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The Constraints of E-commerce in Africa, Despite the Fact that Having Big Potential to its Development

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***Abstract*—** Poor required infrastructures for e-commerce establishment such as energy, roads, and Internet penetration create obstacles to companies use the convenience of internet to their business benefit. Majority of Africans does not have access to the Internet. This article meanly covers these important points such as Africa great e-commerce potentials, and major obstacles such as electronic power shortage, internet access limitations, and African consumers Behaviors. Based on the literature review, this paper will help to identify some important constraints that are hindering the development of e-commerce, especially in sub-Sahara Africa. The recognition of the key constraints to e-commerce and their fundamental dynamics are appropriate to any policymaker or researcher who wishes to acquire a better understanding of the constraints to e-commerce and professionals looking forward to establishing e-commerce in Africa. This article is one of the few reviews that analyze e-commerce constraints in sub-Saharan Africa and especially described its appropriate constraints.

***Keywords*—** E-commerce; Obstacles, Internet Market, consumer, Africa

I. Introduction

Apart from its natural resources, the African continent has a big ethnic diversity, compared to other continents [1]. Additionally, the majority of the population lives in the rural areas, where the demand for ICT and its services is significantly lower. The lack of basic ICT and poor quality of available infrastructure in most countries has led to significant differences in the size of economies in general, the level of available experience and other development problems [2].

According to the World Bank in 2017, Third world nations and emerging economies accounted for three quarters of global economic growth in 2014, , and Sub-Saharan Africa economic, grown from 3.6% in 2013 to 5% in 2017[3]. This is a remarkable growth which is above the average of many leading markets of about 4.8%. However, third world countries are still tackling the problems of medium and low revenues, thus much more efforts and policies are required for consistent economic growth. Recently, reports have shown that e-commerce could be a strong element to stimulate the domestic economy growth [4]; and, therefore, can be an important additional element to the economic growth and general development. Sub-Saharan economic development has been majorly compelled by overseas investments with a rising of working class [5]. Although there is a big expectation that with the appropriate investments, electronic commerce in Africa can contribute to its economic development and market growth, yet the digital economy input to Africa's GDP is currently only 1.1% in average, and the contributions from Internet-enabled products and services are still deficient [6]. Prediction revealed that by 2025, industries with access to the Internet could be expanded up to tithe of the African GDP [7]. Furthermore, the young African population and the growing use of the Internet among Youth demonstrated the real growth opportunity for e-commerce in this part of the Globe [8]. Electronic commerce (e-commerce): commercial transactions carried out electronically on the Internet using Information and Communication Technology (ICT) structures. Globalization and the information age have made companies in Africa to face big challenges. According to recent INTERNET WORLD STATS (2018), it was approximated that the population of Africa is about 1,287,914,329 in 2018 with a surface of 32,221,532 km2. Internet users in Africa in December 2017 are about 453,329,534, which mean a penetration rate of 35.2%, against two-thirds of Western Asia [9].

In general, the implementation of this review is threefold. First of all, with the help of analysis of several pieces of literature, this review will furnish to readers a full perspective of the constraints of e-commerce domain in Africa. However, it gives clarification of an intellect map of e-commerce topic in Africa for researchers who want to identify the thematic areas in which researches are most necessary. Secondly, for professionals who wish to invest and start an e-commerce in Africa, this review will give updates on e-commerce activities and mostly some constraints that their carriers might be facing. This will further help them to have proper preparations accordingly. Thirdly, some analysis of Alain DUCASS and Jean-Marc KWADJANE 2015; International Trade Centre 2015; Sara Holmberg 2016 found obstacles of e-commerce in Africa, however, none of them studied the fact that African consumers preferred to place their trust in foreign firms, especially sellers from another continent, rather than trust local e-commerce professionals.

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The rest of this study is organized as follows: Section 2 Background Section 3 provides the potential market of Africa e-commerce; Section 4 the Obstacles of e-commerce in Africa Nations which include Internet access and usage limitations, Economic and trade obstacles; the delivery infrastructure; Section 5 African consumer behaviors; Section 6 conclusion.

II. BACKGROUND

This document defined E-commerce transaction according to OECD: The selling or buying of products or services carried out via computer networks through procedures particularly constructed to receive or place orders. The transaction is completed in two phases. In the first phase, the products or services are purchased by those procedures, and in the second phase, payment and final delivery of products or services should not be made online. An electronic commerce transaction can take place between companies, families, individuals, governments and other public or private institutions. This will include orders placed via the website, extranet or exchange of electronic data. The type is defined by the method of placing the order. The orders placed by telephone, fax or manually written e-mail are excluded [10].

There are five different types of e-commerce:

Business to Business (B2B): a transaction between companies

Business-to-Consumer (B2C): a transaction between a company and an individual

Consumer to Consumer (C2C): a transaction between individuals, often carried out through an electronic commerce platform, even if not necessarily

Government-to-Business (G2B): a transaction between a company and a government, often in the form of e-government (e-government) acquisitions

Coop2Coop: an emerging form of e-commerce that takes place between cooperative institutions, which are independent associations of people intentionally united to achieve their common goals. [10]

A. The historical of E-commerce

The history of electronic commerce refers to the invention of the traditional concept of "selling and buying", electricity, cables, computers, modems, and the Internet. Electronic commerce turned to reality in 1991, when the Internet was unlocked to be a commercial instrument. From the time, thousands of companies have established their business on websites [11], [12].

Firstly, the concept of e-commerce can be comprehended as the procedure of electronically carrying out of commercial transactions with the aid of cutting-edge technologies, such as electronic data Interchange (EDI) and electronic funds transfer (EFT), which has offered users the convenience to exchange commercial information and proceed the electronic transactions. The skill to operate these technologies beginning in the late '70s and permitted companies and commercial institutions to electronically exchange commercial documents. [11], [13].

