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Effect of Commerce Digitalization on Economic Growth in GCC Countries

Rabeb Younes
Faculty of Economic Sciences and Management of Tunis, University of Tunis El Manar, Tunis, Tunisia
Email: Yh.rabeb@yahoo.fr

Abstract

The aim of this study is to investigate the digitalization level of the commerce sector and identify its effect on the economic growth in GCC countries measured by the non-oil GDP. Several studies have analyzed the impact of digitalization on economic development and few of them focused on commerce digitalization on GCC economies. This research work provides a descriptive analysis assessing commerce digitalization and employs a panel data regression model to investigate empirically its effect on GCC countries economic growth. The findings show that the continuous digital transformation of the commerce sector affects positively the economic growth of GCC countries.

Keywords: **E-commerce development, Digitalization, Economic growth, Economic diversification, Information and Communication Technology**

I. INTRODUCTION

The digitalization of commerce denotes the transformation of traditional business and trade activities through the adoption of digital technologies, mostly recognized via internet, big data, 5G, artificial intelligence. Amidst rapid technological advancements, the e-commerce sector has emerged as one of the prime beneficiaries of digital transformation. It underwent a rapid digital evolution in GCC countries driven by government initiatives, technological advancements, and varying business needs. This research work emphasizes a fundamental shift in business activity and highlights the crucial role of technology in reshaping the commerce sector and driving economic progress. This shift has revolutionized traditional operations, fostering greater efficiency, global market access, and playing a pivotal role in economic growth.

II. LITERATURE REVIEW

Crossing the era of the fourth industry and starting the fifth industrial revolution based on technology and digitalization as the focus of progress, the global economy has changed features. Digitalization concerns almost all economic compartments; its extensive use has modified the traditional concept of economic growth and has introduced significant changes to business models [1]. These transformations have raised several inquiries about the real effect of digitalization on economic growth. The assumed impact of digital technologies adoption is to promote economic growth, reduce operating costs, maximize financial and banking profitability and improve efficiency and productivity [2]. Reference [3] conducting studies on a sample of North American SMEs, stated that digital transformation could generate the acquirement of new competences and skills, and they found that digital orientations affect positively the performance of

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innovation process and product, which can promote economic growth. Reference [4] has studied the digital transformation in South Korea and confirmed the significative contribution of digital industry in economic growth. They stated that digital industry accounts for 11.4% of GDP in 2020. This transformation is due to large investments in Information, Communication, Technology (ICT) achieved by the country during the 2000s. Reference [5] showed that the ICT industry positively affects Korean economic growth in short and long run. It reveals that an increase in ICT investment by 1% leads to a rise in GDP by 0.4% and confirmed that the ICT performed a key role in reviving economic activity after the currency crisis of the late 1990s. References [6] and [7] have analyzed the impact ICT on various development economy levels. The analysis has been performed in OECD countries, Middle East Countries; Sub-Saharan Africa countries and OECD countries. They found a positive effect of ICT on economic growth whatever the countries' development level. Reference [8] analyzed the relationship between economic growth and e-commerce and found that they were interconnected at the beginning of the Covid-19 pandemic in East Java in 2020. Reference [9] conducting a study on the impact of digital economy on the economic growth of countries along the “Belt and Road” in the post COVID-19 era, found that the digitalization affects positively the economic growth.

III. Repercussions of Commerce Digitalization

Aiming the diversification of their economies, the GCC countries are focusing on developing their digital infrastructure. The digital shift transforms industries from production modality to delivery services process. It increases productivity by modernizing production techniques and reduces transaction costs by the automation of transactions and inventory management. Businesses are, currently, based on data-driven decision making to apprehend customer behavior and optimize operations [10]. The boosting of e-commerce and the diversification of digital platforms allowed SMEs and customers to speedily reach greater and global markets, which stimulates the demand. It changes the consumers’ behavior directing them to further online shopping, food delivery and digital wallets. Moreover, digitalization has modified the features of the labour market introducing new jobs opportunities: rise of IT driven professions, logistics, cybersecurity which contributes to reduce the unemployment rate. Whereas, to benefit from these advantages GCC economies face various challenges. Businesses must invest in training programs that focus on building digital literacy, which allows employees to acquire skills and to be involved in more advanced practices in AI, data analytics, and automation tools that are becoming increasingly important in the trade sector. There is a real call to enhance the skills and proficiency of workers and human resources within the ICT industry. Also, the intensive use of digital tools leads to an increase of cyber threats which can affect important data like customer details and financial transactions, requiring the strengthening of cybersecurity. At the environmental level, governments face various challenges in the area of commerce digitalization. Despite of its contribution to the energy consumption reduction resulting from the substitution of physical store operations with online shopping, the development of e-commerce has generated some negative environmental repercussions. The change in consumer culture towards the online shopping and food ordering apps has led to a rise in packaging waste and in carbon emissions related to fast delivery demand. To counter these effects GCC are investing in green

