \frac{e^2}{2}} = \frac{949}{1 + \frac{(0.1)^2}{2}} = \frac{949}{1 + 0.005} = \frac{949}{1.005} = 944.18 = (475)$$

Where: n = Sample Size

N = Estimated Population (100 Employees)

e = the maximum allowable error (10% or 0.1)

### 3.5 Data Collection

The researcher designed opened and closed ended structured questionnaire available in printed form; took a visit to the ministry building in person and distribute questionnaires to human resource staffs, Deputy Ministers, directors involve in digital processing, and the general employees to explain the purpose of the study in order to obtain permission and their cooperation. With permission granted, the researcher then distributed the questionnaires to the selected sample of the research population.

### 3.6 Data Collection Instrument

The research instruments that were used by the researcher to collect data are questionnaire in printed forms. The researcher also used person-to-person or telephone interview for detail information on questionnaire item as the need arose.

### 3.7 Empirical Analysis

Empirical analysis are necessary for gleaning insights into HR digitalization on recruitment, training and performance management. Initially, the conceptualization of digital HRM is not restricted to certain empirical methods and allows likewise for qualitative, quantitative, and mixed-method approaches. Given the anticipatable complexity of digitalization topics such as the impact of HR digitalization on recruitment, training and performance management, the use of both qualitative, quantitative and exploratory methodical approaches seems to be frequently indicated. Moreover, the conceptualization of digital HRM is not restricted to certain empirical topics. However, due to the micro-level nature of the concept, mainly micro-level issues surrounding the Ministry of Finance and

Development Planning are addressed. The two core objectives of the study on HR digitalization are briefly addressed in the following. Investigating the current HR technological tools in operation at the institution and its impact and the challenges of handling the digital tools. The distribution of organizations across the different ideal-types must initially be examined to uncover existing digitalization patterns. Moreover, given that HRM has rather struggled in realizing the strategic alignment of digital technologies (see the review by Marler and Fisher, 2017), it is of interest to uncover whether operational application still constitutes the dominant type or whether this situation has changed. Related to this challenge, it is of interest to determine whether specific real-types of digital HR technologies can be detected (e.g. different characteristic real-types of an operational application of digital technologies). In particular, real-types of strategic integration are of interest, and it should be investigated whether and if so, which digital HR strategies already exist. In this regard, it is of interest to determine if the digitalization of the organization and other companies is balanced by or if “lopsided” pairs combine high and low levels of digitalization. Moreover, the concrete managerial and technical interrelations between both digitalization domains are also of interest at the Ministry. Investigating these and further aspects should provide a detailed account of existing real-types of digital HRM. Regarding existing technologies, respective contexts and consequences are also of interest (e.g. Bondarouk and Brewster, 2016; Strohmeier, 20017). It is empirically proven that digitalization paths at the Ministry of Finance and Development Planning proceeded only within an ideal-type (“intra-type digitalization paths”). Moreover, HR started directly on a digitalized level without the need to successively traverse the preceding ideal-types (“born digitals”). Finally, the institution reduced their levels of paper usages when it invested in the digital payroll system that fast and accurate, but there is still a need for investment in online performance management system that help in fast evaluation.

### **3.8 Validity and Reliability**

In qualitative research it is important to be able to convey the validity and reliability of the conducted research. The concept of validity can also be considered as the credibility of the research and it refers to the extent to which the arguments, interpretations and results that are presented in the research demonstrate the subject they are supposed to refer to. Several factors such as poor samples, faulty procedures and misleading measurement can deteriorate validity in research (Collis & Hussey, 2017). Reliability in turn refers to the fact that the data that is collected from the research can be used to describe the topic that has

been explored. Reliability implies the repeatability of findings and the reliability of the data. Repeatability means that if someone were to conduct the same study again it should yield the same results (Collis & Hussey, 2014). In each study, researcher's own values, opinions, assumptions and understanding can have an impact on the reliability of the study. In this study, the subjective choices made by the authors have impacted the formation of the theoretical framework. It is also apparent that author's own interpretations impact the results of the study. In order to have an appropriate balance with validity and reliability, it is important to have an organized description of the research process and hence this thesis process is described as accurately as possible. When it comes to reliability and the repeatability of the finding, it was noticed that with the sufficient number of interviews, the same message and points started repeating over and over again in the interviews. Additionally, our interview guide/questionnaire is attached to the appendix of this thesis to increase the credibility of our empirical collection by sharing what questions we used to reach the findings of the study.

## Chapter Four: Case Analysis

This thesis is based on a case study. According to Merriam (1994), a case study research design is suitable when the aim is to create a deeper understanding of a phenomenon, and specifically useful when the research questions indicate a need for a new research direction. It is an established research design that is used in a wide variety of disciplines/courses, particularly in the social sciences. In this chapter, a brief history of the mentioned case study is discussed with its vision, mission and core values and the current digital technologies in use at the institution.

