Global Scientific JOURNALS

GSJ: Volume 5, Issue 5, May 2017, Online: ISSN 2320-9186
www.globalscientificjournal.com

Tanzania as an Emerging Digital Economy

HAJI, Semboja H.[1], SILLA, Beatus S.[2] and MUSUGURI, Joseph N.[3]

[1]Department of Economics, the University of Dar Es Salaam-Senior Lecturer
Corresponding email: haji@semboja.com
[2]Tanzania Police Force – Policy and Budget Analyst
Email: sillabeatus@yahoo.com
[3]Department of Sociology and Anthropology, the University of Dodoma – Assistant Lecturer
Email: jmusuguri@gmail.com, musuguri@yahoo.com

ABSTRACT

The paper on Tanzania as an emerging economy aims at analyzing the emerging digital economy, assessing its characteristics and associated behaviours in country. Specifically, it analyses the socio-economic impacts of digital economy on internet usage, e-commerce and weaknesses, challenges and risk associated with the same. Research methodology used were literature review, consultations with key informants, data analysis and team discussions. Both qualitative and secondary quantitative data and information were employed. The paper reveals that the emerging digital economy in Tanzania have mobility and pervasiveness characters; digital economy have unsatisfactory internet usage, insufficient network coverage and lack of building network capacity; average growth potential rate, infrastructure, and market saturation were also unsatisfactory; insufficient network capacity, low internet usage, low competition, lack network coverage, poor Information Communication Technology infrastructures, absence of consumer protection, and absence online business taxation systems; lastly but not least, hyper-connectivity was found to affect the performance of economy by hindering online transactions of many customers. The study recommends that the government has to create and review policies related to digital economy to guide the performance, interconnectivity and flexibility in accordance with local and global needs. It further recommends that government has to strongly support and facilitate the Information Communication Technology investments in order to extend coverage of internet usage especially in rural areas and, lastly, to adopt of online businesses tax collection systems as a means to widen tax base by capturing the online business taxes.

Key Words: Digital Economy, Information Communication Technology, Internet, E-commerce, Sector

1.0 INTRODUCTION

1.1 Background

Any digital economy is the result of the transformational effects of new General Purpose Technologies (GPT) in the fields of information and communication (European Commission 2014). It will impact all the sectors of the economy and social activities, for instance: retail, transports, financial services, manufacturing, education, healthcare, media and so on. It has implications much beyond the Information and Communication Technology (ICT) sector. For example, the internet is empowering people in a new and different way to create and share their ideas, giving rise to new content, entrepreneurs and markets (European Commission, 2014). The digital economy has built on two components which include soft and hard ware, involving the integration of different activities at various levels resources, accessibility, applications which generate the value that make specific business models profitable.

Challenging issues associated with digital economy are explained at different levels in developed and developing countries depending on the level of technology, and economic growth. These include; lack of online business tax collection systems, externalities in networking and performance, and insufficient network coverage. These issues have huge impacts in developing than in developed countries; since the economy in developed countries is largely hooked with the computerized systems and able to detect and neutralize risks hence obtaining optimality in the economic system whereas the developing countries experiences hyper-connectivity as crucial risk, thus hindering the expectations of the systems.

While developed economies have immensely benefited from digital technologies, Tanzania and many other developing countries are still at infancy stage. In some cases, there has been a decline in progress in areas that digital technologies were supposed to have improved: job creation in ICT sectors, increase of high skilled and middle skilled jobs, and innovation, hence advancement in level of technology and economic growth, concluding that the digitalization phase was not well welcomed in developing countries (Anamuah-Mensah, 2009).

1.1.1 Characteristics of Digital Economy:

Because of the dynamic characteristic of technology the digital economy can no longer be considered only as a part or subset, instead it is a mainstream for the growth and development of

the economy; implying that the economy's sectors are all digitalized with computer and automatic recording and tracking (Makondo and Wang, 2015).

Digital economy is characterized by the following two properties; *first* is the mobility; the digital economy is characterized by intangibility which enhances mobility in many different dimensions. The associated rights are easily transferrable to low-taxation jurisdictions. Users and customers can also perform commercial activities across borders which challenges traditional tax systems, use of data as source of value; data are collected from several market players and activities. The increasing capacity to collect, store and treat massive flows of data has led to the concept of "big data" that could generate value either in private (marketing) or public (government) activities (European Commission 2014).

Second is pervasiveness of the Network effects**:** The pervasiveness of the network effects in the digital economy has allowed private value creation especially through so-called multi-sided business models. In those models, several groups of persons interact through a platform, resulting in positive or negative externalities. If many examples could be quoted of multi-sided business models (e.g. payment card system, operating system, media industry), the most famous one is that of compulsory advertising considered as a negative externality (intrusive, unattractive) which is compensated by the low-cost or even free offer of a service (European Commission 2014).

1.2 Objectives:

This paper will analyze the emerging digital economy and assessing its characteristics and associated behaviors in Tanzania.

Moreover it will detail on the social economic impacts of digital economy in Tanzania focusing on internet usage and e-commerce, and additionally will detail on weaknesses, challenges, and risks associated with digital economy. Lastly the paper will present policy recommendations and a way forward on digital economy aspect in Tanzania.

1.3 Methodology and Approaches:

Preparation of this paper used different research methods and approaches such as literature review consultations with key informants, data analysis and team discussions to analyze the digital economy in Tanzania.

Both qualitative and secondary quantitative data and information were analyzed to assess the performance of digital economy in Tanzania. Quantitative data from ITU, BOT and GEI were used.

1.4 Coverage:

Coverage of this paper consists of six sections: - Section 1 covers introduction showing the background of the subject matter, objectives, methodologies and approaches used in analyzing digital economy in Tanzania.

Section 2 describes the current situation and performance of digital economy in Tanzania focusing on trend of service sector, internet usage and E-commerce.
Section 3 explains weaknesses, and challenges facing the digital economy in Tanzania.
Section 4 elaborates the importance of digital economy and how it affects the economy, hence concluding the advantages of digital technologies and competitiveness in the economy.
Section 5 examines risks of digital economy which include aspects related to the digital and physical environments, the people involved in the activity and the organizational process.
Section 6 is a conclusion detailing on key findings, policy recommendations and the way forward.

