

## **Chapter I: Introduction**

### **1.1. Study background:**

E-government has become one of the most interesting concepts introduced in the field of public administration at the end of 1990, although it was not clearly defined and understood among scholars, researchers, practitioners of public administration (Moon, 2002) . Governments all over the world exist to protect and serve people. Subsequently, delivering Service is one of the major functions of any government in the world. Governments seek faster and easier techniques of service provision. Thanks to the internet, in the last two decades governments have changed the methods of service delivery, from traditional to modern, by adopting an Electronic government system (E-gov). (Samuel, Doctor, Christian, & Baradi, 2020) have conceptualized that the term E-government refers to the use of information and communication technology (I.C.T.) by government institutions for delivering services to citizens, likewise, e-government is there to assist both public and private sectors to achieve their aims and improve their performance (Amanbek, Balgayev, Batyrkhanov, & Tan, 2020).

Digital Government is another name for (e-government), that we have defined above. In research and studies of Digital government, scholars have found that I.C.T.s provide several benefits to the public administration including the increase in effectiveness, efficiency, transparency, and improvement of communication between Government and citizens. Also, the use of I.C.T.s by government agencies enables citizens to access information easily. The literature has shown that adopting e-government without effectiveness makes it harder and difficult to achieve government growth, poverty reduction, economic growth, sustainability of the nation, and citizens' prosperity. Transformation of public administration into a digital public sector is the era necessity, it is required to enhance accountability, transparency, effectiveness, efficiency, and stakeholders' ease of information accessibility in both sectors public and private. Electronic

Government has emerged from the field of E-business where organizations and companies have to collaborate electronically via the Internet and related technologies with suppliers, customers, and other stakeholders for effective and efficient delivery of services. The application of connected Government could imply dissimilar objectives and various classes of transformation. Worldwide, many countries adopt and implement E-government systems for the betterment of service delivery (Monteiro, 2016).

Today we are in the 21st century, which is characterized by hard competition, among governments in various areas, including technology adoption. Therefore, full adoption of E-government is necessary to remain competitive. But challenges of technology adoption still there. (Glyptis et al., 2020) has demonstrated that factors affecting the implementation of e-government arise in both environments, internal and external. Although the benefits occur in the change of traditional public administration into digital public administration, in practice, the process of transformation is difficult and needs to take the characteristics of the country in consideration, as well as the public sector infrastructure. A clear example of this argument is the republic of Sudan, whose National communication Center has the vision that is, achieving a knowledge society through a regulated and fair environment, with advanced communication systems and equipment, and creating a society satisfied with public services electronically. The Government of Sudan aims to deliver all major public services electronically to increase and enhance effectiveness and efficiency and to increase citizens' political participation level (E-participation) (Eltahir & Eldin, 2017). Many countries in different continents have implemented e-government, but its success rate in developing/transitional countries is only fifteen percent (15%) (Heeks, 2008b).

Although there is a progressive improvement regarding E-government adoption across the world, the implementation of e-government diffusion is still far away from the satisfactory stage in Developing countries such as Sudan (UN

Survey, 2022). Over the past ten years ago, the Government of Sudan has made vast efforts to achieve the above-mentioned objectives, however, Sudan's e-government has achieved fewer improvement estimations and perceptions in terms of provision and adoption of e-services compared with other countries with the same economic level (low income), this is according to U.N. e-government survey 2020. Sudan ranked 170 of 193 countries included in the survey. In 2022 Sudan ranked 176 of 193, it shows the decline of e-government performance in Sudan. In addition, a report by the U.N. shows that only 22% of the African population accessed the Internet (Lapõnin, 2018). Moreover, a study conducted by (Meiyanti, Utomo, Sensuse, & Wahyuni, 2019) revealed that in more than forty (40) projects of E-government implementation in developing countries; 35% were failed, 50% were partial failures, and only 15% of E-government implementation projects were succeeded. Additionally, (Brohi, 2019) argues the rates of e-projects in Pakistan, the study found that 34% of E-schemes were completely failed, 49% of electronic projects were partially unsuccessful, and only 15% of e-government projects were succeeded. Sudan is one of the developing countries in Africa. E-government has been adopted but, the performance of the E-government in Sudan is still poor, built on many indicators such as low levels of EPI reported by (UN Survey 2020 & 2022). Look at figure (1.1), (1.2), (1.3) and (1.4) bellow. Furthermore, the complaints of Citizens regarding the lateness of their electronic transactions feedback, also shows the poor performance of e-government in Sudan.