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logistic like the use of electric vehicles in delivery operations and are deploying considerable efforts to achieve their sustainability goals in the framework of digital trade support planed in some national agenda especially in Saudi Arabia Vision 2030 and the Digital Economy Strategy of UAE.

IV. Results

Figure 1 illustrates the current and the forecasted growth of the GCC countries e-commerce markets with continuous and outstanding evolution. This growth is supported by government policies directed by economic diversification, the increasing consumer spending and the improved digital infrastructure among GCC countries. Recently Saudi Arabia, Qatar and UAE are among the world leaders in 5G deployment covering almost of all their territories, which further supports and develops mobile commerce.

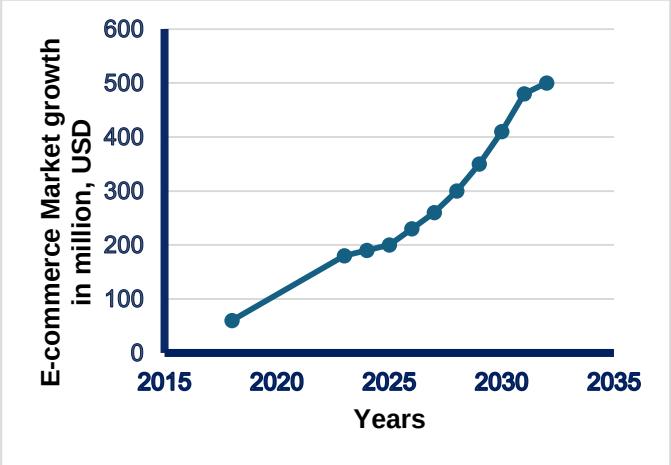

Figure 1. E-commerce Market Growth in GCC Countries (in million USD)

Table I. Actual and Projected Digital Economy Contribution to GDP (in %) in GCC Countries

Country	Actual Digital Economy Contribution to GDP (in %)	Projections of Digital Economy Contribution to GDP (in %)
Saudi Arabia	15.6% of GDP (2023)	16% by 2025
UAE	9.7% of GDP (2022)	19.4% by 2032
Qatar	4.5% of non-oil GDP (2017)	7.8% by 2030
Bahrain	8.6% of GDP (2022)	11.9% by 2027
Oman	2% of GDP (2021)	10% by 2040

Source. ABNA [11]

According to the data in table 1, the digital economy in Saudi Arabia contributed by 15.6% of GDP in 2023, making it the largest digital economy in the MENA region. The digital transformation marks a significant increase over the previous recent years. This shift is, specifically, visible in the commerce sector, where e-commerce transactions grew by 36% in 2023, allowing Saudi Arabia to be, also, the fastest-growing digital market in the MENA region [12]. As part of Vision 2030, Saudi Arabia aims to increase the digital activities contribution to GDP to 16% by the end of 2025 as shown in table 1 and over 19% by 2030. The digital economy in United Arab Emirates (UAE) accounted for 9.7% of GDP in 2022. This country is characterized by a more mature and stable market with an advanced level of digital tools adoption and plans to double the

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digital sector's share in the framework of the "UAE Digital Economy Strategy," within 10 years, reaching 19.4% of GDP by 2032. In Qatar, the digital economy participated by 4.5% of non-oil GDP in 2017. The country is achieving significant growth on digital technology adoption in economic landscape and has an ambitious plan to enhance the digital economy contribution, expected to reach 7.8% of non-oil GDP by 2030. Bahrain also follows a Digital Economy strategy under the Economic Recovery Plan aiming to build a robust digital infrastructure. The Information and Communication Technology (ICT), contributed by 8.6% to the Bahrain's GDP and it is estimated to attain 11.9% in 2027. With a bit lower level, the digital economy in Oman contributed by 2% of real GDP in 2021. The country is deploying significant efforts to enhance its digital technology adoption especially in the framework of The Government Digital Transformation Program (2021–2025) aiming to digitize about 80% of government services by the end of 2025 [11]. This allows the digital economy to raise its share on GDP, targeted to reach 10% of GDP by 2040 as indicated in table 1. GCC countries are undergoing a rapid digital transformation based on a robust digital infrastructure, allowing them to benefit from its advantages and stimulate their economic growth.