2.0 Digital economy in Tanzania:

This section describes the current situation and performance of digital economy in Tanzania focusing on trend of service sector, internet usage and E-commerce. Main issues focused on this section include: performances of the service sector, the internet usage, and status of the E-commerce in Tanzania focusing on online market attractiveness.

2.1 Current situation of the digital economy in Tanzania:

The economy of Tanzania is picking up the service industry; which is a sector encompasses all industries except those in the goods-producing sector such as agriculture, mining, construction,

and manufacturing. It includes transportation, communication, public utilities, wholesale and retail trade, finance, insurance, real estate, other personal and business services, and government (ISIC, 2013). Large number of services obtained from the sector is influenced by development in technology and huge investment in ICT facilities in service based activities. Progressive behavior of the service sector is characterized by development in transport and communication, trade and growth in financial sector; implying that there is high contribution of the service sector in economic growth (El-Darwiche. B et al, 2013)

In Tanzania the production technologies and ICT facilitated the growth of small enterprises, extending their national and regional coverage for provision of goods and services. In this development it is expected that the use of the internet would facilitate the adoption of E-commerce as a means of offering fast, flexible, and cost effective ways of doing business as well as enhance their competitiveness. This state of development will be important especially as volume of trade increases in Tanzania and other countries which requires fast transfer of monies, payments across continents, and many other electronic services that promote growth of enterprises (Anamuah-Mensah, 2009).

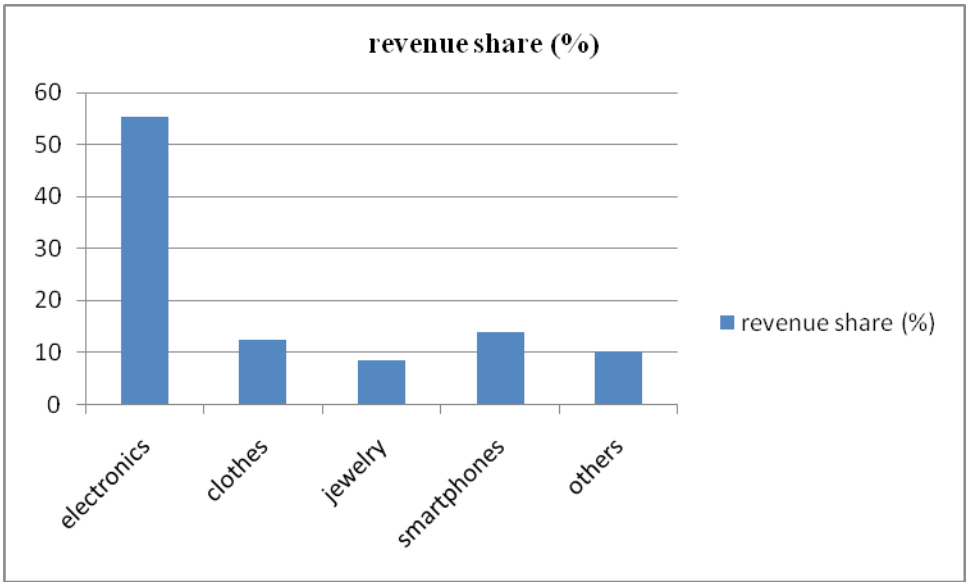
Considering that the Tanzanian economy is still at developing stage, using traditional methods in its operations, thus the digital business in less effective in the economy, less number of businesses are conducted through the internet services or using different computer applications. Examples of these applications include; Kupatana, Kaymu and Jumia. On a case of services such as electricity and banking to some extent the country has performed well, use of online services such MAXMALIPO to purchase electricity and electronic and internet banking hence easing accessibility of the services at anytime, though large number of people still visit the banks to obtain direct services.

Box 1: **Kaymu: The Digital Market in Tanzania:**

This is one of the online markets dealing with purchasing, selling and advertising product such as; electronics, fashion, clothing and jewelers. The company operates in more than 30 countries in the world and in Tanzania is centered at Dar es Salaam as was launched in 2013, while recently still expanding its operation base in Europe; implying that the company found it more profitable to start in Africa due to dominance of virtual markets in developed countries.

To ensure efficiency the company introduced a mobile application which enables mobile users to shop for goods and direct ordering from their mobile phones and allowing sellers to manage their online shops. Buying from the market requires understanding on the offered product and price to ensure credibility of the product and satisfaction of both seller and buyer.

To ensure safety and accessibility of purchased product buyer has to identify the packaging, delivery cost and the shipping information and method as conditions to receive ordered product from the site. Furthermore the company's revenue share is divided as follows depending on the nature of the product:



Product mix is dominated by electronics with 55.3%; implying that they are the most consumed product, followed by Smartphone; this details that Tanzania is digitalizing through the use of computer systems as well as consumption of computerized products.

2.1.1 Performance of the digital economy in Tanzania:

Time comparison and performance analysis of the digital economy in Tanzania from 1995 to 2014 was assessed to determine the status of agricultural, manufacturing and service sectors as major productive sectors in the economy of the country as shown on the table below:

Table 1: GDP Share In Percent from 1995 to 2015:

Sector	1995	2000	2005	2010	2015	2020*	2025*	Average
Agriculture	19.7	18	18.7	17	14.8	13	11	**17.6**
Manufacturing	7.2	7.5	18.1	19.1	20.5	21.3	22	**14.48**
Services	24	32..7	46.4	47.3	48.6	50	51	**39.8**

Source: BOT 2015; *: implies; projections

2.1.1.1 GDP share:

Refers to the percentage contribution of each sector to the economic growth in a particular period of time, it demonstrates clearly to what extent did the sector participated to generate output to influence development and the economy at large. GDP share shows the importance of the sector in the economy by having large percentage contribution share.

2.1.1.2 Agricultural sector:

The economic activities accounted under this sector include; crop farming, livestock keeping and fishing. This sector is considered being the backbone of the Tanzanian economy, whereby the large number of people participates in this activity though at subsistence level, hence less contribution to the GDP share with an average of 17.6% which is unsatisfactory for the sector to be considered as a pillar of the economic growth.

Despite Tanzanians engage in crop farming, livestock keeping and fishing with advantageous of land availability, and water bodies the activities are not market based thus the share contribution of agriculture remains low, with declining trend from time to time; implying that labour force

participating in agriculture declines over time. For example from 2005 to 2010 the contribution share of agriculture declined from 18.7% to 17% entailing that agriculture declined by 1.7% concluding that production in crop farming, livestock keeping and fishing declined on average respectively.

