

SECTION 1. DIGITALISATION OF THE ECONOMY

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THE DIGITALIZATION PROCESS IN SUB-SAHARAN AFRICA: ISSUES AND WAYS OF DIGITAL ECONOMY DEVELOPMENT IN SUB-SAHARAN AFRICA

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Digital transformation or digitization is a fairly new concept that refers to the dissemination and use of digital technologies (Internet, mobile phones and other tools and systems), to digitally collect, store, analyze and exchange information (World Bank, 2016). Digital technologies have experienced a strong expansion in sub-Saharan Africa. The World Bank's 2016 Digital Dividend report notes that in most developing countries, more households have a mobile phone than those with access to electricity or clean water, and that almost 70% belong to the bottom quintile of the population. In addition to this, in the sub-Saharan Africa region there is one new mobile phone user per second (IMF, 2019). These findings amply demonstrate the speed and success with which digital technologies have been adopted.

However, despite this strong adoption of digital technologies, the African continent and in particular SSA still lags behind the rest of the world as shown in the graph below.

This delay that the ASS is experiencing is due to several reasons that we will discuss throughout this presentation and then we will discuss the transmission channels through which digitization can impact the economies of ASS. The rest of the work is organized as follows: a first section to discuss the infrastructural reasons, the second section is devoted to the development of human capital, the third section will talk about political will and the fourth section will identify some transmission channels.

It is difficult to speak of a digital development without the necessary infrastructures which constitute the basic support. Indeed, studies on the issues of digital development in Africa agree on the fact that while there have been

real progress in digital transformation in Africa, it is still unevenly distributed between low-income countries and those with higher incomes intermediates (Alper and Miktus, 2019; Simon and Yirou Li, 2021). Thus, an interesting study conducted by Alper and Mikus, which will lead to the calculation of a digital access index in SSA, will show that although this index has improved over time, indicating a good evolution of the digital transformation in Africa, however, some countries are lagging behind. The figure opposite illustrates this observation very well.

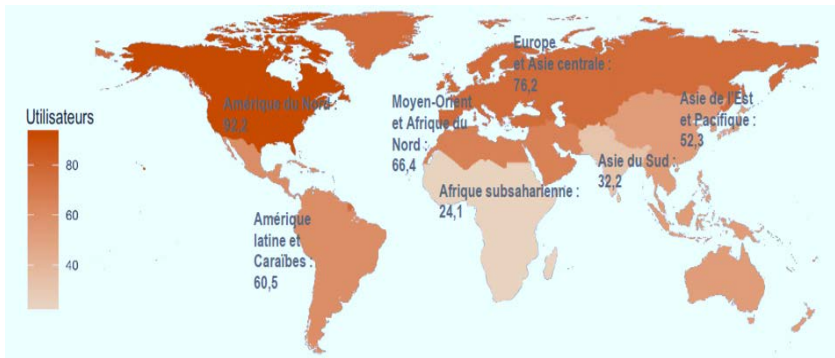


Figure 1. Internet penetration in the world in 2017 (in percentage of the population)

Source: International Telecommunication Union

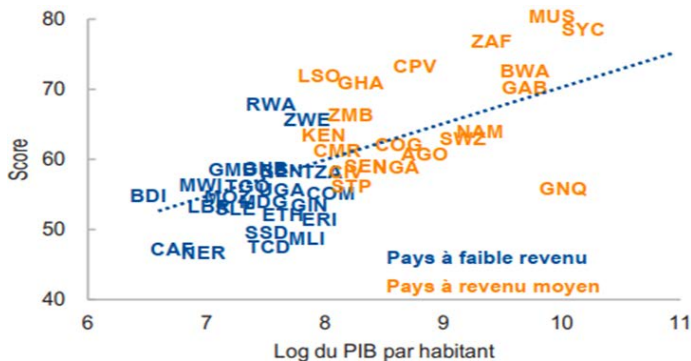


Figure 2. Digital access index by group of countries in sub-Saharan Africa

Source: Alper and Miktus, 2019

It is clear that without financial means, to put in place the necessary telecommunications infrastructures, low-income countries such as SOUTH Sudan, Burundi, the Central African Republic, Chad ... are lagging behind more than middle-income countries such as Gabon, Cameroon, South Africa, Ghana...etc. that is to say, infrastructure remains a major obstacle to digital development in SSA. What about human capital?

I. Human capital as a key driver of digital development in sub-Saharan Africa.

Human capital, which is the accumulation of knowledge and know-how, has since the pioneering work of Romer (1986) and Lucas (1988) been presented as a growth factor even for digital economy development. Moreover, the theory of endogenous growth, considers that human capital is the factor which makes it possible to maintain economic growth over time. Thus, a country endowed with significant human capital is more likely to innovate and even to easily assimilate innovations from other countries.