### 4.1 About the Ministry of Finance and Development Planning

The Ministry of Finance and Development Planning, or MFDP for short, was created in 2013 by an Act of the National Legislature, in line with international financial management best practices. The new MFDP effectively replaces the Ministry of Finance and the Ministry of Planning and Economic Affairs, with the mandate to formulate, institutionalize and administer economic development, fiscal and tax policies for the promotion of sound and efficient management of financial resources of the government. As custodian of the country's economy, the MFDP combines public finance, development planning and economic management expertise and experience to effectively manage the economy.

#### **Vision**

To be a dynamic and efficiently managed institution of public finance, economic management and development planning to achieve sustainable economic growth and transformation.

#### **Mission**

The Ministry of Finance and Development Planning (MFDP) is established to promote inclusive, sustainable growth and development through: Efficient resource allocation, equitable wealth distribution, prudent financial management, integrated development planning, well-coordinated economic management, Formulation and implementation of sound fiscal and economic policies.

#### **Core Values:**

a) **Transparency:** Simply making information available is not sufficient to achieve transparency. At the MFDP, we act visibly, predictably and understandably to promote



participation and accountability.

b) **Accountability:** We ensure that ALL individuals within the MFDP are answerable for all of their actions, and that there is redress when duties and commitment are not met.

c) **Integrity:** A strict adherence to moral and ethical principles is encouraged, with ABSOLUTELY ZERO TOLERANCE FOR CORRUPTION!!!

d) **Service orientation:** Ensuring timely, courteous and customer-focused consistent delivery of services, the MFDP remains in icon of service delivery.

e) **Effective Communication:** The Ministry ensures an efficient and effective communication process where messages are delivered promptly in a well-articulated manner to the intended audiences.

f) **Innovation:** Harnessing new ideas, tools and technologies, the MFDP brings innovation and value to service delivery.

g) **Commitment:** The MFDP remains focused in ensuring that all of our employees work assiduously to promote the organization's vision and mission.

h) **Teamwork:** The process of working collaboratively with a group of people in order to achieve a goal.

i) **Results Focused:** At the MFDP, organizational goals and outcomes are best quantifiable in terms of the SMART (S=Simple, M=Measurable, A=Achievable, R=Relevant and T=Timely) approach.

j) **Efficiency:** A leaner and more efficient MFDP translates into productivity, and elimination of waste and abuse.

## **4.2 Digital Trend/Development at the Ministry of Finance and Development**

After the Ebola crisis in Liberia, the Government of Liberia endeavors into several digital programs to enhance effective and productive service deliveries in the country. To mention a few: i) Electronic document and records management system, ii) Integrated Financial Management Information System (IFMIS), iii) c) Automated Transaction and Payroll System, iv) Performance Management System (PMS), v) Mobile Money Payment.

### **a) Electronic document and records management system**

Electronic document and records management system (EDRMS) is a type of content management system and refers to the combined technologies of document management and records management systems as an integrated system.

#### **a) Use**

Electronic document and records management is used by organizations to manage documents and records throughout the document life-cycle, from creation to destruction. Typically, systems consider a document or file to be a work-in-progress until it has undergone review, approval, lock-down, and (potentially) publication, where it will wait to be used. The version of the form that is saved containing user content will become a formal record within the organization.

Once a document achieves the status of a record, the organization may apply best-practice or legally enforced retention policies which state how the second half of the record life-cycle will progress. This typically involves retention (and protection from change), until some events occur which relate to the record and which trigger the final disposition schedule to apply to the record. Eventually, typically at a set time after these events, the record undergoes destruction.

**b) EDRMS software**

A range of software vendors offer these systems at an enterprise level (i.e. targeted at managing all documents and records within an enterprise).

These vendors have historically provided electronic document management systems and have acquired smaller records management system companies. The seamlessness of the integration and the original intention of the records-management component to manage electronic records typically sets the complexity of deploying and potentially of using the final system.

**c) Associated technologies**

- Business process management (BPM)
- Case management and matter management
- Enterprise content management (ECM)
- Scanning
- Web content management (WCM)

**d) Integrated Financial Management Information System**

Integrated Financial Management Information System (IFMIS) refers to the automation of public financial management (PFM) processes that involved budget preparation and execution to accounting and reporting, with the help of an integrated system for financial management of line ministries, spending agencies and other public sector operations. Core IFMIS system also integrates with other information systems, such as human resources, payroll & pension, e-procurement and revenue (tax and customs).