Even though the Internet started to gain popularity among the common society in 1994, it took about four years to build the safety rules (for example, HTTP) and DSL, which permit easy access and a permanent Internet connection. In 2000, a large number of commercial companies in the United States of America and West Europe described their services on the World Wide Web (www). Therefore the context of the term e-commerce has been changed. People have begun to interpret the concept e-commerce as the procedure of buying obtainable products and services Using the Internet and secured connections and electronic transaction services. Despite the downfall of dot-com in 2000 which resulted to regrettable outcome and the disappearance of many e-commerce companies, (brick and mortar) retailers acknowledged the benefits of e-commerce and began adding these features to their websites (e.g., after the online grocery store Web van went broke, two supermarket chains, Albertsons and Safeway, started using e-commerce so that their clients could purchase groceries on the internet). Therefore by the end of 2001, the most important form of e-commerce, the Business-to-Business (B2B) model, had about $ 700 billion of transactions. [13]–[16].

In 1994 Electronic commerce took its first action, by selling Ten Summoner's Tales, Sting's fourth album online. After two decades e-commerce was extended to the global level, with an approximate value of 1,500 million dollars in 2014, according to e-Marketer Alain DUCASS and Jean-Marc KWADJANE [17]. However, the Middle East and Africa were still in a borderline point. According to the United Nations Conference on Trade and Development (UNCTAD), Africa stays the region with the shortest penetration of e-commerce, with around 2.2% of global B2C e-commerce in (2013). However, the index of growth from 2011 to 2017 is the follows: Table A [18].

In the early 90s, the Internet arrived in the sub-Saharan Africa region, with Kenya, Uganda; Nigeria, Togo as the very first nations to profit the science of telecommunication and undersea cables provide connected broadband to the African continent, which means landlocked areas can only connect via these countries with ocean borderline [20].

In the early 2000s, only 9.3millions of Africa population has a steady broadband subscription, but with the help of mobile and 4G technologies, around 35.2% in December 2017 have access to the Internet [21], [22]. 4G and Mobile infrastructures have confirmed particularly applicable for non-urban areas, and progressively mobile devices have turned to be the most valuable instruments for accessing the web in developing countries. But Africa still has a long way to reach the connectivity quota of the other continents [16], [23] .

"Will e-commerce possibly grow in Africa?" This was the discussion topic of the Africa Telecom People symposium conference held on 8 and 9 October 2015 in Abidjan.

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TABLE I. GROWTH IN B2C INDEX INDICATOR IN SUB-SAHARA AFRICA 2011-2017 [19]

Growth in B2C Index Indicator in sub-Sahara Africa 2011-2017[18]			
	Years	fAfrica	World
Account ownership	2011-2017	83%	35%
Individual using internet	2011-2017	136%	47%
Secure internet servers	2011-2017	45%	2%

III. THE POTENTIAL MARKET FOR AFRICA'S E-COMMERCE

A. *The growth prospective*

Frost & Sullivan, American market consulting company, estimates that the market will upward thrust two from eight billion US dollars in 2013 to 50 billion US dollars by 2018[24]. There are various motives why this prediction is realistic. First of all, the electronic potential of Africa has not yet been exploited, and only 35.2% of one billion people in the continent are connected to the Internet, compare to an international average of around 54.4 % [9]. There is a high probability of expansion, supposing that the continent can broaden its register of society overall, starting with the booming of the divergence of Internet customers and cellular connections. Secondly, the growing of the Internet usage and its accessories is often followed by an increase in e-commerce activities and can be applied to this continent as well. Classic wholesalers in the developed environments have moved to online, and in the area such as European Union (EU) with its 27 States Members, we noticed that the ratio of the company's incomes from sales through electronic networks, as a percentage of total revenue reached 11% in 2017[25]. A report by McKinsey & Company in July 2014 revealed that by 2025, e-commerce could represent 10% of retail sales in major African economies, which would convert into yearly Income of US $ 75 billion. In part, this would be the outcome of an accelerated economic growth expected on the continent in 10 years, with a consumption expenditure that will exceed 1 trillion dollars a year by 2020 [26].

African e-commerce will be driven by this growing opulence and the trend of the freshly established wholesaler to prefer investments in e-commerce types of equipment on the substantial commercial market. At the Jumia's headquarter in Nigeria, and one of Africa's largest e-commerce companies, Jeremy Doutte, as a co-CEO of the company, explains that the companies' strategy is to construct wide online retail businesses, that supplies consumers for their daily needs, as do modern market chains like Carrefour do in developed countries. In fact, industry observers (including Doutte himself) anticipated that Africa's e-commerce growth will surpass that of classical retail space and could grow at a faster ratio than developed countries [24]. This forecast is backed by the Africa Digital study executed by Ovum in 2014 (London-based advisory group): 46% of respondents believe that e-commerce will be the most important digital service to engender more incomes for the African industries in the next half-decade[24], [27].

B. *The current potential*

The most recent report "Africa B2C E-Commerce Market 2018" sources mentioned that online retail sales in Africa are ready for fast growth over the next half-decade. The report furnished information on sales, growth prediction, online dominant vendors and purchase type desired by different countries in the Area [28]. Online merchant's sales in Africa are estimated inferior to 1% of the global total in 2017, although some countries have already experienced a term of fast growth. The report aims to ameliorate the connectivity ratio, especially via mobile connections, as a scenario for growth in the near future. Government policies such as those currently issued in Egypt are expected to contribute to the expansion of e-commerce [28]. The dominant country in online merchant business in Africa is South Africa, where e-commerce incomes have increased at two folds rates. Nevertheless, online purchases are benefiting momentum in Morocco and Kenya, with more Internet users turning to e-commerce consumers. The report features the increasing sales in Nigeria, despite the recent economic crisis in that country. [28] The top B2C e-commerce business in Africa is Jumia, established in Lagos Nigeria, with three million regular clients in different countries. However, there is other local online sales firm such as Souq in Egypt and Kilimall in Kenya. According to this report, even international veteran like AliExpress and Amazon, as well as social media sellers are experiencing growth on the continent. The main types purchased online in Africa include clothing and electronics [28], [29].