According to the model developed by Barro and Sala-i-Martin (1995), which is a leader-follower model, which examines how innovation and imitation of technology affect the rate of economic growth. Indeed, the economic growth of the leader economy is driven by its innovations, while that of the follower economy depends on its imitation of the technologies of the leader economy. We can logically use this model to understand how developing countries can, through the accumulation of human capital, imitate innovations from developed countries in ICT.

Human capital also stimulates research and development activities which enable sub-Saharan African countries to move from consumers of ICTs to producers of these technologies. Indeed, if there is a development of start-ups in the ICT sector in this part of the continent, the fact remains most are net consumers of innovations resulting from digital technologies.

While the role played by infrastructure and human capital in the digital process can be noted with interest, political aspect will also remain an important determining factor.

II. Political aspect will as a determinant of the digitization process.

The COVID-19 crisis has been an interesting experience for SSA countries in terms of digital development. Indeed, while the Corona virus pandemic was at its height in 2020, countries with a real digital development policy took the best advantage of these technologies. During this period, many countries in sub-Saharan Africa were able to put in place policies to help the most vulnerable people and those hardest hit by the pandemic while avoiding contact with these people. This was possible thanks to digital money transfers.

In addition, studies have shown that digital technology promotes better citizen participation in political life and better targeting of public policies. Digital tools can improve the efficiency, transparency, and impact of fiscal policy by enhancing authorities' data collection and analysis, as well as their effectiveness in delivering public services and raising revenue (IMF, 2020).

Thanks to the development of coherent digital policies and the adoption of technologies by public administrations, the development of digital in SSA countries can really take off and the resulting benefits will be enormous. Ranging from improving the management of public finances, to the fight against corruption, and also a better development of public policies. Indeed, the UN Online Public Services Index has increased in Africa to 45% between 2012 and 2018. However, this progress remains low compared to the rest of the world with which there is a significant gap (IMF, 2020). An efficient public sector improves the quality of life of citizens and makes life easier for businesses, which thus become more productive.

III. The transmission channels of the impact of digitization on economic growth.

The first channel, concerning innovation and technological diffusion, we can cite the work of Romer (1990), Grossman and Helpman (1991) and Aghion and Howitt (1998, p. 53-80). These authors propose models that treat research and development activities as the engine of long-term economic growth. Kuznets (1966), for his part, shows the importance of increasing the “transnational stock of knowledge” to facilitate economic growth in each nation. For this author, the origin of innovations matters little, but only the ability of a nation to adopt these innovations promotes its economic growth. Barro and Sala-i-Martin (1995), developed a leader-follower model, to examine how innovation and imitation of technology affect the rate of economic growth. Indeed, the economic growth of the leader economy is driven by its innovations, while that of the follower economy depends on its imitation of the technologies of the leader economy. We can logically use this model to understand how the penetration of ICT in developing countries such as those in sub-Saharan Africa can stimulate economic growth and its sources.

The second channel of improved resource allocation can be explained by the fact that the diffusion of ICTs has profoundly transformed all sectors of the economy. By promoting better access to information, knowledge and wisdom. Thus providing companies with more efficient and effective tools for market research, economic intelligence and communication with customers and suppliers, ICTs have indeed improved the ability to assess the market and consequently a better allocation of resources. A high penetration of ICT can

therefore promote the commercial performance of companies and, consequently, lead to economic growth.

Finally, with regard to the third channel, the reduction of production costs and the stimulation of demand. It must be said that since the mid-1990s, we have witnessed the rapid spread of computers and mobile phones, as well as the Internet throughout the world. This rapid diffusion is in fact due to the continuous fall in prices in the ICT sector. In particular, the fall in the price of microprocessors has led companies to considerably increase their investment in ICT. This substantial drop in information technology prices has led American firms to overinvest in ICT (Gordon, 2002, p. 22).

This work aimed to understand the process of digitization in sub-Saharan African countries. We first showed that this part of the African continent has seen a strong adoption of digital technologies, with an annual adoption growth rate of 33%. We later noted that despite this strong uptake, sub-Saharan Africa still lags behind other parts of the world. We have identified the constraints that hinder digital development. Ranging from a level of investment in infrastructure which is still low, to the low use of digital technology by the public authorities, not forgetting a low level of the stock of human capital. All are likely to drastically slow down the process of digital transformation. Finally, we have identified the main channels through which SSA economies can benefit from digital dividends. we recommend that these countries give priority to regional and sub-regional cooperation to increase efforts; to clean up the business climate and strengthen institutions with a view to attracting foreign direct investment and finally to develop a real ambitious policy for the development of digital technology so as to favor the accumulation of human capital capable of using the digital technologies and to innovate.

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