The scope of an IFMIS can vary from Government to Government to include simple General Ledger System to a comprehensive system covering Budgeting, Revenue Accounting, Expenditure Control, Debt Management, Resource Management, Human Capital Management, Payroll processing, Accounting, Financial Reporting and Auditing processes across central government or even including local government and quasi-governmental agencies.

e) **IFMIS Features**

i) **Financials**

- General Ledger & Internal controls manager
- Budget Execution and commitment accounting
- Receivables
- Payables
- Assets
- Cash Management & Treasury
- Global Consolidation system

ii) **Human Resources**

- Employee Self Service
- Advanced benefits
- Compensation Work bench and Performance Management
- iRecruitment
- Payroll, Time and Labor

iii) **Configuration & Security Settings**

- Customer Data Management
- Vendor Data management
- Product Information Management
- Financial Consolidation
- Asset Life Cycle Management

iv) **Asset Life Cycle Management**

- Enterprise Asset Management
- Self Service Work Requests
- Asset tracking
- Property manage
- Order Management

v) **Order Management**

- General Ledger & Internal controls manager
- Budget Execution and commitment accounting
- Receivables
- Payables
- Assets
- Cash Management & Treasury
- Global Consolidation system
- Project Costing

vi) **Project Costing**

- Employee Self Service
- Advanced benefits
- Compensation Work bench and Performance Management
- iRecruitment
- Payroll, Time and Labor
- Procurement

vii) **Procurement**

- Customer Data Management
- Vendor Data management
- Product Information Management
- Financial Consolidation

viii) **Support Structure**

Below is the high level model of the structure of the support service that can be availed for IFMIS:

- Domain Consulting for sharing best practices
- Business Process Re-engineering Services
- Tailored solutions to fit customer needs
- Extensive training for Knowledge transfer and in-house Capacity Building
- Change Management Program for quick adoption.
- Data Optimization and Migration Support
- Integration Design and Development.

f) **Automated Transaction and Payroll System**

The automated transaction and payroll processing system refers to the system of the payment of the monthly wages to the employees by the organization through an automated

means. It takes into account the number of hours or days worked by the employees, their pay rate, and their applicable deductions.

**i) Key features of payroll automation software**

Custom payroll software solution can perform all types of payments and automatically generate paychecks and stubs. Once you've entered all the required details, it can calculate wages by taking into account things such as:

- Salary payment schedules (weekly, bi-weekly, or monthly)
- Attendance and leave
- Overtime dues
- Double-time dues
- Bonuses
- Commissions
- Pay raises
- Wage deductions
- Taxes

**ii) Leave, deductions, and benefits administration**

Once payroll software identifies the gross income of an employee, it automatically determines and subtracts:

- Taxes
- Retirement savings
- Insurance deductions

**iii) A cloud-based solution**

Cloud software is a good choice if your HR team is distributed across multiple locations. All they need to access payroll data is a device connected to the Internet. A cloud solution is a no-brainer for large companies, but it's also becoming the norm for small and medium-sized businesses given the global trend toward remote working and social distancing

**iv) Direct deposit**

When your payroll software supports direct deposit, you can set up a systematic process with banks to transfer money from your company's bank account directly to your employees' bank accounts on a specific day every month

**v) Payroll reports**

Custom payroll management software development can free up your team from spending hours generating reports manually. The software can do all that work for you with

just a couple of clicks. You can use the information to see trends or to plan recruitment and staff retention strategies

### **g) Performance Management System**

Performance management system is the systematic approach to measure the performance of employees. It is a process through which the organization aligns their mission, goals and objectives with available resources (e.g. Manpower, material etc), systems and set the priorities.

#### **i) Key elements of the PMS:**

- Planning work and setting expectations
- Continually monitoring performance
- Developing the capacity to perform
- Periodically rating performance in a summary fashion
- Rewarding good performance.

#### **ii) Twelve (12) important Elements of an Efficient Performance Management System**

##### **1. Fairness and Accuracy**

You will achieve balance and accuracy if you look at an employee from multiple perspectives. Take into consideration the skill, capability, and job context.

##### **2. Efficiency**

Get rid of any performance management system that takes too much time to implement. It may end up detracting people from performing.

##### **3. Performance Elevation**

Do not focus on minimal expectations; focus more on how your employees can reach their upper potential. By linking the employee's performance to the objectives and initiatives of the company, you give them a chance to prove themselves.

##### **4. Guide on Compensation**

A performance management system should guide on compensation. It should, however, not be the main reason why you implemented within your organization. Many companies base their decision on whether to raise an individual's wages depending on the performance review. Yet if you do not do the review properly, it could lead to the situation where some people stagnate through no fault of their own.

##### **5. Incorporate Feedback from Multiple Data Sources**

Multiple data sources will eliminate the issue of bias. If the HR manager solely bases his review on his perception of an individual, then it will not be a fair review. He should

collect additional information from other sources such as peers, subordinates, suppliers, and even other managers.

#### **6. It Should Be a Basis for Coaching Skills Development**

The performance review should coach individuals on relevant skills. It should also be the basis of giving feedback, clarifying outcomes, and understanding specific action steps.

#### **7. Set Expectations**

Every organization has specific goals that each employee needs to meet. The performance management system must clearly specify what they are, actionable steps, and the time frame.

#### **8. Allow for Monitoring**

The employees should be able to track their performance. It helps build a feeling of ownership because they're in charge of their development. The employer also needs the right tools to ensure that everything is going according to plan.

#### **9. Basis for Improvement**

Every time an employee meets set goals, the employer should encourage them to move a step farther. The performance management measures and identifies the potential of the employee and provide the relevant resources to help them grow.