There are active 100 million MFS (Mobile financial service) clients in Africa that make transactions equivalent to $ 2.1 billion. Therefore Telecommunications companies have more consumers. MTN as the largest company has more than 170 million consumers, and Kenya Safaricom as the better distribution networks has more than 130,000 mobile money agents. Those potential make it convenient to distribute products and money transaction via the mobile phone network. This is about 80% of continental mobile phone penetration counting from 2016 [30]–[32].

As one of the world fastest growing of the mobile currency region, there are several additional telecommunication companies operating in Sub-Saharan Africa, such as Safaricom M-Pesa, MTN Mobile Money, Orange Money, Tigo Cash or Tigo Pesa, Vodafone Money and Airtel's Money [32].

IV. THE CONSTRAINTS OF E-COMMERCE IN AFRICA NATIONS

We consider the constraints of electronic commerce in the rate of three types of poor feedback systems: economic, socio-political and Intellectual. Although it is economic and socio-political the factors that are mainly focused on environmental characteristics, the Intellectual component reflects organizational aspects and individual behavior. One could say that for the initial adoption of e-commerce in developing

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countries, the Intellectual component plays a more important role. As organizations assimilate environmental practices factors play more essential roles in e-commerce development.

A. International trade obstacles

Recently there are growing needs from micro, small and medium-sized enterprises to utilize e-commerce for international trade. However Kim, Dekker, and Heij (2017) have shown that e-business is not influenced by geographical distances as regulars businesses, therefore the use of international online markets provides immediate access to a global market. This is proved by eBay Company, a normal eBay merchant will practically export to 30 different world destinations on average [34].

SMEs are more exposed to trade limitations than large companies, and generally, all international companies face certain types of export limitations. Export limitations can be described as all those obstacles that interrupt a company's skills to set up a development or maintenances of commercial operations in foreign markets [35], and this is usually relevant to the rules and requirements of international trade, including Customs policies, product labeling, tariffs and other rules on overseas markets[36].

Not Only These trade limitations are big blockades to e-commerce industries, but also some of them can meanly be a slow down subject to small businesses that are in a conquest of overseas' internet markets. However, customs operations and regulations have not been confirmed to the e-commerce's environment most of the times. E-tailors being usually export to several markets without a consolidated presence, sales will regularly compose of many small shipments, and therefore custom operations can become more difficult and burdensome.[34], [36]

The major obstacles to international trade include tariffs and taxes. The WTO (World Trade Organization) set up a team to ameliorate trade obstacles in e-commerce, and have agreed that customs commissions on electronic transmissions shouldn't be enforce[37], [38]. The delivery of physical goods is not included in this suspension, and therefore, tariffs are only made for exported products sold on online platforms, as well as for any other products shipped [39].

Furthermore, goods labeling can be ambiguous for e-commerce companies that are doing cross-border trade. Different nations have different standards regulations and management system to disclose products information.[36]. Therefore, e-commerce SMEs require more information and clarity about laws, regulations, institutions, and purchasers' flows in various markets to be successful. Operating without these features would make it much more difficult to combine export requirements and regulations. As SMEs are likely to have less operational strength than majors ones and do not have a domestic arrangement to meet the limitations of exports, they must assign important resources to discern markets and regulations in order to defeat commerce obstacles. ITC confirmed that SMEs without experience in Africa regularly commit the errors of disregarding sales taxes or import duties when trading via e-commerce [39], [40].

B. Internet Access and usage limitations

The major part southern Sahara has limited access to the Internet and the types of equipment to connect to the internet. Studies have proved that in a growing nation, citizens who could connect to internet use social networks to a greater extent than e-commerce purchases. In many countries, statistics and information on the ongoing circumstances of the e-commerce market are missing in the Countries of southern Sahara [41], [42].

Few of Africans countries such as Kenya, Seychelles, Mauritius, South Africa, Senegal, Tunisia, Libya, Mali, Reunion, and Nigeria out the 54 are the only countries in sub-Saharan Africa that can have over 50% of Internet entrance [43]. Most countries have very poor levels of Internet entrance, and in 28 countries less than 10% of citizens use the Internet [43]. This is a very poor level, especially when we compared to the more developed parts of the globe, whose average is around 80%, a very higher ratio compared to 31% of entire nations of southern-Saharan Africa Area[44]. Because of this poor ratio and limited supply, Internet access becomes a considerable and concrete resource for companies. It is worth remembering that the true access to the Internet may not be exactly revealed in these statistics. In sub-Saharan Africa, sharing an Internet subscription is usual, and Analyses have shown that more people in third world countries confirm that they use social networks than the number of people who claim to use the Internet [16], [20]. This would be evidence of a little higher Internet entrance.

Finally, sub-Saharan Africa endures digital divide. The expression is used to indicate distinctions in the penetration of ICT and Internet access between and within nations. Although the raised use of low-cost mobile devices has aided to connect low-income societies, there is still a big distinction between well-connected developed area and underdeveloped areas. Menzie D. Chinn and Robert W. Fairlie confirm that per capita income, communication infrastructure, access to electricity, the managerial atmosphere and census statistics are aspects that can better explain these distinctions [45].

We will discuss more the obstacles of internet penetration in the following paragraphs, with a focal point about Internet types of equipment, cost of the internet, electricity tariffs and Intellectuals abilities, this chapter describes the problems that e-commerce SMEs have on access to the Internet.

a) Internet Infrastructure

The expansion of e-commerce in a nation is obviously linked to the growth of ICT frameworks and the construction of very fast broadband, also both prices and connectivity are considered as the essential index for the preparation of a nation's e-commerce.