On the other hand, successive initiatives of E-government implementations require a stable political environment, but Sudan witnessed political instability for a long time. In the condition of Sudan, there have been many turbulent political regimes ranging between civilian and military systems. The armed forces in several developing nations are well-known for taking over elected civilian governments via successive military coups, which causes socio-economic, and political instability. Sudan has experienced many military changes and internal

civil conflicts which caused political instability (Mahdi & Dawson, 2007). Moreover, Sudan has been subjected to American economic sanctions because according to the U.S view, Sudan was considered the state that sponsors terrorism, therefore, the U.S.A. blacklisted it in 1993. There was a huge package of sanctions but the important one which supports this research is (the prohibition of direct or indirect exportation or re-exportation from the U.S.A. or any of U.S.A. Persons, of any services or goods or Technology; involving software, technical data, or any other information technology to Sudan) (Ibrahim & Si, 2020) however, recently the U.S. has revoked the longstanding economic sanctions against Sudan, therefore, for the time being, persons of the U.S. are generally able to do business, investment, and trade with entities or individuals in Sudan (Government, 2022).

despite the increasing global emphasis on e-government implementation, there is a notable lack of comprehensive studies focusing specifically on the complexities of e-government implementation in Sudan. While there is existing literature on e-government adoption and implementation in various contexts, there remains a significant research gap in understanding the specific challenges, barriers, and opportunities for e-government implementation within Sudan's unique socio-economic and political landscape. Therefore, there is a need for further investigation into the complexities and nuances of e-government implementation in Sudan, including an in-depth exploration of factors such as infrastructure limitations, bureaucratic hurdles, digital literacy, and the impact of political instability on e-government initiatives. This study attempts to fill the above gap.

## 1.2 E-Government World ranking of Sudan from 2014 to 2022:

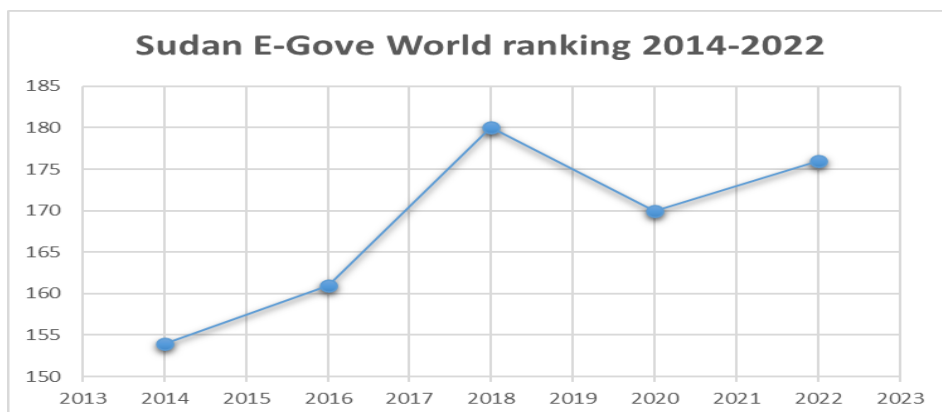


Figure (1.1) Sudan e-Gove Ranking through five years (2014-2022), source: Author.