#### **10. Allows for Rating**

A sound performance management system should allow you to rate employees continuously. In this way, you can provide real-time feedback, thus allowing the employee to make relevant changes in how they work.

#### **11. Ongoing Communication**

An organization needs to have a culture of open communication. It will provide a forum for discussing goals, coaching, learning opportunities, among others. A sound performance system must incorporate this is one of the critical elements.

#### **12. Surveys**

Conducting surveys will help you gain an insight into what is happening within your organization. Pay attention to the level of employee engagement because it will have a direct impact on output. You also get to see the areas needing improvement. Incorporate these twelve critical elements we have highlighted above in your performance management system. You will see a perception change towards the reviews when employees see that the performance management process is fair, balanced, and for the greater good of the entire organization.

## **4.3 Mobile Money Payment**

The digital Liberia and Electronic Government (eGov) Activity is a digital program within the Ministry funded by the USAID Global Development Lab (the Lab), in collaboration with World Bank/Liberia. The program is intended to improve the human resource unit and other government line ministries and agencies and build on the momentum started both before and during the Ebola crisis to strengthen the Government of Liberia's (GoL) Digital Information and Communications Technology (ICT) capacity and improve connectivity to better prepare the GoL. The three-and-a-half-year activity, which began in October 2016, is implemented by two contractors – Chemonics International and IBI – with each firm responsible for one of the objectives and Chemonics providing overall coordination. One of the major scope of Objectives which is highly related to some of the functions of the Ministry of Finance was the Mobile Money component:

- It offers mobile money salary payments to civil servants at additional ministries. There are Memoranda of Understanding in place with the GoL and two mobile money service providers (MMSPs) that stipulate all ministries and agencies may enroll in mobile money salary payments.

- Civil Service Agency (CSA) technical assistance. MSTAR provided CSA with technical support to transition civil servant payment modalities to mobile money, and for the CSA Help Desk, which serves as a recourse mechanism for civil servants with inquiries regarding their payments. Digital Liberia would work to foster sustainability and include a rapid technical assessment of CSA's current payment processes to identify bottlenecks and the sources of recurring issues including recommendations for making the transition of payment modalities to mobile money and general payment processes more efficient, while reducing recurring payment problems.

### **4.3.1 Key Mobile Money Accomplishment**

Digital Liberia's initial primary mandate with regard to mobile money was to support the Civil Service Agency in developing an internal capacity to become the home of GOL mobile money salary payments. However, the formation of a mobile money unit in the Ministry of Finance and Development Planning shortly before the start of the project led to restructuring of project activities to incorporate that new unit and ensure both government agencies (CSA & MDFP) worked together. Since CSA did not have dedicated personnel for mobile money operations and MFDP Unit had hired 65 persons for their mobile money unit, the project worked with the two agencies to consolidate their mobile money activities, with



MFDP personnel handling most of the “leg work”. To achieve this, Digital Liberia helped structure the new unit into smaller subunits with clear objectives and TORs, followed by providing extensive training and tools. Two main types of training were provided: one covering general mobile money processes and methods for all the team members, and another for trainer-of-trainers to become trainers in other MACs to help them develop internal mobile money enrollment and communication systems.

## Chapter Five: Data Analysis and Interpretation

This study was conducted to explore the importance and impact of human resource digitalization on recruitment, training, and performance management at the Ministry of Finance and Development Planning, Republic of Liberia. The purpose/aim of this thesis paper was to explore the current human resource digital technologies in place at the Ministry of Finance and Development Planning. The data have been collected via questionnaires, and face to face interview/telephone with HR manager and supervisors, HR personnel and selected top management team working at the Ministry. The study was conducted at the Ministry of Finance and Development Planning and a sample of 475 employees were selected to participate in the study, and results obtained are discussed and analyzed in this chapter.

### 5.1 Demographic and cardinal questions administer to respondents

The demographic state the frequency of respondent's gender, age, education level, job title, working department, and their working experience within the Ministry.

#### 1. Gender Distribution

Gender	Frequency	Percentage
Female	175	37%
Male	300	63%
Total	475	100

Source: Researcher's Field Data, 2022

There were 475 respondents, 175 were females, and constituting 37% and 300 were males, constituting 63%.

#### 2. Age Range of Respondents

Age Range	Frequency	Percentages
20 Less than 30 years	175	37%
30 Less than 40 years	200	42%
40 Less than 50 years	70	15%
50 years and above	30	6%
Total	475	100%

Source: Researcher's Field Data, 2022

The data shows that 175 of the respondents representing 37% were between the age ranges of 20–30 years. Another 200 representing 42% were between the age range of 30 – 40years and another 70 representing 15% were the age range of 40 -50. The balance representing 6% were in the range of 50 years and above.

### 3. Educational Level of Respondents

Education Level	Frequency	Percentage
High School or diploma	14	3%
BSC	200	42.1%
Master	260	54.7%
PhD	1	0.2
Total	475	100

Source: Researcher's Field Data, 2022

From the data collected, 3% of the respondents consisting of 14 were high school graduates, while 200 of the respondents were Bachelor's degree holders representing 42.1% and 54.7% of the respondents consisting of 260 were Master's degree and 0.2% of the respondents consisting of 1 was a PhD holder.