According to the US International Trade Commission 2013, Broadband connection is a key component for any enterprise wishing to access a global value chain and for any company wishing to fully use the internet as a business platform. [47]. The Table A1 and Fig A2 show that most of 35.2% of Internet users in Africa basically use mobile broadband subscriptions for Internet access, while in other areas of the global Internet users are split between mobile and broadband.

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TABLE II. WORLD INTERNET USAGE AND POPULATION STATISTICS JUNE 30, 2018 [46]

World Regions	Population (2018 Est.)	Population % of World	Internet Users 31 Dec 2017	Penetration Rate(% Pop.)	Growth 2000-2018	Internet Users %
Africa	1,287,914,329	16.9 %	464,923,169	36.1 %	10,199 %	11.0 %
Asia	4,207,588,157	55.1 %	2,062,197,366	49.0 %	1,704 %	49.0 %
Europe	827,650,849	10.8 %	705,064,923	85.2 %	570 %	16.8 %
Latin America/Caribbean	652,047,996	8.5 %	438,248,446	67.2 %	2,325 %	10.4 %
Middle East	254,438,981	3.3 %	164,037,259	64.5 %	4,894 %	3.9 %
North America	363,844,662	4.8 %	345,660,847	95.0 %	219 %	8.2 %
Oceania/Australia	41,273,454	0.6 %	28,439,277	68.9 %	273 %	0.7 %
WORLD TOTAL	7,634,758,428	100.0 %	4,208,571,287	55.1 %	1,066 %	100.0 %

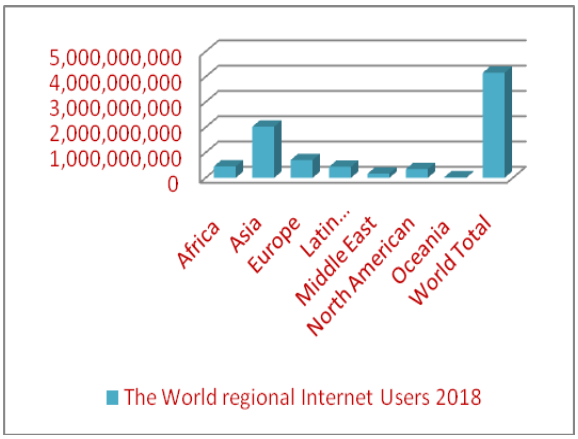

Figure A1: The World regional Internet Users 2018

TABLE III. AFRICA INTERNET CONNECTIONS PER DEVICES 2017-2108 [48]

Date	Mobile	Desktop	Tablet
2017-12	52.48	43.26	4.26
8-01	.92	.87	21
8-02	.82	.12	06
8-03	.56	.27	18
8-04	1.2	.66	14
8-05	52	4.1	89
8-06	.52	.63	85
8-07	.95	.11	94
8-08	.54	.33	13
8-09	1.7	.12	18
8-10	3.2	.78	03
8-11	.19	.07	74
8-12	.06	7.2	74

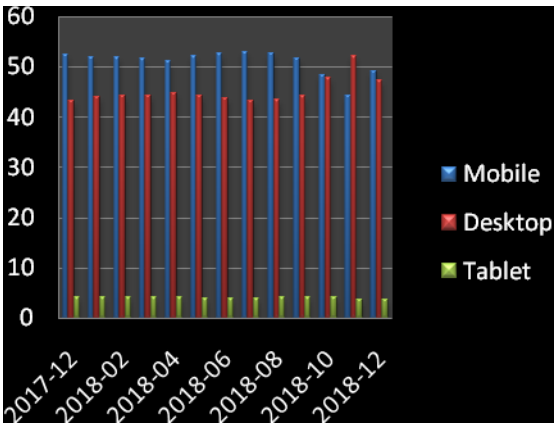

Figure A2: Africa Internet connections per devices 2017-2108

b) Internet Overprize in Sub-Sahara African countries

Another cause that describes the poor penetration of the internet is the price. Internet in sub-Saharan Africa is counted among the high costly on the globe; The lowest price for cable broadband in Sub-Saharan Africa is in Reunion, where the price is 35.45USD in Average, while in Mauritania the cable worth 768.16 USD and stay the most expensive in Africa and in the whole world [49].

In 2014, 47% of users in sub-Saharan Africa also believe that the price of mobile data is too overpriced, confer a document of Ericsson ICT companies [50].

The deficiency of infrastructure and competition is frequently found as the mean reason of the overprize. According to some subscribers, the expenses of the Internet connection is altogether the price of equipment, such as computers, telephones, modems and the payment of connectivity in every month [20].

The reason of increasing trend of mobile adoption for Internet access is simply the innovation of low-cost smart phones and tablets on the market and this usage of mobile devices for internet access will continue to increase as new equipment below 50 USD cost [51], [52].

The high-tech preparation, valued as the competitivity of a nation by the World Economic Forum, is very low in Africa compared to other continents, this is not only due mostly to the absence of Internet infrastructure, but also to the inadequacy of coaching and the scarcity of education about how to utilize ICT

commodities [53]. Related statistics are identified in the network availability index, where most sub-Saharan African nations are situated at the inferior end. The network availability index measures the corporation, managerial and administrative environment, the preparation for ICT, including accessibility, infrastructure, and capacities, and finally the utility and impact of ICT [49].

The achievement of sub-Saharan African nations is very low, with 30 of the 31 countries included in the lower half of the NRI index [54]. Furthermore, there is a correspondence between the record in the network preparedness and income index, both globally and locally for Sub-Saharan Africa, illustrated that countries with higher revenue tend to set up a better condition for their inhabitant to utilize the Internet.

The scarcity of connectivity is a direct barrier for companies and their products buyers. This has led the Internet and technology industries to participate in ameliorating Internet access in Sub-Saharan Africa. This involved Alliance for Affordable Internet and the organization guided by Facebook internet.org, which offers free basic Internet services of its platforms via mobile connections in the supposed "zero ratings" [16].