From that point view, the economy of Tanzania in agricultural sector is not well performing, with unsatisfactory status on average bases. This is due to use of outdated technology, lack of capital, seasonal fluctuations and price-product fluctuations.

Thus declining behavior of the share contribution of agricultural sector overtime requires different initiatives such as policies are highly recommended to improve its share contribution and raise the economy due to advantages of land and water availability.

2.1.1.3 Manufacturing sector:

The manufacturing sector involves the physical or chemical transformation of materials of components into new products, performed by power- driven machines, hand, factory, or worker's home. It includes the assembly of component parts of manufactured products and recycling of waste materials.

The manufacturing sector in Tanzania experienced an increasing trend over 20 years averaging at 14.48% as a contribution share to the economic growth. However the sector faced different reforms to boost up its performance at the optimal level which is agreed at international bases but still its overall performance is unsatisfactory. This is evidenced by the existing types of industries in Tanzania composed of food and beverage and textile industries which are less significant in increasing the national output.

Moreover the sector is characterized with obsolete technology, poor policies, low productivity and insufficient power supply as main causes of low contribution of the sector. However from 2000 to 2005 the sector evidenced a huge rise in contribution from 7.5% to 18.1%; which is satisfactory compared to previous years; implying that country had strong initiatives which facilitated growth.

The importance of manufacturing sector is evidenced from the developed countries, whereby they are referred as industrialized countries due to large contribution of the manufacturing sector which exceed 50% as classified by ISIC. Thus it is vital the government to adopt and formulate different initiatives to facilitate the development of the industry sector at desired level.

2.1.1.4 Service sector:

Like of developing countries, Tanzanian economy is dominated by service sector. This sector includes transportation, communication, public utilities, wholesale and retail trade, finance, and insurance services. It has been a growing sector in the economy due to the development in ICT sector which facilitates the performance of the sector at higher level. The industry has been accompanied by the positive trending in many countries.

The services sector in Tanzania has a positive growth which is characterized with higher rate averaging 39.8% which is satisfactory. This rate implies that the contribution of the sector exceeds other sectors on average and annual bases. Moreover the sector experiences huge investment due to its returns behavior which is accompanied by huge profits. Examples of the service companies such as telecommunication companies acquire huge supernormal profits from their service provision.

The performance of the sector between 1995 to 2015 as its contribution raising from 24% to 48.6% in the economy is influenced by the following factors which facilitate its large contribution in economic growth; development in ICT, research and development government initiatives, and world digitalization properties which attract many investors in the sector, being facilitative to other sectors as input increases its contribution hence rising up its potentiality in the economic growth.

Despite the positive GDP contribution of the sector, growing at desired rate still the sector is not poverty- alleviative based, since it is consumption based and less number of people employed due to lack of required skills for the sector potentiality. The sector is observed to be monetary vital due to high revenue obtained by the government from the ICT firms but in overall performance less output is produced, thus it is important for the government to focus on the sector not as economic based instead as facilitative sector.

From that point of view service sector seems to be very strong in terms of contribution which depicts that the economy depends on services instead of output generating sectors such as agriculture and manufacturing. This feature of service dominant economy arises due to the dynamic digitalized behavior, and consumption based economy. Furthermore sectors are projected to continue with the same behavior but service sector to contribute half of the GDP.

2.1.2 Internet Usage:

According to Mensah and Marfo (2009) internet is driving the new economy by creating unique opportunities for countries, companies and individuals around the world. The growth of e-commerce as a business technology is the result of such Internet driven initiative (Mensah and Marfo, 2009). It has created a universal platform for buying and selling goods and services and driving important business process inside the organizations (Lichtenberg, 1995). Many developed countries have a 30-50% difference between the number of people reached by digital networks and the number actually online. This gap jumps to 55-75%, and up to 90% in some cases, in emerging markets. Research shows three main reasons for not adopting the internet: a perceived lack of need (mostly because of a lack of local-language content), followed by a lack of skills and, as a distant third, affordability (World Economic Forum, 2013).

In developing economies too many areas lack internet connectivity, and many of these areas are not economically viable for private companies to serve using traditional business models. Connectivity's economics are determined by a variety of factors such as site security and the availability of electricity, with only some related to technology, it is only 19% (ITU 2014) of the total population in developing countries who can assess the internet as required; implying that less investment is done in ICT sectors and developing countries are less profitable for private companies to invest in.

The pace at which ICT applications are evolving poses particular challenges for measuring the digital economy. To date, measurement has focused on the availability and adoption of ICT technologies, in particular internet access. However, as the internet evolves and becomes basic infrastructure, and the simple "adoption" of ICTs saturates, metrics for specific applications become increasingly relevant (Lehr, 2012).

Table 2: Internet User's Statistics for Top Five Countries in the Global Level and the East African Countries in 2014

Country	Annual user growth rate	Internet penetration rate	Share of World Internet Users	Rank
Tanzania	16%	14.96%	0.26%	**49/198**
Uganda	17%	16.79%	0.22%	**55/198**
Kenya	16%	36.70%	0.57%	**33/198**
Rwanda	16%	9.17%	0.04%	**117/198**
Burundi	17%	1.39%	0.01%	**159/198**
Average	**16.4%**	**15.8%**	**0.22%**	
China	4%	46.03%	21.97%	**1/198**
USA	7%	86.75%	9.58%	**2/198**
India	14%	19.19%	8.33%	**3/198**
Japan	8%	86.03%	3.74%	**4/198**
Brazil	7%	53.37%	3.69%	**5/198**
Global	**7.90%**	**40.40%**	**-**	**-**

Source ITU.

2.1.2.1 The annual user growth rate:

Level of digitalization in the economy is reflected on the percentage increase on the number of internet users. The incremental number of individuals who can access the internet, via computer or mobile device, anywhere at an annual base has been popping up in different countries and globally at large.

East African countries have been growing approximately at same rate annually, with Tanzania, Kenya and Rwanda both having 16% growth rate which is satisfactory at global level average which is 7.9%; implying that these countries have similar incremental number of individual to the internet accessibility surpassing the global average despite having different populations, while Uganda and Burundi having 17% of growth rate exceeding other East African countries at average base and relative comparison.