### 4. Job Title of Respondent

Job Title	Frequency	Percentage
Head of Section	150	31.5%
Supervisor	100	21.1%
Technician	200	42.1%
Administrative Officers	25	5.3%
Total	475	100%

Source: Researcher's Field Data, 2022

From questionnaire data collected, it shows that most of the respondents were technicians. This represents 42.1% while 31.5% of the respondents were head of section and 21.1% and 5.3% were supervisors and administrative officers respectively.

### 5. Length of stay of Respondents in the Ministry

Experience	Frequency	Percentage
Less than 5 years	25	5%
5 – Less than 10 years	50	11%
10 – Less than 15 years	150	32%
15 years and above	250	52%
Total	475	100%

Source: Researcher's Field Data, 2022

Most of the respondents that participated in the study have been in the employed for 15 years and above constituting 52%, while 32% of the respondents have 10 to 15 years of working experience, 11% have 5 to 10 years of experience and 5% have less than 5 years of working experience.

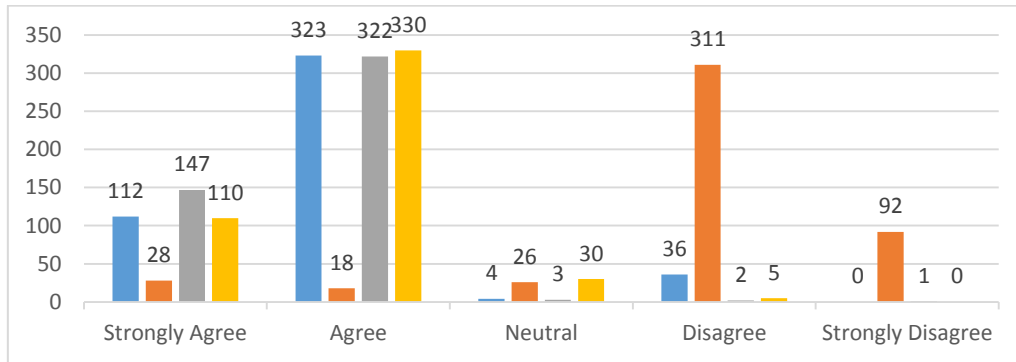
### 6. Departments within the Ministry of Finance

Department	Frequency	Percentage
Administration	150	32%
Budget & Development Planning	50	11%
Economic Management	25	5%
Fiscal Affairs/Comptroller & Accounting General	250	52%
Total	475	100%

Source: Researcher's Field Data, 2022

From the data gathered, it shows that most of the respondents were from the department of Fiscal Affairs & CAG representing 52%, while 32% of the respondents were from the Administration department and 11% and 5% were employees of the department of Budget & Development and Economic Management respectively.

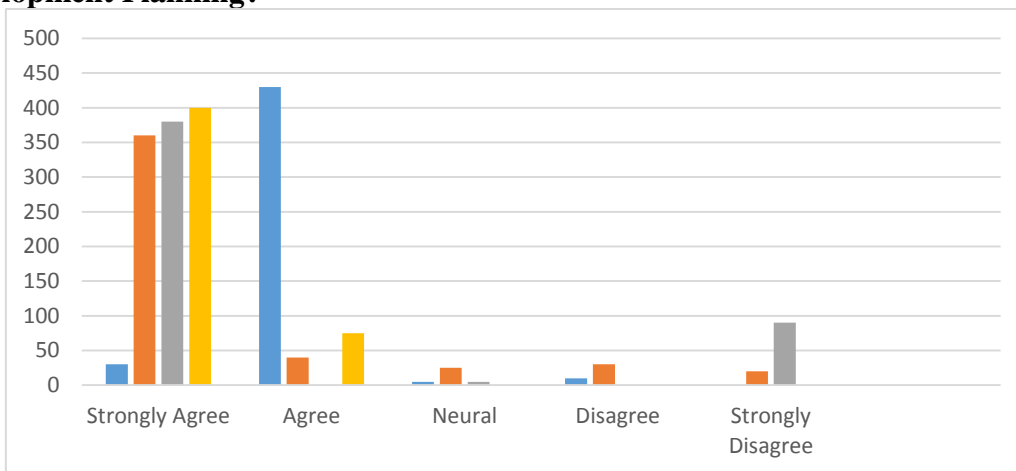
### 7. Current HR digital technologies at the Ministry of Finance and Development Planning



Source: Researcher's Field Data, 2022

Graph 7 shows that majority of the employees agreed that at the Ministry of Finance and Development Planning, payroll automated transaction system, Integrated Financial Management Information system (IFMIS), and Mobile Money System are all digital technologies that are currently in use, while 311 employees are in disagreement that the electronic document and record management system has not been initiated or use fully at the Ministry.