V. Empirical Analysis

A. Sample Selection and Data Sources

In the present study, the objective is to analyze the e-commerce sector on the economy of the Gulf Cooperation Council (GCC) countries over the period from 2010 to 2023. The choice of the started studied data is justified by the beginning of the Gulf countries' orientation towards diversifying their economies and the availability of data. From 2010 the investment in digital infrastructure and the digitalization of commerce started to accelerate in the region. Data is collected mostly from the World Bank database, GCC Statistical Center, Statista and the International Telecommunication Union database.

B. Model specification and variables

The effect of commerce digitalization on GDP is instigated via an empirical approach involving the Non-oil GDP growth as dependent variable and Digital Commerce, Consumption, Foreign Direct Investment (FDI), and Employment as explanatory variables. This approach is presented by the following equation:

$$\text{Non-oil GDP growth}_{it} = \alpha_0 + \alpha_1 \text{Digital Commerce}_{it} + \alpha_2 \text{Consumption}_{it} + \alpha_3 \text{FDI}_{it} + \alpha_4 \text{Internet Pen}_{it} + \alpha_5 \text{Employment}_{it} + \mu_i + \varepsilon_{it} \quad \text{(Eq. 1)}$$

Where $\text{Non-oil GDP growth}_{it}$ is the annual Non-oil GDP growth of country i in period t, Digital Commerce is a proxy assessing the commerce digitalization level, FDI is Foreign Direct Investment inflows as % of GDP, Internet Pen is the internet penetration measured by the percentage of population using internet, Employment is the rate of employment, Consumption is the total final consumption spending as percentage of GDP, μ_i is a country fixed effect and ε_{it} is an error term.

C. Methodology

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The empirical study is based on Pannel data analysis and started by performing a series of descriptive statistics (mean, median, standard deviation, etc.), then the variance-covariance matrix was extracted. Before moving to the estimation, the correlation test was carried out and joined with the multi-collinearity test in order to avoid the collinearity problem.

D. Main Results and discussion

TABLE II. ESTIMATION RESULTS OF THE DIGITALIZATION EFFECT ON ECONOMIC GROWTH OF GCC COUNTRIES

Variables	Coefficient (std error)
Digital Commerce	0.85* (0.28)
Consumption	0.42** (0.18)
FDI	0.093 (0.079)
InternetPen	0.12** (0.05)
Employment	0.47** (0.21)
Constant	-2.73 (1.14)

Note. * Statistical significance at the 10% level, ** Statistical significance at the 5% level and *** Statistical significance at the 1% level.

The obtained results resumed in table 2 show that digital commerce proxy affects positively and significantly the non-oil GDP growth, indicating that e-commerce can stimulate the economic growth which is in concordance with the findings of [13] and [14]. Internet penetration impacts also the dependent variable positively and significantly. It assists the digital transformation, which reinforces the commerce digitalization and enhances the economic diversification. Table 2 proves that employment and consumption have a positive and significative effect on non-oil GDP growth. These two components are traditional pillars of economic growth as confirmed by the theoretical economic foundation. However, the FDI demonstrates a positive but non-significant impact on the non-oil GDP growth suggesting that the FDI has not a direct and clear effect on economic growth in GCC countries. This effect can be explained by the FDI nature sector. When FDI is concentrated in the extractive sector, it has a limited impact on non-oil GDP. Moreover, if the country lacks skilled employees having the capacity to easily adopt technology, it cannot benefit from FDI advantages.

VI. CONCLUSION

Targeting economic diversification, GCC countries have deployed considerable efforts to create a robust digital infrastructure. Digitalization penetrates almost all economic spheres and has brought significant changes. New business models appear with the platform economy, fintech, digital marketplaces and online supply chains allowing Small and Medium Enterprises (SMEs) and customers to easily access regional and global markets. This shift contributes to making operations faster, more efficient, more transparent and with lower cost. Our findings show that commerce digitalization can increase productivity and efficiency, facilitate

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boarder market access, raise demand and promote job creation and innovation, boosting thus economic growth.

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