## 1.3. Comparison of Sudan and some African countries in E-government performance

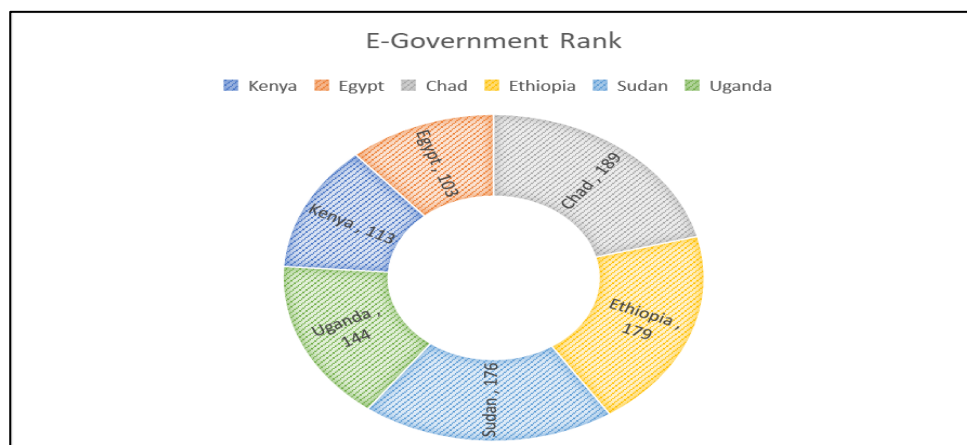


Figure (1.2) EGD World ranking of Six African countries, Source: (UN Survey 2022)

### 1.3.1. Comparison of E-government Development Index of Six Countries in 2022:

The status of e-government development in the member states of the United Nations is displayed by the e-Government Development Index. The E-

Government Development index evaluates a nation's website development practices in addition to its access features, like its infrastructure and educational attainment, to show how it uses information technologies to support its citizens' inclusion and accessibility. Three crucial facets of e-government are measured by the EGDI, which is a composite of three factors: human capacity, telecommunication connectivity, and online service availability. The three most significant e-government dimensions are: (1) the breadth and quality of online services (Online Service Index, OSI); (2) the state of development of telecommunication infrastructure (Telecommunication Infrastructure Index, TII); and (3) inherent human capital (Human Capital Index, HCI). The EGDI is a mathematical weighted average of these three normalized scores (Department of Economic and Social Affairs United Nations, 2022). These indicators are all composite measurements that can be separately retrieved and examined. The EGDI is measured by the following scores (from 0 to 1):

| <b>Level</b>          | <b>Score</b>   |
|-----------------------|----------------|
| <b>Very high EGDI</b> | 0.75 to 1.00   |
| <b>High EGDI</b>      | 0.50 to 0.7499 |
| <b>Middle EGDI</b>    | 0.25 to 0.4999 |
| <b>Low EGDI</b>       | 0.0 to 0.2499  |

Table (1.1) EGD measurement values, Source: (Department of Economic and Social Affairs United Nations, 2022)

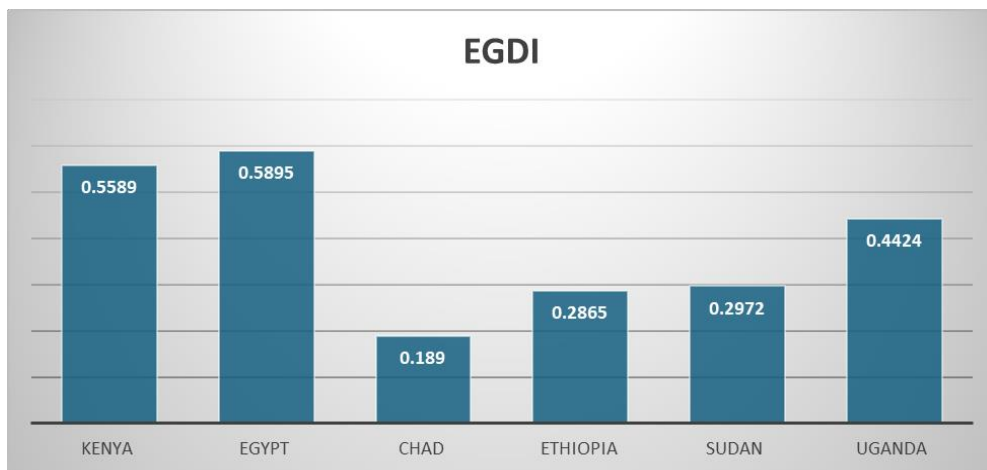


Figure (1.3) Comparison of EGDI of Six African countries. Source: (UN Survey, 2022).

