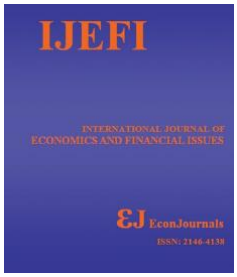

International Journal of Economics and Financial Issues

ISSN: 2146-4138

available at http: www.econjournals.com

International Journal of Economics and Financial Issues, 2026, 16(1), 9-16.

Digitalisation and Economic Growth: The Role of E-Commerce

Nasfi Fkili Wahiba*

Higher Institute of Management, University of Gabes, Tunisia. *Email: nasfiwahiba@yahoo.fr

Received: 19 September 2025 **Accepted:** 20 December 2025 **DOI:** https://doi.org/10.32479/ijefi.22299

ABSTRACT

This study aims to assess the effect of digitalisation on economic growth in ten countries representing the world's largest e-commerce markets over the period 1997-2021. Using quantitative data and EViews software for econometric analysis, We seek to determine the effect of intensive Internet use, investment and integration of ICT in business strategies on gross domestic product growth. We analyse the impact of other key control variables such as unemployment, inflation and trade openness to better understand the complex interactions between digitalisation, the macroeconomic environment and economic performance. Our study has shown that e-commerce and digitalisation play an increasingly important role in stimulating economic growth. They enable businesses to expand their customer base, innovate more quickly and optimise their processes. They promote the emergence of new economic models and create new job opportunities, particularly in the technology and logistics sectors. These digital transformations are therefore powerful drivers of economic growth.

Keywords: Digitalisation, Economic Growth, E-commerce
JEL Classifications: O31, O33, O40, M21

1. INTRODUCTION

Digitalisation and the rise of e-commerce are now key drivers of global economic development. Widespread access to the internet, the rapid spread of information and communication technologies (ICT), and the integration of digital tools into production and commercial processes are profoundly transforming the way businesses produce, sell, and interact with consumers. In this context, e-commerce is emerging as a key driver of growth, capable of stimulating consumption, increasing productivity and generating new employment opportunities, particularly for individuals with advanced digital skills.

Beyond its effects on businesses and consumers, digitalisation is also influencing national and international economic structures. It facilitates the creation of more efficient global value chains, reduces transaction costs and promotes the emergence of new business models, such as digital platforms and high value-added online services. Furthermore, the rise of e-commerce enables countries to diversify their sources of income and increase their competitiveness in global markets, particularly when digital innovation and digital infrastructure are well developed.

Since the 1970s, many countries have prioritised technological development at the expense of social progress. For the first time in human history, we are seeing the emergence of a completely new technical device: the Internet, capable of removing us from all direct interaction and transcending physical and geographical boundaries.

Porter and Millar (1985) emphasise that information and communication technologies (ICT) are not only a tool for coordinating the various stages of the production and distribution chain, but also a lever for developing competitive advantages and devising new strategies.

In the media sector, Bugard (2014) observes that the ongoing and accelerating process of digitalisation is profoundly influencing

everyday practices, to the point where it is now undeniable that a genuine digital revolution is underway. This evolution is accompanied by the increasing digitalisation of the media, which is broadening the scope of digital media agencies. The role and objectives of these agencies are no longer limited to purchasing advertising space to reach a target audience; they are now called upon to design cross-functional media strategies and activate the most relevant levers to optimise conversion rates. In this context, campaign performance indicators are taking on major strategic importance.

Gray and Rumpe (2015) highlighted several specific themes relating to modelling research, focusing in particular on the emerging trend of digitalisation. This refers to the integration of various technologies into all aspects of daily life that can be dematerialised. Some of the most significant examples include smart homes, online health services, connected mobility and smart cities. The impact of digitisation, which is now widespread, is evident both in interpersonal relationships – transformed and amplified by social networks and related services – and in interactions between citizens and public services, particularly through e-government systems.

