DIGITAL ECONOMY DEVELOPMENT IN GEORGIA IN THE CONTEXT OF DIGITAL DIVIDE

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SCIENTIFIC REVIEW

ISSN 2637-2150
e-ISSN 2637-2614
UDK 658.8(1-664):004.738.5
DOI 10.7251/STED2102067Z

Paper received: 22.09.2021.
Paper accepted: 30.10.2021.
Published: 29.11.2021.
http://stedj-univerzitetpim.com

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ABSTRACT

The paper aims to review the digital evolution process in the Georgian economy and to evaluate potential gaps relative to other countries. Digital evolution is a multidimensional concept, therefore to underline the key sectors where the digital divide is substantial between the developed world and Georgia is essential for further, more specific research.

The research's major expected outcome serves to fill the local academic literature gap related to digital development's role in the digital economy, therefore it can be a basis for upcoming research in this field in Georgia. This approach can be also used for other developing countries which are transforming to digital economies. It is answering the specific questions: Is there a digital gap between Georgia and other economies? And, which digital sectors are the most or least developed?

Digital development is influenced by several factors. The research uses digital evolution indices to measure digital evolution in different sectors from demand conditions to institutional ecosystems.

Keywords: Digital Economy, Digital Divide, Digital Evolution, Economy of Georgia.

INTRODUCTION

The digital economy has become an integral part of the modern world and it requires high levels of digital development to work effectively in practice. However, digitalization achievements are not the same in all regions around the globe.

The digital divide between developed and developing countries becomes the critical challenge for developing economies including the Georgian economy. Therefore, studying the digital divide between countries is important in understanding current challenges in the digital economy.

As the digital economy is expanding, every new achievement in digital development has an effect on the real economy. Almost every country is promoting their strategic goals towards a digital economy. Today, on a governmental level Georgia in cooperation with various donor organizations (such as the World Bank, EU4Digital etc.) is undertaking various programs to develop and upgrade the infrastructure for the digital economy.

Access to digital technologies is sharply increasing in Georgian households

and businesses. 86.6% of Georgian households and 94.0% of local enterprises have access to the world wide web (National Statistics Office of Georgia, 2021). On the other hand, they are not using all the functional advantages which are provided by digital innovations, for example only 21.2% of internet users are benefiting from e-commerce services (National Statistics Office of Georgia, 2021). We should also say that access and usage on digital technologies are not the only factors to measure a country's digital development. It should also include many factors like state involvement in the digital economy, institutions, digital ecosystems, etc. (Zhghenti, & Chkareuli, 2021).

Unfortunately, a full and recent overview of the Georgian economy's digital development is not available in academic or other sources. Therefore, this research paper aims to describe the big picture of the digital evolution of Georgia including analyzing the current situation and upcoming challenges.

LITERATURE REVIEW

Differences in digitalization development levels between different countries has been a topic in academic studies from the early 2000s. The problem is described as a digital divide between developed and developing nations (Cullen, 2001; Warschauer, 2003; Bagchi, 2005; Selwyn, & Facer, 2007; Fuchs, & Horak, 2008). After two decades of digitalization worldwide, a significant gap still exists between different regions and countries in terms of reaching and sharing information across rapid developments in computer science and information technologies. It should be noted that there is a crucial difference between developed and developing countries and between OECD member and non-member countries in terms of these ICT indices (Mardikyan, Yildiz, Ordu, & Simsek, 2015).

Rapid digitalization in the world promoted a concept of digital convergence. According to recent studies, CEE countries "digitally" converged to the developed EU countries (Mitrović, 2020) and benefits exist across Europe, and specifically in East EU countries (Ragnedda, & Kreitem, 2018). On the other hand, the digital gap widened between the WB and EU countries during the period 2002–2017, where the key factor is level of investment in human capital development, especially related to skills for ICT use (Mitrović, 2020). If we look on a global level, the lowest convergence level group showed the highest speed of convergence and Education is identified as the most effective means for raising the digitalization level (Park, Choi, & Hong, 2015).

Digital divide is determined by country's relative development levels, but on the other hand, digitalization accelerates economic development and supports economic convergence. Several publications investigate how digitalization factors are contributing to economic growth (Koutroumpis, 2009; Czernich, Falck, Kretschmer, & Woessmann, 2011; Kongaut, & Bohlin, 2017; Hussain, 2020, Myovella, Karacuka, & Haucap, 2020). The empirical findings here suggest that broadband's benefits are major and robust for both developed and developing countries (Qiang, Rossotto, & Kimura, 2009). The important evidence is that broadband had a significant impact on growth in GDP per capita (Czernich et al., 2011) which is a crucial indicator used to measure economic convergence.