C. Electric Power supply

The inhabitants of sub-Saharan Africa are over one billion, about three out of five dwell without electric energy. This causes huge socio-economic losses and profit more to regions rich in energy. While for those who are connected to the electricity network, interruptions of the power supply, energy paralyzing is extensive, since the usage (mostly owned by the state) is not able to supply dependable services due to lack of investment in infrastructure in the last decades [55]

Africa persists to tail behind other regions by installing power generation of very low capacity, and electricity consumption per person is an average of 40 to 45 kilowatt-hours (kWh) per month, in comparison to more than 100 KWh / month in emerging nations, in regions like South Asia or Latin America. Moreover, the World Bank predicted that domestic connection of sub-Saharan African to electricity network was around 42 percent in 2016, which is much lower than 78 percent; 96.2 percent; and 94.4 percent in, South Asia, the Middle East, and South America and the Caribbean, respectively [55].

According to a report of the World Bank, the entire established electricity capacity in SSA is estimated around 122 GW, with 22% supplied from hydroelectric power, and three quarters from organic oils. It is also mentioned that 80 GW of sustainable energy resources could be supplementary between 2018 and 2030, grow to 50% sustainable energy generation for SSA by then [55].

As reported by International Energy Agency (IEA 2015), 15 African nations out of the 20 World lowest were rated at the last level in the matter of electricity consumption per inhabitant, while 13 of the 20 of those nations do not have satisfactory electricity supply were also situated in Africa. Furthermore, the imbalance between urban and rural areas was very considerable. It has been estimated that more than two-thirds of city inhabitant have the connection to electricity, while only 15% of villagers have access to Electricity. [55], [57], [58].

Approach to electricity is fundamental for the operation of industries, in particular for electronic-commerce companies. Not only would the electric energy handle the machines of industries and the lights in the rooms, but it is also indispensable to empower a computer or a cellular phone for internet connections and activities. Tony Blair, Ex-Prime Minister of the United Kingdom, stated that access to electric power is the "single most important factor for a country's success" and is considered an important element of economic development. Low-income countries in electrification indices (less than 80% of their inhabitants) have a lower per capita GDP. Nevertheless, nations that have electric power ratio below 80 percent with GDP per capita higher than 3,500 USD are those with meaningful natural resources [59].

TABLE IV. AFRICA'S ELECTRIC POWER SUPPLY RANGE PER LOCATION [56]

Years	2010	2011	2012	2013	2014	2015	2016
Rural	117.40 %	117.40 %	117.40 %	117.40 %	117.40 %	117.40 %	117.40 %
Urban	667.85 %	667.85 %	667.85 %	667.85 %	667.85 %	667.85 %	667.85 %

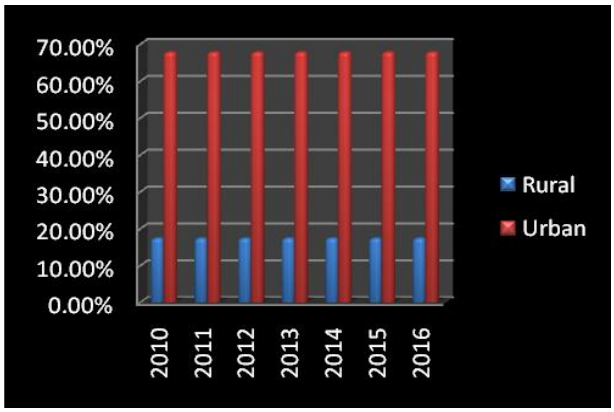

Figure B1: Africa's electric power su pply range per location 2010-2016

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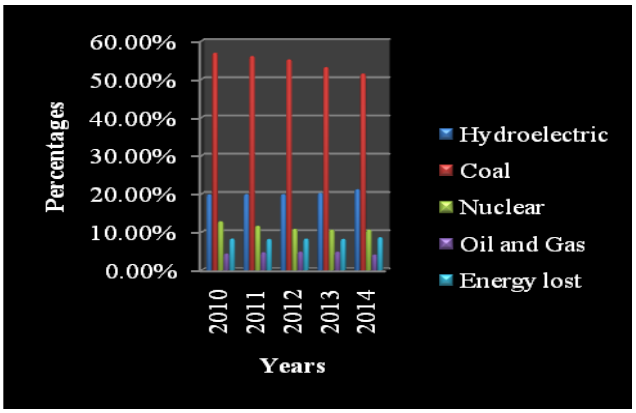

Figure B2: Africa energy sources

TABLE V. AFRICA ENERGY SOURCES [56]

Years / Sources	2010	2011	2012	2013	2014
Hydroelectric	19.855%	19.918 %	19.915 %	20.200 %	21.174 %
Coal	56.900%	56.028 %	55.143 %	53.143 %	51.439 %
Nuclear	12.799%	11.614 %	10.819 %	10.586 %	10.624 %
Oil and Gas	4.356%	4.701%	4.857%	4.857%	4.095%
Energy lost	8.268%	8.168%	8.272%	8.201%	8.640%

a) Power service functional difficulties

The Area's network system is particularly untrustworthy, with above one-third of the set up generating capacity left unused due to outdated installations and poor preservations. The power outage of every day and bad service obliged companies and some homes to depend on costly backup generators that cost at least USD 0.40 / KWh. In 2016, two-fifths of companies that were evaluated mentioned electricity as a major obstacle to doing business in Africa. Moreover, the high expenditure of tiny services and indiscriminate operations of diesel implantation have heightened power supply expenses [55].

Poor management services endure heavy losses in transmission and allocation, in addition to ongoing billing and companies overstaffed, and indicated that these functional deficiencies are native across the industry. The World Bank has stated that deficits from transmission per distribution and collection of bills together account for more than half and three-quarters of quasi-fiscal deficits in 21 and 13 nations, respectively. Near-tax losses mean the difference between 'net profit' from a service company and the 'net cash' raised. These deficits surpassed 100% of the money raised by public services in 11 countries, while the 20 services did not even cover operational cost. Only five have covered half of their capital expenditure [60].