Technology with its quick adoption behavior in developed countries provides a vision that large numbers of people have access to internet hence less annual growth compared to developing countries. For example USA with 7% annual growth rate; implying that the large portion of population already have an access to the internet hence less growth is required to meet the demand.

Despite the satisfactory percentage of growth to the internet usage in Tanzania, but accessibility to the internet is not guarantee that the internet used is contributable to the digital economy

growth, hence providing a strong standing point on the characteristics of the existing ICT sector to be featured with poor infrastructure, and obsolete technology.

Furthermore the annual growth of developing countries is higher that developed countries; implying that many people in developed countries are internet users hence large part of the economy is covered while developing countries require high rates to meet demand of uncovered part of the economy.

Development is not only about a step ahead, the quality at global standard is vital aspect to consider. The accessibility to the internet is important though the government has to focus on updated technologies to be adopted in order to increase viability in growth of digital economy. Thus formulation of technology adoption policy and laws which will provide guidance on adopting current technology and equipment hence to catch up with a pace of the world though not at optimal level but a desired one.

2.1.2.2 Share of the world internet users:

The importance of the interconnectedness in the world provides a vital concern to understand the part of Tanzania in the global share in internet usage; the percentage of country's internet users relative to the global internet users. This provides a clear picture about the position of Tanzania in terms of internet usage and extent to which Tanzania's economy integrates in ICT sector.

The average position of East Africa in internet usage is 0.22%, showing that the ICT sector is growing at a slow pace and unsatisfactory level. Moreover many East African countries such as Burundi and Rwanda with 0.01% and 0.04% respectively are in critical state. Despite the situation the position of Tanzania is not bad with 0.26% share of the world internet usage exceeding the average. Though this does not provide a strong stand in the world since this amount is inadequate compared to Kenya with 0.57% and China with 21.97% shares in the world, implying that Kenya has large portion at regional level and China at global level.

Low contribution of Tanzania at global level in internet usage arises due to the following reasons which include; absence of cyber-related policies, laws, late technology adoption (laggards), and poor ICT infrastructures. All these mentioned factors hinder the performance of Tanzania in the internet usage at all levels, hence low contribution at regional and global levels.

Moreover developing countries have small share in internet users compared to the developed countries which have dominated the world share; implying that many internet users in the world arise from developed economies hence contribute more to the world share since their economies are digitalized compared with developing economies with both digital and analog.

From that point of view it is clear that the demand for the policy related to cyber matters is high, to provide a way forward on ICT development, technology diffusion and adoption, security and protection to increase efficiency of the sector hence boosting up the number of internet users and level digitalization in the country.

2.1.2.3 Internet penetration rate:

This component assesses the relationship between the number of internet users in each country and its demographic data. It describes to what extent the internet usage has spread to the population, providing more details about the portion accessing and non-accessing the internet hence giving a picture on digital divide.

Considering the position of Tanzania with only 14.96% as penetration rate which is unsatisfactory at regional level compared to Kenya with about 36.7%; implying that the population of Kenya access internet more relative to Tanzania. This is depicted by a regional average of 15.8% thus it is only Uganda and Kenya exceeding the average, entailing that large number of people in East Africa have no access to internet. Moreover the regional level is at inadequate standard which is below the global average of about 40.4% which is dominated by Asian countries; showing that despite the larger population still the ICT sector performs very well to ensure accessibility to the ICT services and internet at large.

Low capacity in ICT matters, semi-digitized systems in sectors such as education, health, and banking, low technology adoption, poor government initiatives in ICT sectors and poverty to acquire new technologies, all these influence low penetration in Tanzania and most of the Sub-Saharan African countries. However the government has tried its best level to encourage digitalization in order to increase efficiency and transparency in the government agencies and departments.

Despite the high growth rate, internet penetration rate is low in developing countries compared with developed economies; this behavior entails that many people in developed countries have

accessibility to internet while in developing countries many people are not connected; hence low penetration respective to the population of the country.

Information technology has advanced rapidly throughout the world. In particular, Internet usage has grown so quickly that the number of Internet users is increasing at high rate, showing that the penetration rate at global level is spontaneously rising; implying that Tanzania has to quickly catch up with a pace to meet the world demand. From policy point of view there should be different initiatives to encourage internet usage to non-users in order to increase penetration rate as well as to raise the level of digitalization and to catch up with the dynamic state of the digital world at all levels.

2.1.2.4 Rank:

Performance of any aspect is judged in accordance with its concentration in different components. Basing on the penetration rate, internet user growth rate, and share of world internet, Tanzania has been ranked 49th out of 198 countries as members of ITU; entailing that the country has inadequate performance though is within top fifty countries indicating that the global position of many other countries is at critical state, hence different initiatives and approaches are highly demanded to raise the position to the competitive and acceptable performance in the world.

2.1.3 E-Commerce:

E-commerce refers to the use of the global Internet for purchase and sale of goods, services, including service and support after sale; it automates the conduct of business among enterprises, their customers, suppliers and employees anytime, anywhere (Bhasker, 2013). It creates interdependencies between company's value chain and suppliers and customers enhancing competitive advantage by optimizing and re-engineering value-chain links to the outside.

E-commerce is measured using the Global E-commerce Index (GEI); which is an index measuring global online retail strategy and identifying market investment opportunities while understanding the tradeoffs and barriers to success (GEI, 2015). This index demonstrates online market attractiveness and percentage of e-commerce participation and integration in a country.

Table 2: E-commerce performance statistics of different countries showing growth potential, infrastructure and online market attractiveness expressed in percentages:

Country	Growth potential (%)	Infrastructure (%)	Online market attractiveness score (%)
USA	22	91.5	79.3
China	86.1	43.6	77.8
UK	11.3	86.4	74.4
Japan	10.1	97.7	70.1
Germany	29.5	83.1	66.6
Gabon	12.1	13	20.2
Botswana	15.9	25	22.3
Angola	15.8	3.5	16.6
Nigeria	22.4	4.1	13
Tanzania	25	7.9	4.9
South Africa	9.6	22.7	25
Rwanda	18.2	11.2	5.7
Global	**20%**	**20%**	-

Source: GEI, (2015)

2.1.3.1 Growth potential:

This shows the projected online retail sales growth, which include sales of consumer goods to the general public through websites operated by pure-play online retailers or those owned by store-based retailers; the higher the rating the greater projected rate of growth.