MATERIALS AND METHODOLOGY

Primary sources are used throughout this research. The main primary source consists of data from Digital Intelligence Index from Tufts University (2020 edition) and its component - Digital Evolution. It combines 160 indicators into four key drivers (Supply Conditions, Demand Conditions, Institutional Environment, and Innovation and Change) and measures 90 economies (including Georgia). The data was particularly valuable in analyzing the topics: current digital developments level and recent digital progress.

Other primary sources are databases from the National Statistics Office of Georgia including data on digitalization

levels, digital usage activities, characteristics of e-commerce services, etc. (Databases: "Information and Communication Technologies Usage in Enterprises", "Information and Communication Technologies Usage in Households").

Digital evolution indices (score and momentum) were used in the statistical overview. Additionally, the indices were beneficial to calculate a digital gap according to the Digital Intelligence Index database. Digital evolution score includes 4 components and 13 sub-components: 1. Supply Conditions (Access Infrastructure, Transaction Infrastructure, Fulfillment Infrastructure), 2. Demand Condition (State of the Human Condition, Device and Broadband Uptake, Digital Inclusion, Digital Payment Uptake), 3. Institutional Environment (Institutional Effectiveness and Trust, Institutions and the Business Environment, Institutions and the Digital Ecosystem), 4. Innovation and Change (Inputs, Processes, Outputs).

The research calculates median numbers at sub-category level for country groups of interest (all countries, Europe and Central Asia, Upper-middle income countries) and then computes the difference between Georgian and median indicators. These calculated numbers are used for analysis as digital gaps.

RESULTS

Countries evaluated in digital intelligence index (DDI, December, 2020) are arranged by their digital evolution levels into four zones ("Break out", "Watch out", "Stand out" and "Stall out"). Georgia's overall digital evolution score is 53.46/100 and ranks 47th from 90 countries in the research (Figure 1). On the other hand, digital evolution is expanding, therefore digital evolution momentum (60.72/100) is high and ranks 7th place in overall rankings. Accordingly, Georgia is placed to "Break out" of country groups where digital evolution levels are not too high but fast-growing. From the four main components of digital evolution (Supply Conditions, Demand Conditions, Institutional Environment, and Innovation & Change), by three components Georgia is aligned to "Break out" zone while the only "Innovation and Change" sub-component is aligned to "Watch out" zone. This means innovations towards digital evolution are slowly developing.

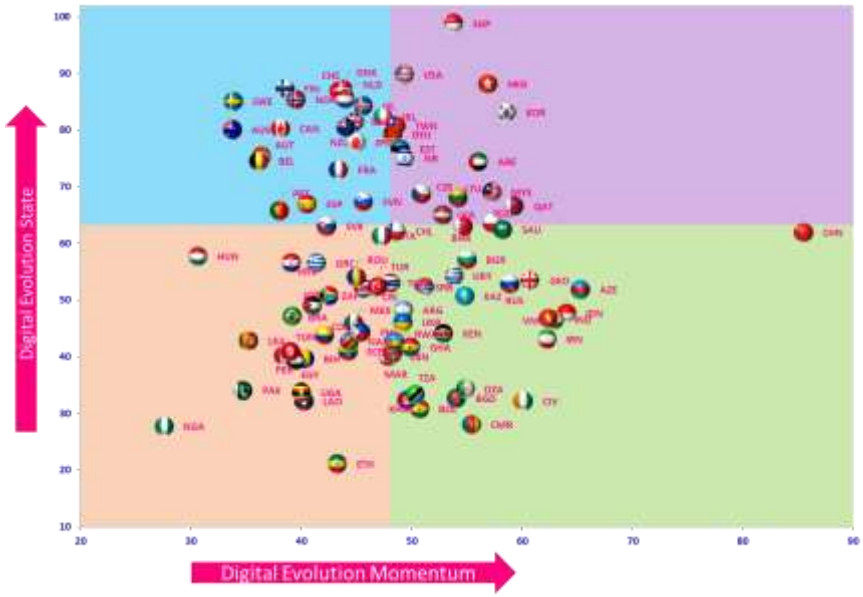

Figure 1. Digital Evolution Index (DDI) for 90 economies, 2019 year

We calculated digital gaps for 12 sub-components of digital evolution score for Georgia. The most interesting is a digital gap to median score for all countries. From 12 sub-categories, nine of them shows digital gap to median score and for three sub-categories, Georgia's score is higher than median value (Figure 2). These successful three sub-categories are: two sub-categories from Institutional Environment – Institutional Effectiveness and Trust, Institutions and the Business Environment and the Inputs sub-category from Innovation and Change. The Correlation coefficient between digital gap and digital evolution score is high (0.60), meaning that digital divide to the developed world is characterized by indicators which are low in absolute terms.