D. The transmission infrastructure and facilities

In a sense, the conveyance and delivery system in Africa is not outfitted to manage its thriving e-commerce industry. Many African roads are unpaved and the landscape is often hard to navigate. This has constituted barriers for e-commerce operators looking for a valid delivery alternative [19], [61].

Valid physical infrastructures for e-commerce products to be commercialized must exist [62]. Admission to low-cost transportation is essential for effective-commerce service development. E-commerce market especially, as e-commerce in global exchanges is frequently inexpensive with high quantity products, this makes “sending low-cost and punctual delivery” very important for international trade on the Internet [63]. Therefore insufficient infrastructure in sub-Saharan Africa has hindered its chances for rapid economic development. As previously mentioned, not only that the communication networks and electricity are inadequate, but also terrestrial transport, port, and roads are some of the major instruments of Africa-commerce to be improved [64]. Transport infrastructure is one of the important obstacles to trade between same region countries and to internal countries trade. Therefore renovations and enhancements in this sector would not only help businesses to improve market access and integrate into global value chain but would also make the transmission of products buy online much easier.

Asian research ratified the necessity of good shipment sector. Nearly 50% of Singaporeans say delivery service is the principal reason that will make them withdraw from buy products or any services from e-marketplace [16] In addition, 50% of Europeans business argued that the biggest barriers to cross-border online sales were that "shipping costs are extremely expensive", while 40% mentioned that "guarantees and returns are very high.”The European Commission has predicted that a decrease in the delivery bill could increase the gains of EU e-commerce companies that are involved in cross-border trade by 7.5% [16], [65].

In all cities and towns in Africa, lack of proper names and clear streets addresses makes delivery difficult and requires better information [24]. Also very often the postal system in developing nations does not work better enough [66]. Meanwhile, e-commerce companies around the globe have invested in their delivery solutions to avoid the problem of slow or uncertain transmissions [67] It is clear that delivery system is requiring to be improved in Africa nations. Previous information and researches clearly show that traditional infrastructure and the development of a safe and decent postal service are lacking.

a) Transaction systems

African businesses frequently face two types of financial or transactions obstacles. Firstly, internal rules, low rate of credit

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card usage and domestic bank expenses are some of the major obstacles to the use of domestic transactions platforms. Secondly, there is a problem of African nations frequently being rejected by international suppliers for external payments [24].

Mostly, the monetary assistance market is backward for most sub-Saharan nations[68] and, in accordance with recent Gallup analyses of sub-Saharan African nations, South Africa, Kenya and Nigeria have the most developed financial services markets. However, they are still overshadowing by simple cash payments, and the online payments are dominated by mobile payment in other sub-Sahara African countries [67]–[69].

As credit cards are adopted as the primary methods of payment in many large economics countries, the common internet payment systems established and grown in Europe and the United States are created for the use of Bank cards. Credit card possession is still very low in most Sub-Sahara countries; therefore both buyers and sellers are very limited from using internet transactions systems, however, remarkable efforts are being made in this domain [70], [71].

According to OECD analysis, the lowest-ranked OECD country is Mexico, where 13% of the population has a credit card, still much higher than South Africa (7.8%), which has the highest use of cads among the whole African Nations [41].

Restricted approach to international payment systems is a direct barrier for companies in developing countries that are wishing to participate in cross-border e-commerce and some sub-Sahara nations even have internal limitations on the amount of money that can be moved beyond their countries borders [24], [41].

However, with new mobile phone technologies as solutions, it has advanced the potentiality for payment, both in the standard area and in the electronic commerce area. Actually, among seven billion citizens of the world about 63.4% are currently using mobile phones in 2019 [72]. According to the World Bank, between 2014 and 2017, the financier transactions made through mobile phone rise from 67% to 76% in the whole world, whereas in the third world, it increased from 57% to 70% respectively [73]. However compared to Banks the statistics shown about 1.1 billion unbanked with about two-third of this populations having mobile money account, and 21% of adults owned mobile money account in Sub-Sahara Africa [74]. Mobile payments have set up chances for customers without any bank account and moreover, mobile money transfers are likely to have more appropriated use between high-class people and low-income class. However, there is not yet a particular pro company or an important standard in the market that can transform it into a market dispersed in many systems. Also rules in the money market are likely to be countries distinguish. However, mobile money operations have become a common payment method in sub-Saharan Africa [16].

The matter that mobile network companies have strong networks and consolidated connections with their customers has automatically established the foundations for mobile payment operation. Kenya M-Pesa was the first to operate the mobile payment solution, started by Safaricom, a telecommunications provider in 2007 [75]. Its SMS-based money transfer system is Used by over 20 million people in Kenya and allowed people to do every monetary operation using the telephone[75], [76]. Elsewhere in African countries, a related approach is found. MTN mobile money and Airtel money, established by the two telecommunications companies of the same name[77]. In many ways, Africa has taken a leading role in the use of mobile banking services rather than in countries with more advanced technology [16], [74].

A mobile money transfer needed only the possession of a mobile phone or accessibility to one. A research survey on the use of mobile phones in Kenya, reported that 58% of those who do not have a phone shared with another person and 21% of mobile phone possessors share their phone. In addition, a Pew Research study on Ghana, Kenya, Senegal, Nigeria, South Africa, Uganda, and Tanzania shows that 30% of mobile phone possessors use their mobile phones to transfer or receive money [78].. In Kenya, this statistics is 61% in comparison with Ghana (15%), South Africa (15%) and Uganda (42%) [78].

The Insertion of Smartphone with new functionalities also assisted the progress of buying products online. Some studies show that Ghanaians and South Africans have above one sign up on average, while less than half of Uganda's population has a mobile phone sign up. Even the flow of Smartphone apparently goes according to the penetration of mobile telephony; in South Africa, 51% of the population possesses a Smartphone contrary to only 13% in Tanzania [79].