The projected growth potentiality among the countries has small discrepancy, whereby populated countries are expected to have higher online retail sales growth. For example USA is expected to grow at 22% in terms of online retail sales which is satisfactory at global level with only 20%; implying that the USA online business will be at optimal required level due to high technology involvement of the country and awareness of the consumers.

Tanzania with growth potential rate of 25% which exceeds the global level shows that the country is at satisfactory status and implying that the service sector will grow at higher pace to facilitate development of ICT, and large numbers of retail activities will be computerized to catch up with the needs of the economy.

Optimality of the growth rate is influenced by different factors; whose contribution may affect the rate expected on the development and progress of online retail sales, these include; ICT development, customer legal protection and institutions to support and facilitate the activity. Though both developed and developing countries are projected to grow at approximately same

rate, however risks in developing countries are higher thus there are high probabilities for them to fail to attain the targeted growth.

The policy implications of this projected growth rate entails clearly on the future of the country about online sales; monitoring and evaluation is required to ensure no any uncertainties to alter the performance of the ICT sector hence to attain the projected growth rate, and the government has to design proper tax collection machinery to facilitate the revenue collection due to a shift from traditional to digitalized systems of trade.

2.1.3.2 Infrastructure:

This component of the index is all about indicating the facilitative behavior of institutions such financial organizations; credit cards and availability quality of services of these institutions. It focuses not only on finance matters but also on political and social institutions. The higher the rating the more the conducive a country's infrastructure is for purchasing online.

The stability of institutions is facilitated by the technology; many developed countries have higher score on infrastructure, for example Japan and USA with 97.7% and 91.5% respectively, which is efficient, exceeding the global level which is 20%; implying that many countries in the world have poor infrastructure thus more riskier for online purchasing. This performance indicates that the developed countries have higher capacity in terms of laws, institutions and policy to support the development of online retail commerce.

The score of Tanzania in infrastructure indicator in E-commerce is unsatisfactory with only 7.9%; implying that the country's position is poor in different services such as financial, and ICT services to catch up with other countries such as South Africa with 22.7% though other countries such as Angola and Nigeria with 3.5% and 4.1% respectively are worse. Thus the country is required to develop different initiatives to facilitate infrastructure hence to boost up the position.

Low infrastructure score of Tanzania is influenced by the following: poor financial systems, obsolete technology, ineffective policies, and poor regulatory measures. All these factors hinder the performance of the E-commerce and reduce the attractiveness of online markets.

From policy perspective with consideration of the continuous development and growth of the service sector, it is important for the government to undertake the programs which will initiate

and boost the sector to higher position by developing stability in infrastructure and political dimensions, hence acquire credit on online market attractiveness.

2.1.3.3 Online market attractiveness:

The online market attractiveness summarizes the conditions for e-commerce in a country as a result of growth potential and infrastructure with consideration of consumer behavior, online market size and market saturation, the higher the rate the higher the attractiveness towards the e-commerce in a country.

The concept of digital divide prevails in the findings obtained from the information whereby large numbers of developed countries have higher score than the developing countries. For example USA has 79.3 % showing that many consumers and businesses are hooked to the computerized systems, while the developing countries experiences unsatisfactory performances.

Tanzania is in infancy state with only 4.9% of online market attractiveness; entailing that the economy is less hooked with computerized system and traditional method of commerce is still dominant. This unsatisfactory performance is due to the factors: obsolete ICT, inadequate capacity among the customers and poor economic infrastructures to facilitate the online based trade.

Low attractiveness of the online markets reduces the rate of investment in ICT sector, since many investors fear on returns due to low market stimulation, failure to take advantages of the digital economy which simplifies the economic activities and easy the process of transaction due to reduction in transaction costs and time, thus it is important for the government to focus on the matters as a global agenda since the country trades not only domestically instead at global standard.

Digitalization of the trade sector at different levels; retail, wholesale, domestic and international will improve the performance of the economy and raise the GDP, implying that the policy has to focus on e-commerce as a productive sector similar to traditional trade hence boosting up the economy similarly to other developed countries.

3.0 Weaknesses and Challenges facing the digital economy in Tanzania:

This section intends to describe the weaknesses and challenges influencing the performance of digital economy; detailing on how these affects the performance of Tanzanian digital economy.

Main issues analysed on this section include: network capacity, internet usage, competition, network coverage, ICT infrastructure, consumer protection, online business taxation systems, and global digital flow:

3.1 Weaknesses of the digital economy in Tanzania:

These include the factors which are legally within the system control but failure of the government to deal with them; they negatively affect the performance of the digital economy in Tanzania; they include: lack of building network capacity, insufficient network coverage, lack of consumer protection legislation and quality and safety standards, lack of comprehensive ICT infrastructure for smart cities, lack of online business tax collection systems and lack of global governance of digital flows.

3.1.1 Lack of building Network Capacity:

Not being able to meet rising demand for network capacity is often an issue of lack of sufficient spectrum allocated to mobile use because so many users in emerging markets access the Internet on mobile devices, and mobile is expected to be the predominant technology for billions of new users as well (Bock, *et al.,* 2014). Too often, policy makers and regulators focus on the short-term value of spectrum licenses rather than maximizing the use of this precious asset, and the result is a lack of available, affordable spectrum for mobile usage.

3.1.2 Insufficient Network Coverage:

The economics of expanding network coverage are determined by a variety of factors, only some of which are related to technology. Population density, topography, distance from fiber connection points, and consumer purchasing power are all huge contributors to cost and revenue calculations (Bock, *et al.,* 2014).

The economics of expanding coverage to especially poor and remote areas are often the most challenging, particularly using traditional business models. Ironically, it is for people living in these same areas that internet access could have the greatest impact.

3.1.3 Lack of Consumer protection legislation and quality and safety standards:

Consumer protection legislation and quality and safety standards, whose compliance must be guaranteed by the government is still a complicated task in a digital economy which, by its very nature, has no borders (Domènech, 2015). The physical markets mimicked by the regulated to attain efficiency in the market is very hard, due to the fact that in digital economy consumers and producers are invisible in terms of exchange hence fail to identify whether the used price was optimal for both consumers or not.

On a case of quality remains as a question on how the quality of the online products such as Software are assessed to ensure that the consumers' utility and safety are maximized. Legislative harmonization in Tanzania would improve in this respect as it would increase consumer protection at the same time as boosting the digital economy.