The authors confirm that many areas will benefit considerably from digitisation. Cultural artefacts and assets can be digitised, preserved and made accessible to the general public, even when they have been stolen, destroyed or are simply no longer directly accessible. Similarly, scientists can now digitise their experiments, making it easier to reproduce the experimental setup and verify the results.

Furthermore, Brennen and Daniel (2016) define digitisation as the physical process of converting analogue information flows into digital data. They also specify that this concept refers to the reconfiguration of many areas of social life around communication infrastructures and digital media.

On the financial front, Markus et al. (2019) point out that the ongoing digital revolution, combined with the rise of large technology companies, is paving the way for a radical break with the traditional model of monetary exchange. The structure and underlying technologies of digital networks may lead to an unbundling of the distinct functions of money, thereby promoting increased competition between specialised currencies. At the same time, the integration of digital currencies into large platform ecosystems may lead to monetary bundling, where payment services are combined with a set of data-related services. This phenomenon tends to encourage differentiation, while limiting interoperability between platforms. In this context, the convertibility of monetary instruments and the interoperability of platforms play a decisive role in reducing barriers to trade and stimulating competition.

Furthermore, Edelmann et al. (2019) argue that digital transformation should be understood as a comprehensive organisational process, rather than simply making forms available online or converting public services from analogue to digital. This process is heavily dependent on external factors, particularly the adoption of new technologies by stakeholders in public administrations. Although experts can anticipate the potential outcomes of this transformation, they nevertheless struggle to define in concrete terms what a fully digitised public administration would look like and how it would function.

Furthermore, other studies devoted to the public sector, such as those by Aspelund and Bjerke-Busch (2021), emphasise that the last decade has seen the emergence of ubiquitous and inexpensive digital tools capable of effectively meeting administrative and commercial needs.

As a result, the authors note an acceleration in organisational change, with organisations adopting new digital technologies in order to improve their performance. Although the productivity gains associated with digitisation are comparable in the public and private sectors, public organisations are more reluctant to integrate these technologies. This observation raises the question of whether there are idiosyncratic barriers specific to the public sector that may be hindering digital transformation. The authors examine these barriers through a study of the digital transformation of the Norwegian judicial administration, drawing on both an institutional perspective and change management theory.

On an industrial level, Christoph and Jürgen (2021) show that digitalisation is one of the main drivers of value chain transformation. Companies are therefore intensively engaged in planning their digital transition. However, numerous studies reveal that small and medium-sized enterprises (SMEs) in particular are still encountering difficulties in implementing this transformation. One of the reasons frequently cited is that, given the diversity of approaches available, there is often only a vague understanding of which solutions are truly suited to their specific context. This uncertainty complicates the development of a comprehensive plan in the form of a genuine strategy. Companies therefore need support to ensure their long-term competitiveness. This chapter takes this perspective and proposes a methodology designed to help SMEs in particular to plan their digital transformation effectively.

According to David et al. (2021), the circular business model has recently emerged as an emerging field of research in the literature on the circular economy, inviting academics and practitioners in strategic management and innovation to analyse the transition of businesses from a linear to a circular model. This transition is based on a set of managerial practices aimed at reducing waste, reusing resources and optimising product lifespans.

Among these practices, the adoption of digital technologies plays a central role. For example, digital platforms facilitate real-time tracking of material flows, while artificial intelligence tools optimise resource management and predictive equipment maintenance. Similarly, blockchain technologies ensure traceability and transparency throughout the circular value chain.

However, the precise role played by these digital technologies — both in terms of the functionalities they offer and the circular value creation objectives they enable — remains a largely unexplored topic. A better understanding of these mechanisms is essential to

guide companies in the efficient integration of digital tools into their circular strategy.

Parviainen et al. (2022) identify digitalisation as a major trend that is reshaping both society and businesses. Digitisation is driving organisational transformations linked to the adoption of digital technologies, both within companies and in their operating environments. These authors propose an initial version of a digital transformation model, based on a synthesis of industrial case studies, providing an initial framework for systematically addressing this change.