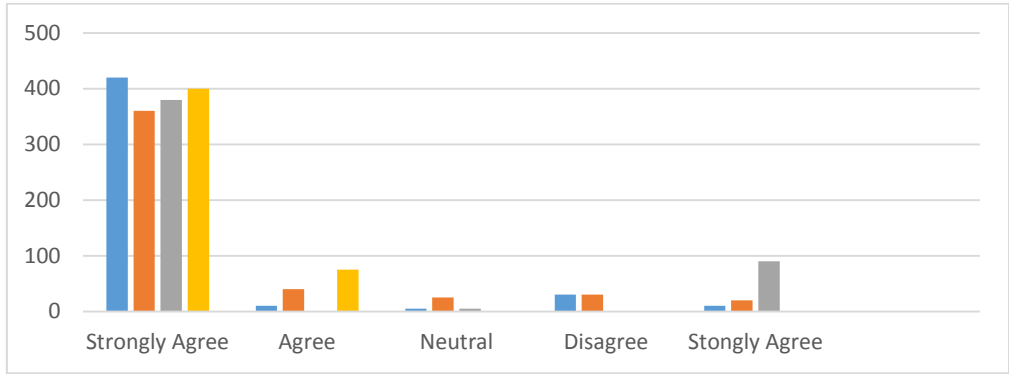
**8. What are the usage of the digital tool within the Ministry of Finance and Development Planning?**



Source: Researcher's Field Data, 2022

For the usage of digital tools, 400 of the respondents agree that the usage of the digital tools within the Ministry of Finance and Development Planning and its important roles in the Liberian economy are used for Payment of salary and other financial transaction processes such as managing general Ledger & Internal controls, Budget Execution and commitment accounting, and for payment of salaries to remote employees of government except the document and record management system which will be used for storing large data and easy retrieval of data has not been deploy within the Ministry.

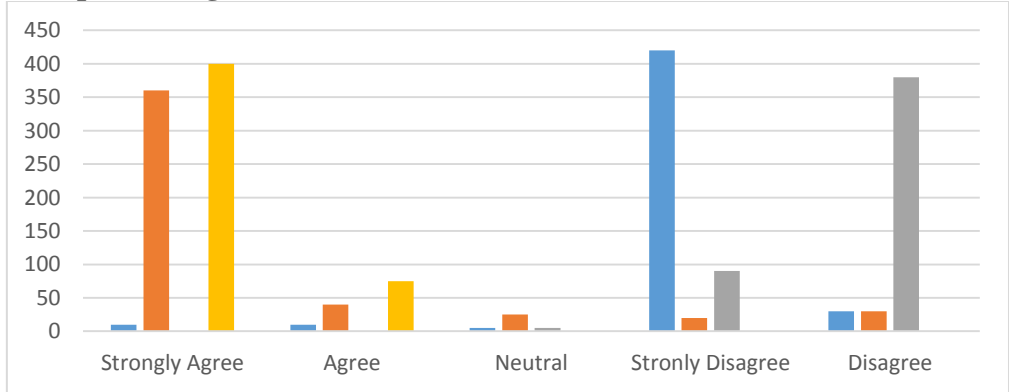
**9. What are the challenges of using the technologies in place?**



Source: Researcher’s Field Data, 2022

The data show the challenges of using the digital tools at the Ministry of Finance and Development Planning. They range from System malware, poor internet connectivity (Payroll automated transaction system), Outdated data, getting incorrect information, It takes time and costs money (Electronic document and record management system), Piracy, cybercrime, breach of piracy, data security (Integrated Financial Management Information System), and Applications with security flaws, No payment security when the phone is lost, exposed mobile wallets (Mobile money payment system). All respondents strongly agree.

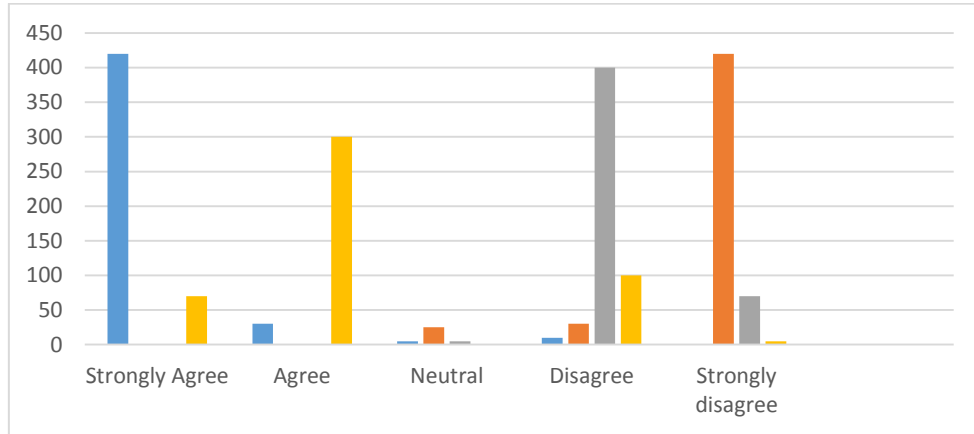
**10. Impact of digitalization on recruitment at MFDP**



Source: Researcher’s Field Data, 2022

Graph 10 illustrates the impact of digitalization on recruitment at the Ministry of Finance and Development Planning. 420 employees strongly disagree that the Ministry employs base on digital knowledge but rather on general or political patronage basis. 360 respondents strongly agree that the MFDP website is constantly updated with latest vacancies, while 380 respondents disagree on the Human Resource Management Information System (HRMIS) been used by the Human Resource Unit of the Ministry, and 400 respondents strongly agree that HR still use traditional method for recruitment at the Ministry of Finance and Development Planning.