### 1.3.2. Comparison of E-participation Index (EPI) of Six Countries:

The E-Participation Index (EPI) was created as a supplement to the United Nations E-Government Survey. Understanding e-participation begins with the process it represents. It begins, as a sine qua non, with the informative level, in which the government provides basic information to its constituents, followed by the second, a two-way form, in which people are invited to provide feedback to governments, and finally, 'the partnership option,' in which citizens become the protagonists by leading the policy-making process. The latter framework is similar to the three-tiered structure used in the UN E-participation framework. Since its inception in the 2003 edition of the Survey, the EPI has been a multidimensional structure made up of three fundamental components: e-information, e-consultation, and e-decision-making. Based on the figure below, Sudan's value in terms of the e-participation index is 0.0455 which indicates a low level. This research attempts to investigate and understand the critical factors that affect the e-government implementation diffusion in Sudan.



Figure (1.4) Comparison of EPI of Six Countries. Source: (UN Survey, 2022).

### Components of E-participation

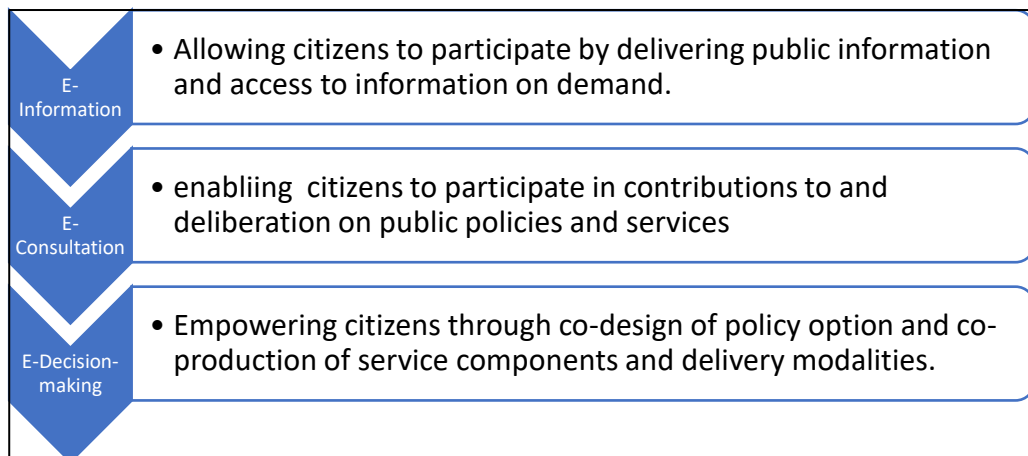


Figure (1.5) indicators of E-Participation. Source: (UN Survey, 2022).

#### 1.4. Research questions:

Based on the background presented above, the research problem can be formulated by the following main questions:

1. From the perspective of the public servants, what are the critical factors affecting the implementation of E-government in Sudan?



2. What are the relationships among identified E-government critical factors for assessing E-Gove diffusion in Sudan?
3. Are public servants adaptable to the rapid advancement of technology in Sudan?

#### **1.5. Research Objective:**

1. To investigate and understand the complexities of e-government implementation in Sudan.
2. To develop a model of e-government complexities in the context of Sudan.
3. To investigate the adaptability of public servants to technology and online services in Sudan.
4. To examine patterns of e-government complexities in Sudan as a developing country.
5. To identify the relationships between the critical factors and e-government implementation

#### **1.6. Research Benefits:**

1. The exploration of the complexities of e-government implementation in Sudan will lead to the identification of mechanisms for overcoming the critical factors affecting e-government adoption in Sudan.
2. Discovering the extent of public servant adaptation to new technology, helps the government to develop policies of performance betterment.
3. The development of the E-government model in the context of Sudan contributes to the literature and knowledge of digital government.

#### **1.7. Scope of the research:**

1. Temporal boundary (2015- 2024).
2. Spatial boundary (Government agencies in Khartoum-Sudan).

### 3. Objective boundary (digital government and related areas).

This research focuses on the complexities of e-government adoption in Sudan, from the perspective of public servants in Khartoum-Sudan in all domains; G2G, G2B, and G2C.