Digital technology is a major source of productivity and innovation, and is therefore an essential driver of competitiveness and growth for businesses. This potential is expressed in particular through the redefinition of their business models, the strategic reallocation of their resources and the reconfiguration of their customer relationships. The digitalisation process involves integrating new digital technologies into all organisational activities with the aim of optimising performance.

Furthermore, digital transformation accelerates economic development, promotes growth, brings people closer together and enables more efficient use of available resources.

2. IMPACT OF DIGITALISATION ON GROWTH

Several empirical studies have highlighted the role of information and communication technologies (ICT) and telecommunications infrastructure in economic growth dynamics.

Anusua and Sumit (2006) show that investment in telecommunications is a strategic lever for improving productivity and stimulating growth. Using a sample of 22 OECD member countries and a dynamic panel data estimation method, they establish a positive and statistically significant correlation between the development of telecommunications infrastructure and economic growth, after controlling for various other determinants.

The fixed effects specification adopted incorporates country-specific heterogeneities into the aggregate production functions. Empirical results reveal a positive and statistically significant correlation between telecommunications infrastructure and economic growth, even after controlling for several other determinants.

Shui and Lam (2008) examine the role of telecommunications development in economic growth dynamics based on a sample covering 105 countries. The analysis uses a dynamic panel data model to assess the causal relationship between telecommunications development and economic growth, distinguishing between geographical regions and income levels over the period 1980-2006. The results highlight a bidirectional causal relationship between telecommunications development and economic growth for European and high-income countries. In contrast, for other regions and lower-income countries, the observed causality is generally unidirectional, moving from economic growth to telecommunications development.

Nasab and Aghaei (2009) point out that, according to economic growth theories, investment in information and communication technologies (ICT) is a key driver of growth. However, empirical studies on this issue have produced mixed results, depending on the methodologies used and the geographical contexts studied. In order to shed new light on the issue, the authors use the generalised method of moments in a dynamic approach based on panel data, applied to the economies of OPEC member countries over the period 1990-2007. The estimates obtained highlight a significant effect of ICT investment on economic growth in these countries. The authors conclude that, in order to stimulate growth, OPEC member countries should adopt specific policies that promote investment in ICT.

Czernich et al. (2009) analyse the impact of broadband infrastructure — enabling high-speed Internet access — on economic growth in a panel of OECD countries over the period 1996-2007. Their approach is based on an instrumental variable model, the first stage of which is non-linear and uses a logistic diffusion model in which pre-existing voice telephony and cable television networks serve as predictors of maximum broadband penetration. The results indicate that a 10 percentage point increase in broadband penetration increases annual GDP per capita growth by 0.9-1.5 percentage points. These conclusions remain robust after taking into account fixed country and year effects, as well as after controlling for second-stage linear effects of the instruments. The authors also verify that the instruments selected accurately predict broadband penetration, without correlation with the spread of contemporary technologies such as mobile telephony or computers.

Dimelis and Papaioannou (2010) examine the impact of foreign direct investment (FDI) and information and communication technologies (ICT) on productivity growth. Their analysis is based on panel data covering 42 developed and developing countries over the period 1993-2001. The results from growth accounting reveal that the contribution of ICT to growth was significantly high in both groups of countries, while that of FDI was relatively limited. Econometric estimates show a positive and statistically significant effect of ICT in all the countries studied, with a more pronounced impact in developing economies. With regard to FDI, the effect is positive and significant for developed countries, but positive without statistical significance for developing countries.

Yousefi (2011) analyses the extent to which information and communication technologies (ICT) contribute to economic growth. Within the framework of the traditional growth model, the author estimates the respective contributions of labour, ICT and non-ICT capital to economic growth in developed and developing countries. The estimate, based on cross-country time series covering 62 countries over the period 2000-2006, shows that the impact of ICT on growth varies according to countries' income levels. The results indicate that ICT plays a decisive role in the growth of high- and upper-middle-income countries, but has no significant effect on that of lower-middle-income countries.