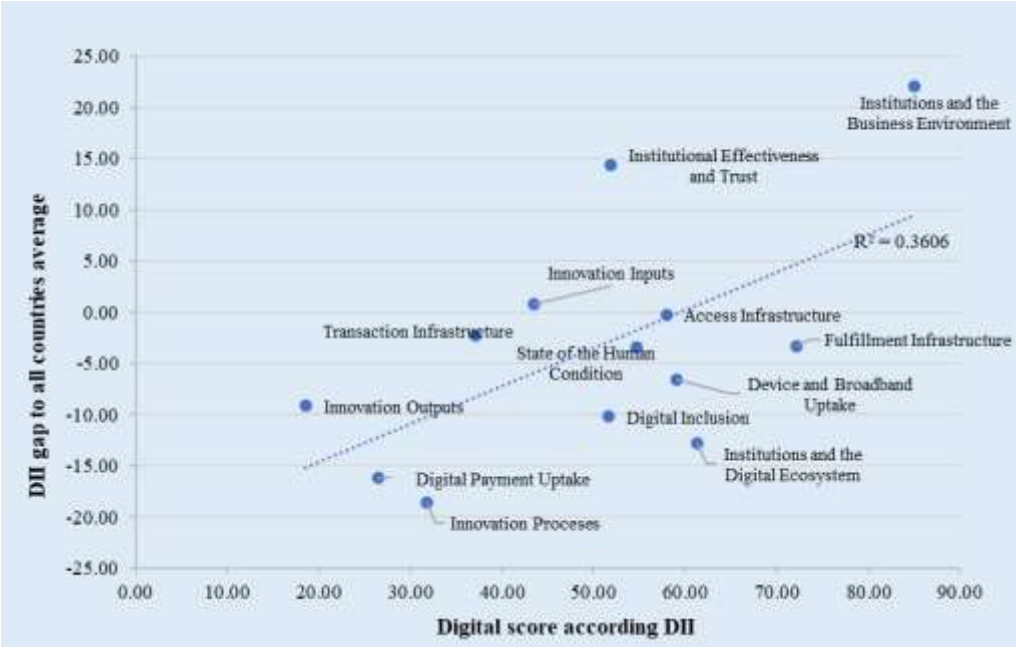

Figure 2. Digital gap and Digital levels in Georgia by DII sub-categories

The research also analyzed digital gap between Georgia and country groups (calculating gap between Georgia and median score from upper-middle income countries; Georgia and countries from Europe and central Asia region). Results were mostly similar, correlation between digital evolution gap and digital evolution scores are all high in the selected country groups. It is assumed that there is not a specific digital gap for Georgia in terms of region or similar income country groups (Table 1).

Table 1. Georgia's digital divide to other countries on DDI sub-category level

Country Groups	Georgia's score is higher than average (from 12 sub-categories)	Georgia's score is lower than average (from 12 sub-categories)	Most advanced sub-category in Georgia compare to…	Highest divide in Georgia compare to ...	Correlation between Georgia's scores and digital divide (R)
All countries	3	9	Institutions and the Business Environment	Innovation Processes	0.60
Upper middle-income countries	3	9	Institutions and the Business Environment	Innovation Processes	0.59
Europe and Central Asia	3	9	Institutions and the Business Environment	Innovation Processes	0.58

DISCUSSION

This part discusses strengths and weaknesses in factors towards the digital evolution process.

Strengths

Institutional Environment is strongly supporting digital convergence in Georgia as we see from digital intelligence index. Legal Environment is appropriate for digital activities but there is still need for specific laws related to the digital economy. Additionally, the sub-category of Supply Conditions is also improving by a high rate. Internet access is increasing in Georgia - 15.4% increase during the last five years and 86.1% of Georgian households had internet access in 2021. It is noteworthy that mobile phone usage is high; 92.9% of the population (aged 6+) are using mobile phones which is a key instrument to accessing the network. From the demand perspective, digital technologies are becoming popular in Georgian population. In 2021, 77.4% of the Georgian population use the internet and 70.1% of the Georgian population are using the internet almost daily. There is no gender digital divide between women and men in internet usage, respectively, 76.8% and 78.0%. Inputs in digital innovation is also a strong factor and startup capacity is sizeable.