Another way of paying of the internet that has currently picked these years beside the well known like Master cards, Visa Cards, is the creation of electronic portfolios or third party payment systems such as Stripe, PayPal payments pro, Amazon payments. At the global level, interim payments have become the rapid spreading payment procedure [80], but this method in sub-Saharan Africa is not so extensive [41].

The United States of America Company PayPal (once part of eBay) is gaining the market for electronic wallets and its 254 million active users, is accessible in over 200 markets. Alipay, which is part of the Chinese organization Alibaba, with 58.2% of its market share is alternatively the most famous in China [81], [82]. These services frequently can only supports a very limited number of currencies applicable to their users, for instant PayPal only use 28 currencies, Google Wallet 42 and Alibaba Alipay 12 currencies [16].

The biggest PayPal market in Africa is South Africa, succeed by Nigeria and Kenya [83]. We could distinguish three feasible types of accounts: personal, premier and commercial. Commercial accounts allow SMEs to have an account where they can receive payments [84] .However; these services are only activated in 13 African nations, including South Africa and Kenya, while the personal account is the only type applicable in Uganda [16]. However, PayPal does not offer any of its services in Ghana. Therefore, the adoption of PayPal and related e-wallets has its barriers to e-commerce SMEs in sub-Saharan Africa [16].

Finally, cash on delivery (COD) is the favorite method to make e-commerce procedure in Africa and the Middle East;

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48% of whole e-commerce payments in 2012 used this procedure. In essence, the buyers prefer to pay cash when he receives the product bought on the internet, and this payment way is mostly provided by many express companies [85], [86]

Eventually, a study based on a World Paid survey on the most famous payment ways for e-commerce in three of the nations have revealed a very impressive outcome. In South Africa, Ghana and Kenya, the rest part uses a payment system that includes COD [16].

b) Literacy

The application of the Internet as data collections instruments or electronic commerce means that the user was trained about how to read and scribble, and the ability to comprehend another language, especially English is a big benefit [87] However third world is more likely to have inferior grade of socio-economic growth and among other things, inferior levels of literacy have turned to be a big obstacle to the internet integration, and lack of English language's knowledge, has become a barrier to any companies that want to participate in exportations [88].

Statistics in the chart below demonstrated that English is the most frequent language use on the Internet, although most of its users are not original English peoples. The current translation applications have made it more accessible for non-native speakers to use the internet, since many sites and applications are still in the English language [89].

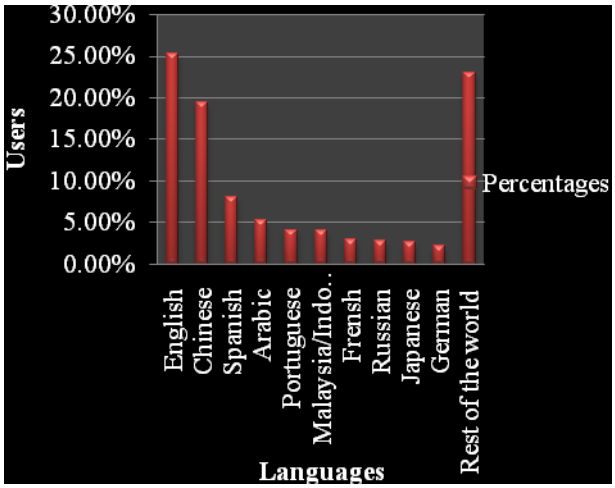

Figure C: Population of internet Users Per Languages 2018 [89].

For e-commerce to grow, it very important to have a website suitable to the domestic language and recent research determined that 72 percent of the buyer are more tempted to buy a product if a description is written in their mother tongue, and even more than the price [67]. In some African countries, English is only one of many spoken languages and many nations in sub-Saharan Africa have dissimilar spoken languages, even the minority tribes. However, there is no genius information and the clear statistics of competent people who speak English in a particular Area, however with some statistics and estimates; it is still possible to give an idea of the languages spoken in those nations [16].

Literacy ratio persists to increase from one generation to another. However, according to recent information from the [90] (International literacy day, 2017) Institute for Statistics, there are still 750 million illiterate adults and two out three of them are female. These figures are a clear alert of the work to be done to achieve the SDGs (Sustainable Development Goals) 4 and 5 and the 2030 education objectives.

V. AFRICANS CONSUMER'S BEHAVIORS AND TRUST IN E-COMMERCE

A. Trust in Ecommerce

Confidence in new technologies and Internet empower commerce is an important component for e-commerce to expand. Winning customer confidence particularly becomes very important on internet environment business, where reputation is based largely on opinion and understanding, also consumers must trust the supplier however they might not have seen or touched the goods [24], [39].

Therefore, as confidence must be achieved via online maturity, and the above factors, such as time and cost of shipment, insurance and the acknowledgment of payment, and the domestic language, similarly the feature of the products and services after-sales are important to a greater extent [39], [41].eBay, in its report on trade 3.0, has confirmed that if a buyer remarks that there is a possibility that something might go wrong, the consumer definitely is not going to complete the transactions [91].

Since the consumer cannot examine the product before buying it, many consumers most of the time wishes to send the item back if it does not meet the consumer's prospect. The rules and regulations for sending back and consumer care are dissimilar from one market to another and therefore can be difficult to manage from a solid aspect.

In South Africa, trust is very vital for online buyers. Most comments from consumers affirmed that they would like to feel the goods before making a payment, while 36% said they did not have certitude in internet transactions, 8% did not trust the site [16].

Africans enterprises most of the times do not have access to electronic security devices such as digital signatures or certain safety standards that can hinder the confidence of overseas costumers. Therefore, e-commerce enterprises in third world nations are confronting the obstacles of winning overseas consumer confidence [24], [39], whereas, Internet markets often offer reliable tools to assist both Buyers and sellers.