3.1.4 Lack of comprehensive ICT Infrastructure for Smart Cities:

Planning for and deploying information and communications technology (ICT) infrastructure for so-called smart cities is very important. Considering that these areas, tools ranging from those that perform basic monitoring to advanced systems that enable predictive, analytics-based applications can all have a significant impact on citizens' well-being and the efficiency of their daily lives (Vermesan and Friess, 2014).

Many of the ICT-based systems, apps, and services that can address urban needs such as energy, transport, water and waste, social services, and building management and services already exist, absence of comprehensive vision for building the ICT infrastructure or for constructively using the massive data that it generates every day, in business cases for many ICT investments are complex, and it is difficult to finance large investments with payback periods that may extend over many years.

3.1.5 Lack of Online business tax collection systems:

In Tanzania tax remains the main source of government revenue, but a case of online business still has not proved strong measures on how the revenue is collected given that the system is not whole hooked to the digital operation. The government fails to identify the services obtained from productive socio-economic activities done through the internet using software hence ending up collecting the revenue only at point of physical product delivery and not on software services and products. Some large technological firms have managed to reduce their tax bill by placing their sales in countries with lower taxes instead of the country where the buyer is actually

making the transaction. Similarly, in order to avoid paying tax in countries with higher rates, they transfer part of their profits to subsidiaries in countries with lower rates.

3.1.6 Lack of global governance of digital flows:

Internet as a case in point as helps to make a debate that is sometimes too generic a little more concrete, as well as the fact that it is the medium through which a large part of digitalized globalization is occurring. The internet owes its success to being a single, global system, in particular its main protocols and infrastructures. But today there are two points of friction that could erode these principles: net neutrality and cyber security.

First is net neutrality means that all data must be treated equally, without discrimination due to origin or content; consequently the internet is sometimes seen as a single service instead of a network with different categories. In practice this means, for instance, prohibiting the firm that owns the infrastructure to charge for some data to be transmitted more quickly (Domènech 2015).

Second is cyber security is a critical issue for governments: the size of cybercrime is now comparable in volume with drug trafficking. It is not easy to balance internet security (which should be desirable for all parties) with internet control to ensure national and international security. For some governments the internet might represent a political risk or they may want to use it as a means of controlling their citizens. In any case using the internet to achieve national political goals damages its integrity and functionality.

3.2 Challenges of digital economy in Tanzania:

They include all aspects which are out of system's control but failure of the government to handle them from different dimensions they can negatively affect the performance of the digital economy in Tanzania; they include: lack of satisfactory internet usage, competition, and inadequate of shifting infrastructure demands.

3.2.1 Lack of satisfactory Internet Usage:

In Tanzania many people are not connected to the internet as evidenced by low share of the global contribution in internet usage with only 0.26 percent. This problem is critical in rural areas where the country experiences insufficient network coverage and low ICT investment due to lack of motivation associated with profit and returns to the investors. Despite the number of telephone

users to rise but internet connectivity is low; implying that the adopted technology is outdated and people are only concerned about telephone communication and not internet usage.

How to bring more people online, particularly in emerging markets remains an issue. In many developing countries, there is big difference between the number of people who have access to digital networks and the number who are actually online. BCG's research shows three main reasons for lack of adoption: perceived absence of need (resulting largely from lack of local-language content), followed by insufficient skills, with affordability as a distant third. Local content in local languages is vital for attracting local users and serving local needs (Goh *et al.,* 2012).

3.2.2 Market Competition:

Traditionally, firms entered the market to promote and sell their products as the consumers, but in digital economy firms are facing a strong opposition from the existing virtual digital marketing companies. The worse state with digital marketing is royalty and accuracy of the operating programme or application which will allow customers to be comfortable, thus new entries in digital market will face hardship on how to build trust to the customers, hence causing fear or exit from the market due to hardship in maturity stage.

Tanzanian economy experiences many physical firms operating at a given location of establishment. Number of virtual firms is low though the existing ones are strong and monopolies depending on the quality of the services provided. The existing firms are mainly operated by young people, with small capital and missing products to meet the market demand.

3.2.3 Inadequate of shifting Infrastructure Demands:

In emerging markets, the changing nature of consumer and business usage and the rise of the internet of things raise new infrastructure demands. As mobile data usage matures, low latency and far more uploads raise new challenges for network infrastructure. Meeting this challenge presents some unique spectrum requirements, such as more data being uploaded and data with mission-critical requirements, and increases the need for standardized and secure communication protocols.

4.0 Social economic impact of digital economy in Tanzania:

This section details on the social economic impacts of digital economy and hence concluding the advantages of digital technologies and competitiveness in the economy.

Main issues discussed include: purchasing cost, right products in stock, customer service, sales and marketing costs, and virtual purchases. All these aspects show on how digitalization has a major transformative effect, and has impacted upon every sector of the economy:

4.1 Lower purchasing costs

Buying materials or services for a corporation can be a complex, multi-step process. First, purchasers have to find suppliers who make the product and determine whether they meet volume, delivery, quality; and price requirements. Once a potential supplier has been chosen, detailed drawings and information are transmitted to the supplier so that the product is built to exact customer specifications (Henry *et al.,* 1999). Unlike the physical checking which requires an individual to direct visit the market and incur different costs such as transport cost, time and sometimes missing the suppliers at the market. Companies lower procurement costs by consolidating purchases and developing relationships with key suppliers to benefit from volume discounts and tighter integration in the manufacturing process. They also cast a wide net for lower-cost sources of supply. Large companies have been using EDI over private networks to reduce labor, printing and mailing costs in the procurement process. Automating routine procurement means the procurement staff has more time to focus on negotiating better prices and building supplier relationships (Haltiwanger and Jarmin, 2000).

4.2 Reduced inventory/the right products in stock:

The longer it takes for production schedules to reach suppliers, the more inventories a company has to hold to account for delays and errors, and the less quickly it can react to changes in demand. The more inventories a company holds, the higher it's operating costs, and the lower its profits. Carrying more inventories does not ensure better customer service, either. Managing inventory properly results in better service for the customer and lower operating costs for the company. Increasing the frequency of inventory "turns" (the number of times inventory in existing warehouse or store space is sold or used for production each year) reduces inventory-related interest, handling and storage costs. Reducing inventory levels also means that existing manufacturing capacity is more efficiently utilized. More efficient production can reduce or eliminate the need for additional investments in plant and equipment.