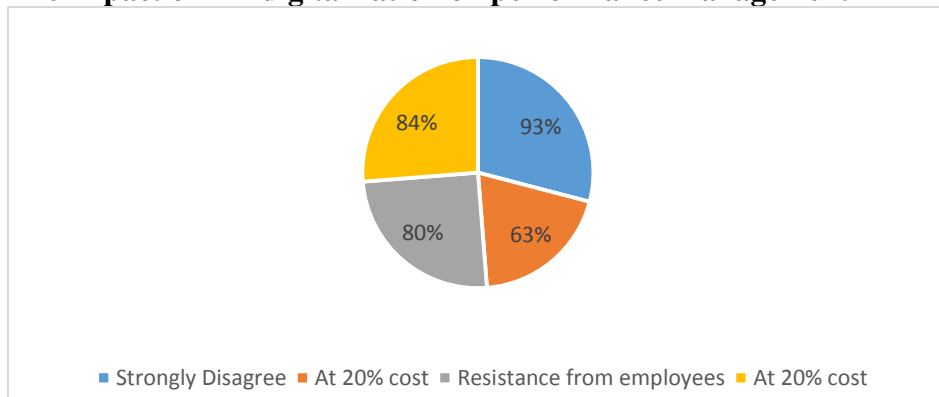
**11. HR digitalization on training and learning**



Source: Researcher’s Field Data, 2022

From the data gather, it shows that at the Ministry of Finance and Development Planning, 475 respondents interviewed and 430 respondents stated that HR provides new employees with orientation and onboarding tips. From the 475 respondents, 420 respondents strongly disagree that HR has establishes any e-learning programs for employees and 400 out of 475 respondents disagree that HR are using new digital approaches for training programs, while 300 respondents agree that HR plans ahead for training program during the budget preparation time.

**12. The impact of HR digitalization on performance management**



Source: Researcher’s Field Data, 2022

The data analysis shows that at the Ministry of Finance and Development Planning, out of 475 respondents interviewed, 440 respondents stated that HR does not operates a digital appraisal system. From the 475 respondents, 300 respondents stated that HR will reduce 20% cost if performance appraisal are done electronically and 380 respondents confirmed that the most challenging aspect of performance has to do with resistance from employees during appraisal period. And 400 respondents agree that digital performance management system will lower the use of papers by 20%.

## **5.2 Discussion**

This study has been carried out to explore the importance and impact of human resource digitalization on recruitment, training, and performance management at the Ministry of Finance and Development Planning. The usage of digital- recruitment tools gives several advantages to organizations. The electronic human resource system, such as e- recruitment, can reduce workloads by computerizing employment forms, scanning of job resumes, and administrative responses to candidates. For example, e- recruitment normally consents candidates to finish making an application online or transfer a resume to the virtual platform. These practices allow companies to target candidates, including foreign job seekers. This method can intensely increase the number of candidates for each vacancy and attract more qualified candidates.

Digital-learning and development technologies provide significant benefits to organizations, such as increasing training velocity and improve training adaptability. In the same manner, e-learning and training becomes more virtual and mobile. This mobile learning is able to provide the workers with more work-significant interactive media meetings that can be arranged on demand managers and supervisors. Mobile learning enhance a person's enthusiasm to train. Institutions can use it to provide more adaptable training and improve the training speed, significantly reducing the costs.

Digital-performance management (appraisal) tools and measures can evaluate the extent to which employees can be valued and compensated accordingly. With the help of digitalization technologies, the performance appraisal system helps make appraisal processes clearer for meeting divisional and organizational goals. The data from the related digitalization technologies enables the HR manager and personnel to see every employee's performance and compare their respective performance with that of the co-workers within the institution. Sharing this data with workers gives a one-of-a-kind insight on employee's presentation and how it benefits the whole organization, while it can also assist with directing employees for better efficiency and improved performance.