The seller and the buyer give feedback could also consider as a gaining confidence tool and then classify as trusted and trustworthy sellers, same as suppliers who comment on social network platforms. Social reputation is greatly influencing consumer choice and buyers not only buy product and services online, but also use online social society to contribute their views on goods and sellers [67].

In addition, eBay has discovered that trusted tools support sellers in their choice. The higher rated of the seller profile is, the lower purchaser tends to worry about the geographical interval. Therefore, trust instruments could be of vital importance for Sub-Saharan African companies to win buyer confidence in an overseas market. Furthermore, confidence in the use of Internet services is also linked to aspects such as online supervision, privacy, and liberty of expression [16], [67], [92].

It is clear that trust is necessary to succeed in the internet market. With digital tools it's possible to win trust via reviews; nevertheless, it's possible to be confused instantly, since a negative review and comments on social networks can cause a buyer to lose confidence.

B. Consumers behaviors toward local brand and service

Shoppers will choose and appreciate overseas brands over domestic ones, particularly for their supposed high-quality and influence reputation. If a good is recognized to be convenient worldwide, it is probable that consumers will classify the product as high quality, as its value is considered imperative for global acceptance [93]. A globally recognized brand can behave as an "attraction" that builds quality beliefs. As reported by, Wenfei Guo perceiving quality is described as the appreciation of consumers on the complete excellence or predominance of an entity (service) [94].

Some analysts suggested that the manufacturing country, product price, reputation, friends and household influence buyer's motivation on the decision to buy goods[95]. Rahaman described the influence of the manufacture country as "how the original country of a product could positively or negatively affects the consumers' determination and subsequent behaviors by arguing that the effect of the original country can be described as "the image, reputation, and stereotype that entrepreneurs and consumers adhere to the products or brands of a given country. This concept is built by such variables as representative commodities, the country characters, economic and political culture, history, and traditions "[96].The same analysis also stated that the influence of the country of origin is really rich and incorporate the topic from various points of views in different nations. The manufacture country has a typical and emotional significance for consumers and plays an important role along with other features such as quality and reliability in configuring consumer behaviors about a product [93]–[96].

However, if e-commerce companies in Africa are owned by local entrepreneurs, their service brand could still be considered as local ones, therefore being unfavorable. In the other hand if the e-commerce company is owned by foreigners especially those from a developed country, or a citizen living in a developed country, they are considered by consumers to be of better qualities, without a doubt.

Some studies also confirm that very materialistic purchaser seem to consider undeveloped nation's brands more critical than purchaser with little desire for their possessions, as these brands may not contribute to their social status achievement[97]. The existing literature holds that consumers' susceptibleness to normative effect, which is related to materialism, also influences consumer ratings and choices [98], [99].

Another factor is "Equity" nation equity is an important aspect that describes the effect of consumer perception. Consumers are likely to judge brands originating from a nation that has large equity more certainly than the original brands of a country with inferior or negative equity [100], [101].

The image of African nations in the face of the world including some African natives themselves is perceived not to be as industrialized as the other regions of the world. However, most industries in this region of the globe are known for not to be well equipped enough to manufacture products of high quality and high value. Therefore African e-commerce companies must cooperate with countries that have already built their reputations and trusts, in order to succeed. This would be valid for both selling platform and the products to be sold.

CONCLUSION

Africa is an Aria that covered 20% of the terrestrial part of the globe. Its population that constitutes a huge market for the world and internal countries reaches 16.64% in 2017 according to (worldmeters, 2018). With this potential of the market, e-commerce started its penetration to African market around 2013 with a percentage of 2.2 in the global echelon. The income expected to show in 2023 is about 8.1% and consumer's penetration is estimated to 36.1% in 2018 and hope to grow better by 2023 according to the statistics 2018 [9] .Despite all its potential and a big hope for growth, Africa's e-commerce is facing many challenges and has some constraints to its development. This review analyzed many important constraints that hindering the rapid growth of e-commerce in this part of the globe; where the majority is constituted of the third world nations. Among those constraints, this paper found.

The obstacles to international trade are more about export limitations and incompatible overseas business rules, and policies that are big obstacles for B2B companies to export their products outside their countries and the continent.

The limitations to internet access; this part discussed the cost of internet broadband, and very low penetrations which constitute important barriers to consumers to purchase online at a low internet cost.

The shortage of electricity to constantly empower e-commerce industries for more working hours and more consumers cares.

Lack of adequate transmissions infrastructures like paved roads, well-equipped port, and airports makes the shipping fees to be very high. This discourages the consumers to purchase products from long distance on the internet.

The payment systems barriers; in this part we found that the expensiveness of bank cards makes the majority of the African population not to have a bank account and unable to purchase online. Those cards are often rejected by overseas clients and wholesalers.

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The illiteracy and languages limitations constituted big obstacles for Africa e-commerce, as it has a very high rate of illiteracy. Only who could read and write could do online transactions and could be able to be educated accordingly. English as the most speaks language on the internet, and the fact that many applications use for e-commerce transactions are built in English, make it inconvenient to Africa e-commerce market to be rapid spread across the continent, since it has important language diversity.

And lastly, the lack of trust of many Africans consumers in the domestic e-commerce business, and their behaviors of trusting more in famous brands and their countries of origin more than the local manufacturer, constitute trust barriers to Africa e-commerce.

Although it is not possible to generalize to SMEs in Sub-Saharan Africa from this review, the findings from this paper's analysis should not be neglected as well. In total this paper has been able to detect eight e-commerce barriers related to the intuitional environment. These are identified as 1) International obstacles, 2) Lack of Internet Access 3) High Internet Cost 4) Lack of Electricity 5) Low Literacy and Skills 6) Payment obstacles 7) Insufficient Delivery Services and lack of trust in the electronic commerce. 8) Consumers behaviors. If African e-commerce market manages to overcome these means constraints, there is the very big hope for its growth, since it's having huge potential.

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