4.3 More efficient and effective customer service:

Companies are beginning to use the Internet for customer service. Having product descriptions, technical support and order status information online not only saves money by freeing up a company's own customer service staff to handle more complicated questions and manage customer relations, it can also lead to more satisfied customers. Companies have long gathered and stored information about customers and products in databases that only certain authorized employees can access. Innovative businesses are finding ways to tap the potential of that information, making it available to those who need it most whether it's a customer service representative answering a phone call or a customer looking for account information or technical support online (Margherio, 1999). Few things are more frustrating to a customer than uncertainty about when an important purchase will arrive. Too often, phone calls to a supplier result in a series of transfers from one department to another and an eventual promise to check on the status of the order and to call the customer back. This pattern consumes time and money for the customer and the seller.

4.4 Lower sales and marketing costs:

An individual sales person can support as many customer accounts as he can physically visit or contact by telephone. Therefore, as the number of accounts increases, so does the size of the sales force; even direct marketing companies increase staffing as telephone order volume increases. By contrast, a Web business can add new customers with little or no additional cost. Because its sales function is housed in a computer server rather than physical store locations or sales people, its reach is bounded only by the capacity of the servers to respond to inquiries and orders (Jobber *et al.,* 2004).

Internet can also make traditional sales organizations, layered distribution channels, catalog sales and advertising more efficient. With automated ordering capabilities, sales representatives no longer have to prepare time-consuming manual orders. Instead, they can spend time building and maintaining customer relationships. Electronic catalogs present far more information and options than their paper counterparts. Direct marketing online can shorten repurchase cycles and increase the ability to sell additional items.

4.5 Making Virtual Purchases More Real:

Internet retailers offer very detailed product descriptions online. Many provide toll-free numbers for customers who prefer to speak with a sales representative before making a purchase. As video and voice become more widely used, some Internet sites can be expected to give customers the choice to click on a button and speak directly with a customer service or sales representative via the Internet (Pleasant, 2012). As bandwidth increases, three-dimensional images that show the product from a variety of angles will supplement or replace the flat photos on most sites today. Customers visiting Internet furniture stores will be able to furnish their own homes and apartments by "dragging and dropping" furniture and accessory icons into rooms the customer has made to resemble those in his home. This feature will enable customers to gauge how well different pieces of furniture fit into a room of a given size, and which furniture styles or colors work best together.

5.0 Risks associated with Digital Economy:

This section covers the risks associated with emerging digital economy; these include aspects which may hinder the performance, causing a discrepancy between expected and actual outcomes. Thus showing on how the likely behavior of the digital market can alter the performance of the economy.

Main issues examined on this section include: hyper-connectivity, future potential drives current valuation, and digital innovations. These risks include:

5.1 Hyper-connectivity:

What can happen to a ride-sharing service if connectivity to the app goes down for a few hours; apart from revenue loss, it would create unpleasant experiences for its customers. Repeat of such instances can also impact its brand. Hence, overdependence of any business on hyper-connectivity can be risky. This is evidenced by Risk Nexus report which depicted that Most of the recent cyber security trends point to a darker future, with every year worse than the last: more data breaches, more disclosures of critical vulnerabilities, and more nations building and employing offensive cyber capabilities (Risk Nexus, 2015). The risks of being connected can outweigh the economic benefits derived out of it. The advantages of digital economy will vanish if this risk materializes in the future. Thus increasing safety of the internet provider, users and service itself is very important in order to raise customer royalty and confidence.

In Tanzania frequently customers complain about the accuracy of the service providers in terms of reference provision for different services such as electricity, airtime and electronic transactions hence individuals become more preferable to use traditional method to attain services instead of digitalized transactions. Some area especially in rural areas experience slow network can even try to use the digitalized services provision, not only that but also a case of skills and knowledge many people in Tanzania are not skilled on computer systems and electronic services hence incur extra cost to obtain simplified services at higher prices in analogy cases.

5.2 Future potential drives current valuation:

Digital economy encourages valuation of a company based on its potential to capture monopoly profits in the future. The value of a business today is the sum of all the money it will make in the future. Why does it happen; it happens because investors look at a company's projected cash flows on a longer term. So for many technology businesses, values are expected to come 10 to 15 years in but the biggest risk in this model is the uncertainty of the future. Catastrophic events, shifts in the world order, unexpected market regulations, dramatic changes in user needs and other factors may disrupt the future of such companies. If this happens to most of the businesses whose value lie in the future, the entire digital economy may burst like the infamous dot com bubble.

5.3 High focus on digital innovations:

A software startup needs a much lesser amount of seed money. Hence investors are more interested to fund digital innovations than to fund ideas in analog businesses. But is digital technology enough to solve world's most pressing problems; World Development Report 2016 on Digital Dividends highlights the need to strengthen the analog foundations of the digital economy. Without sufficient innovations in the analog world, digital transformations cannot bring all the benefits. If most of the investments get directed only to digital technologies, new age economy will suffer.

Traditional economy is giving way to new age economy. Businesses that fail to undergo digital transformations may become extinct. But the strengths of digital economy can also turn out to be its biggest risks. Overdependence on hyper-connectivity or relying on future cash flows can

adversely affect the resilience of a company, also too much of focus on digital innovations at the cost of having weak analog foundations can be destructive for the overall economy.

6.0 Conclusion:

Digital dependence gives rise to new issues with respect to the ability of consumers to easily access and uses their data across devices, networks, and applications, while at the same time raising privacy and security concerns around the use of their data by others. Left unaddressed, unwarranted limitations on seamless or universal data use could come to constitute a serious barrier to people's ability to get basic things done as well as to overall digital growth and economic activity (Bjornland, *et al*. 2012).

6.1 Main findings:

Relative to the terms of reference and objectives different aspects were assessed thus attaining the following findings from the study:

The emerging digital economy in Tanzania found to have mobility and pervasiveness characters which were observed from the assessed characteristics of digital economy. The Tanzanian digital economy found to have the online businesses conducted through electronic digitalized transactions and allowed the massive flow of data and information from the customers to suppliers and considering the pervasiveness the economy performed low with absence of multi-sided business model hence less attractive at international level.