Weaknesses

Despite the appropriate institutional environment, online access on state services is rare and state digital participation is limited, see E-Participation index (Georgia's score is 0.62 out of 1.0 and ranks 84th of 141 economies in the 2019 edition of the Global Competitiveness Report). From the supply side, there is an urban-rural digital divide related to internalization levels which is higher in significantly urban centers (90.7%) compare to rural areas (74.5%). Digital demand conditions are improving but staying weak in several aspects. The main use of the internet is communications services within the population but economic-related activities are also becoming popular, for example 38.5% of internet users search for information about goods and services, 34.7% of them use internet banking and only 21.3% use e-commerce services. E-commerce usage rates are higher in urban areas (27.4%) and the youth population (age 15-29) are the main target consumer segment (37.3%). It should be noted that 18.4% of enterprises (companies with hired workers) have their own webpage, but only 2.6% of enterprises are receiving orders via webpage for goods or services. In the face of strong inputs in digital innovations, innovation output and value creation are too weak. Innovation usage and effectiveness levels are generally low in Georgian companies, especially in SME firms.

CONCLUSIONS

Digital development is shaping the future of the economy. Technological progress presents various challenges for all countries and especially for developing economies. Globalization has already made Georgia digitally partially developed but it requires further actions to overcome

challenges connected with digital transformation. Firstly, increase the access and variety of digital services in the public sector - e-governance models are crucial in the modern policy-making process. Secondly, it is important to promote the internet to perform business transactions online that allowing people to complete orders using digital solutions including to find, select, and buy product/service via web. The next recommendation is to develop sharing economy platforms which are a good tool to get high digital involvement in the economy. Finally, it should be critical to introduce of strict terms to evaluate and manage the future practical outputs for innovations in the digital sector.

ACKNOWLEDGEMENT

Article is prepared at Business and Technology University (BTU) through the "INITIATIVE 5.0".

LITERATURE

Bagchi, K. (2005). Factors contributing to global digital divide: Some empirical results. *Journal of Global Information Technology Management, 8*(3), 47-65.

Cullen, R. (2001). Addressing the digital divide. *Online information review*.

Czernich, N., Falck, O., Kretschmer, T., & Woessmann, L. (2011). Broadband infrastructure and economic growth. *The Economic Journal, 12*1(552), 505-532.

Fuchs, C., & Horak, E. (2008). Africa and the digital divide. *Telematics and informatics*, *25*(2), 99-116.

Hussain, Z. (2021). Paradigm of technological convergence and digital transformation: The challenges of CH sectors in the global COVID-19 pandemic and commencing resilience-based structure for the post-COVID-19 era. Digital Applications in Archaeology and Cultural Heritage, e00182.

Kongaut, C., & Bohlin, E. (2017). Impact of broadband speed on economic outputs: An empirical study of OECD countries. *Economics and Business Review, 3*(2), 12-32.

Koutroumpis, P. (2009). The economic impact of broadband on growth: A simultaneous approach. *Telecommunications policy*, *33*(9), 471-485.

Mardikyan, S., Yildiz, E. A., Ordu, M. D., & Simsek, B. (2015). Examining the global digital divide: a cross-country analysis. *Communications of the IBIMA*, *2015*, 1.

Mitrović, Đ. (2020). Measuring the efficiency of digital convergence. *Economics Letters*, *188*, 108982.

Myovella, G., Karacuka, M., & Haucap, J. (2020). Digitalization and economic growth: A comparative analysis of Sub-Saharan Africa and OECD economies. Telecommunications Policy, 44(2), 101856.

National Statistics Office of Georgia (2021). Database of Information and Communication Technology (ICT).

Park, S. R., Choi, D. Y., & Hong, P. (2015). Club convergence and factors of digital divide across countries. *Technological Forecasting and Social Change*, *96*, 92-100.

Qiang, C. Z. W., Rossotto, C. M., & Kimura, K. (2009). Economic impacts of broadband. *Information and communications for development 2009: Extending reach and increasing impact*, *3*, 35-50.

Ragnedda, M., & Kreitem, H. (2018). The three levels of digital divide in East EU countries. World of Media. *Journal of Russian Media and Journalism Studies*, *1*(4), 5-26.

Selwyn, N., & Facer, K. (2007). Beyond the digital divide. *In Proceedings Opening Education Reports*. Bristol: Futurelab. Retrieved October, 24.

Warschauer, M. (2003). Demystifying the digital divide. *Scientific American*, *289*(2), 42-47.

Zhghenti, T. & Chkareuli, V., (2021). Enhancing Online Business Sector: Digital Trust Formation Process. Marketing and Management of Innovations, 87-93.