## **5.3 Empirical Findings**

This study sought to find answer to four key empirical questions relating to the exploration and impact of HR digitalization on recruitment, training and performance management at the Ministry of Finance and Development Planning. The four questions are:

1. What are the current HR digital technologies in place at the Ministry of Finance and Development Planning?



2. What are the usage of the digital tool within the Ministry of Finance and Development Planning?

3. What are the challenges of using the technologies in place?

4. What are the impact of HR digitalization on recruitment, training and performance management?

In response to the question, what are the current HR digital technologies in place at the Ministry of Finance and Development Planning, 323 employees agreed that at the Ministry of Finance and Development Planning, payroll automated transaction system is in use, 322 respondents agree on the current use of the Integrated Financial Management Information system (IFMIS), and 330 respondents confirmed the use of the Mobile Money System, while 311 employees are in disagreement that the electronic document and record management system has not been initiated or use fully at the Ministry. When the respondents were also asked, what are the usage of the digital tool within the Ministry of Finance and Development Planning, majority of the respondents agree that digital tools employed are used for Payment of salary and other financial transaction processes (430), managing general Ledger & Internal controls, Budget Execution and commitment accounting (380), and for payment of salaries to remote employees of government (400) except the document and record management system which will be used for storing large data and easy retrieval of data has not been deploy within the Ministry representing 360 respondents. Some respondents were also asked, what were the challenges of using the technologies in place at the Ministry of Finance and Development Planning? All respondents stated that these challenges range from System malware, poor internet connectivity, Outdated data, getting incorrect information, timely and costs money, Piracy, cybercrime, breach of piracy, data security, and applications with security flaws, No payment security when the phone is lost, exposed mobile wallets. Findings on recruitment, training and performance management stated that the Human Resource Unit has some gain on recruitment such as their use of social media for job advertisement and has no gains on digital training and digital performance management. These findings are again in line with the intent of the purpose of exploring the digital trend within the Human Resource Unit and Ministry as a whole

## **5.4 Result**

In this section, there searcher provides a summary of the research results, taking into consideration the desire objective in line with key findings. Upon summarizing the study, conclusions were drawn from which recommendations were made.

The primary purpose of the research was to explore the current human resource digital technologies in place at the Ministry of Finance and Development Planning. The duration of the research is from 2017-2022. Four hundred seventy-five (475) persons of the total population of Nine hundred forty-nine (949) were used as the sample size.

The Survey was carried out using individual interview questionnaire and visit made at the Ministry of Finance and Development Planning institutional building in Monrovia, Montserrado County Monrovia, Liberia. From the analysis obtain from the research; it was clearly revealed that there are digital technologies currently in place at the Ministry as indicated in 5.1 (7). That digitalization has impacted the efficiency of the recruitment section as evident in 5.1 (10). That more has to be done on digital performance management system and training and e-learning programs as stated in 5.1 (11 & 12). Discussion of the findings were followed top resents facts as they were discovered during the process of the data analysis. Conclusion was reached that recruitment, training and learning, and performance management are all interrelated and have a major effect on an organization and its employees. Digitalization has reveal that it has majorly changed the workforce population, the skill set needed, and the way to interact and collaborate as well as to communicate within an organization not only from employee's side but also from the leadership side. Recommendation (solution) is that the ministry should add on the existing digital tools on hand and potentially make way to digitize the performance management system, and training and learning process.

## **Chapter Six: Conclusion**

This research paper has explored the current digital tools in place and the impact of human resource digitalization on recruitment, training, and performance management within the Ministry of Finance and Development Planning, Republic of Liberia. Recruitment, training and learning, and performance management are interrelated and have major effect on an organization and its workforce. Digitalization has shown that it has majorly changed the entire workforce population, the skill set needed, and the way to interact and collaborate as well as to communicate within an organization not only from employee's side but also from the leadership side.

Our main findings show that the Ministry of Finance and Development Planning from the analysis obtain from the research, it was clearly revealed that there are digital technologies currently in place at the Ministry, digitalization has impacted the efficiency of the recruitment section, and more has to be done on digital performance management system and training and e-learning programs. Furthermore, our findings show a need for the Human Resource Unit of the Ministry of Finance and the Government of Liberia to increase budgetary allotment for the establishment of a digitalize workplace.

### **6.1 Recommendation and Improvement**

Based on the findings and results of the study, the necessary recommendations are forwarded to the Ministry of Finance and Development Planning and Government of Liberia and other line Ministries and Agencies.

1. The Ministry of Finance and Development Planning should invest in a digital appraisal system which will in return be a huge benefit to the institution and the employees at large by reducing the maximum use of paper during appraisal period. The solution for this problem is for government to increase the budgetary allotment for the human resource department.

2. Ministry of Finance and Development Planning and the Government of Liberia should increase more funding and attention in digitizing the Civil Servant Agency and provide capacity development for Civil servants. The solution for this problem is for government to increase the budgetary allotment for the human resource unit and to negotiate with other development partners to increase scholarships opportunities for Civil Servants.

3. The Ministry of Finance and Development Planning should increase budgetary

allotment for training and e-learning processes which will provide and empower the human resource department to create digital learning programs and modes such as virtual classroom, The MOOC (Massive Open Online Course), Mobile learning and etc. The Ministry and Government should also improve poor internet facilitate.

4. The Ministry of Finance and Development Planning must embark on vigorous selection process by bringing in more productive and digital workforce. The Ministry should not employ on the basis of political patronage but rather on general competency and digital qualification. The solution to this problem is for top management to allow an independent recruitment process to be carried out by the human resource department.

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