The digital economy in Tanzania found to have unsatisfactory internet usage, insufficient network coverage and lack of building network capacity whereby Tanzania were assessed in terms of the penetration rate, internet user growth rate, and share of world internet, being ranked 49th out of 198 countries as members of ITU; implying that the country was not performing well compared to other countries.

The e-commerce in Tanzania is not performing well; implying that on average growth potential rate, infrastructure, and market saturation were unsatisfactory hence low percentage rate in online market attractiveness with a score of 4.9% which is poor compared to other countries such as USA with 79.3% despite the differences in level of digitalization.

Insufficient network capacity, low internet usage, low competition, lack network coverage, poor ICT infrastructures, absence of consumer protection, and absence online business taxation systems viewed as weakness and challenges facing the digital economy in Tanzania, hence hindering its performance at regional and global level.

The connectivity of Tanzania experiences inefficiency due to externalities; whereby the systems fail to accommodate many users. This risk of hyper-connectivity was found to affect the performance of Tanzania economy by hindering online transactions of many customers.

6.2 Policy Recommendations:

The government has to create and review policies related to digital economy, thus to guide the performance, interconnectivity and flexibility in accordance with local and global needs (JICC, 2015). The inclusion of the digital economy as policy variable will enable the government to monitor the economy at optimal state and avoiding the existence of underground economy, hence widening the tax base and increase in revenue.

Government has to strongly support and facilitate the ICT investments in order to extend coverage of internet usage especially in rural areas, hence rising up the penetration rate and user growth rate thus attaining the desired global share coverage. Suitable environment is recommended to protect the existing customers while creating a room for new ones.

The government is highly recommended to attain a digitalized system to simplify the socio-economic activities undertaken through the internet and other networked access. Being able to capture the illegal online products and orders provided through the internet. The digitalized system will help the governments to identify the illegal trend of ordering illegal products such as illegal drugs such cocaine, and heroin thus increasing the performance of the e-commerce.

Adoption of online businesses tax collection systems is highly recommended as a means to widen tax base by capturing the online business taxes. Implementation of digital technologies into public administration tends to modernize the public sector service delivering and revenue collection efficiency (OECD, 2014) implying that if the government of Tanzania will adopt the system will extend the tax base.

6.3 Way Forward:

Given the policy recommendation and the importance of ICT development and usage in the economy, digital economy covers the strategic areas which are important for growth and development of the national prosperity in all activities. Thus it is vital to review a policy which guides ensures of trade in order to accommodate the effects of digital business.

Formulation of strategic regulation is a sufficient condition required quickly to optimize the ongoing digital businesses at all levels from individual, firms and government at electronic stage. The formulated strategies will provide stable and sufficient environment to the people to conduct business at stable state with assured government support in a case of any inconveniences.

Considering the importance of the issues explained it is very crucial to track down and follow up the digital economy from all dimensions; research, workshops and other facilitative and coordinating activities, thus raising awareness on the subject matter to the society and the world at large.

REFERENCES

Anamuah-Mensah, E., & Marfo, G. (2009) E-business adoption in the banking industry in Ghana

Bhasker, B. (2013). *Electronic commerce: framework, technologies and applications*. Tata McGraw-Hill Education

Bjornland, D., Goh, E., Haanæs, K., Kainu, T., & Kennedy, S. (2012) The Socio-Economic Impact of Mobile Health, *The Boston Consulting Group*

Bilbao-Osorio, B., Dutta, S., and Lanvin, B. (2013) The global information technology report 2013

BOT (2002): Economic Bulletin December 31, 2002 Vol. XXXIII No. 4

BOT (2015): Economic Bulletin for Quarter Ending September 2015 Vol. XLVII No. 3

Global E-commerce Index 2014

Domènech. J. M. (2015) *the digital economy; the challenges facing the State in the new digital economy,* Dossier

El-Darwiche. B et al (2013) *Digitization for economic growth and its job creation*; Regional and Industry perspective; Strategy & is part of the PWC network.

Haltiwanger, J., & Jarmin, R. S. (2000) Measuring the digital economy. *Understanding the Digital Economy: Data, Tools and Research*, 13-33

Happy Makondo and Zhou-hua Wang (2015) *A review of the Uprising Ecommerce among SMEs in Tanzania,* International Journal of Information Science

Henry, D., Buckley, P., Gill, G., Cooke, S., Dumagan, J., and Pastore, D. (1999) *The emerging digital economy II*. Washington, DC: US Department of Commerce.

Helfat, C. E., & Raubitschek, R. S. (2000), PRODUCT SEQUENCING, KNOWLEDGE, AND E-COMMERCE, *The Strategic Management of Intellectual Capital and Organizational Knowledge: A Collection of Readings, New York: Oxford University Press, forthcoming*.

JICC (2015): Digital economy in Japan and the EU-an assessment of the common challenges and the collaboration potential-

Lehr, W. (2012), "Measuring the Internet: The Data Challenge", OECD Digital Economy Papers, No. 194, OECD Publishing

Lichtenberg F (1995). The Output Contributions of Computer Equipment and Personnel: A Firm Level Analysis, Economic of Innovation and New Technologies, Vol.3, No. 3, pp 20-217

Lucking-Reiley, D., & Spulber, D. F. (2001) Business-to-business electronic commerce, *The Journal of Economic Perspectives*, *15(1), 55-68*

Margherio, L., Dave, H., Cook, S., Montes, S. (1999) *The emerging digital economy*, US Department of Commerce,

Mainka, A., Khveshchanka, S., & Stock, W. G. (2011) Dimensions of informational city research. *Digital Cities 7–Real World Experiences*

OECD (2014): Recommendation of the Council on Digital Government Strategies Public Governance and Territorial Development Directorate

OECD (2015) Digital Economy Policy Legal Instrument, Digital Security Risk Management for Economic and Social Prosperity

Pleasant, B., and Passios, T. (2012) A Realistic Look at Social Media and the Contact Center, *Customer Insertion Solutions*, *30(10), 36-37*

Risk Nexus (2015) Overcome By Cyber Risks? Economic benefits and costs of alternate cyber Features

Vermesan, O., & Friess, P. (Eds.) (2014) *Internet of Things-From research and innovation to Market Deployment* (pp. 74-75). River Publishers

World Economic Forum (2013) Expanding Participation and Boosting Growth: The Infrastructure Needs of the Digital Economy