Najarzadeh et al. (2014) highlight the central role of the Internet in contemporary economic activities and transactions. Using a dynamic approach based on panel data from 108 countries over the period 1995-2010, they examine the impact of Internet use on labour productivity. The results show a positive and statistically significant effect: all other factors being equal, a 1% increase in the number of Internet users increases GDP per person employed by between $8.16 and $14.6. In addition, other variables such as education expenditure as a percentage of GNI, per capita health expenditure, trade openness and gross capital formation as a percentage of GDP also have positive and significant effects on labour productivity.

Bello (2019) analyses the perceived impact of digitalisation on the performance of small and medium-sized enterprises (SMEs) in Cameroon, based on a sample of 43 companies with varying characteristics. The study focuses on the relationship between digitalisation and performance, considering three main levers: the digital tools used, the budget allocated to digital marketing, and the objectives pursued through digitalisation. The analysis, based on multiple regression, highlights a positive and statistically significant effect of digitalisation on SME performance. The results thus underscore the importance of consistency between the objectives pursued, the digital tools used and the financial resources allocated to digital transformation.

Furthermore, Wei et al. (2021) analyse the influence of the digital economy on high-quality economic development in China, using panel data covering 30 cities over the period 2015-2019. In order to examine the current dynamics of high-quality economic development, the authors focus on three dimensions: digital infrastructure, digital industry and digital integration, using panel data models. The empirical results highlight a positive and significant effect of the digital economy on economic development.

Thus, the results obtained from three estimation methods — FGLS (feasible generalised least squares), OLS (ordinary least squares) and GEE (generalised estimating equations) — were used to test endogeneity, assess the coefficients of influence of the digital economy index on total factor productivity, and analyse the regression results. The results indicate that the development of the digital economy has a consistently substantial positive effect on improving total factor productivity. Furthermore, the overall digital economy index, as well as its sub-indices for digital infrastructure, digital industry and digital integration, all have a significant positive impact on total factor productivity at the regional level, confirming the strategic role of the digital economy in promoting high-quality economic development.

Furthermore, Shuaitao and Qiubi (2021) examine the digital economy development index in China over the period 2011-2018, based on data from 173 cities. Their analysis focuses on three dimensions: Internet development, digital culture and improved industrial efficiency. To quantitatively assess the impact of digital economy development on urban economic growth, the authors use several methodological approaches, including the instrumental variables method, the double difference method, the intermediate effect model and the spatial econometric model. The empirical results reveal that the development of the digital economy has a positive effect on urban economic growth, while presenting a heterogeneity of impact across cities.

Urban employment appears to be the main 'effect mechanism' linking the digital economy to urban economic growth. Furthermore, while the direct effect of the digital economy is positive and greater than its spillover effect, the total effect also remains positive. These findings contribute to enriching methods for measuring the development of the digital economy in an urban context and open up new perspectives for analysing the mechanisms at work in its relationship with urban economic growth.

In a different national context, Fikry and El Ouazzani (2022) analyse the impact of digitalisation on economic growth in Morocco using time series covering the period 2012-2020. Their empirical approach combines descriptive and econometric analyses, based on a simplified Cobb-Douglas model integrated into an endogenous growth framework. This model links gross domestic product (GDP), gross fixed capital formation, the labour force and a digitalisation index measuring technological progress. The results show a positive correlation between the digitalisation index and GDP growth, with the overall effect of ICTs resulting from their cumulative adoption, assimilation and integration into the productive and social fabric.

Finally, Ben Youssef et al. (2022) examine the relationship between ICT, trade openness and economic growth in Tunisia over the period 1995-2018, using data for 14 economic sectors. The study is based on three dimensions: trade openness, the ICT diffusion index and investment. Using a cross-sectional augmented autoregressive distributed lag model and the Dumitrescu and Hurlin (Granger) causality test, the authors show that both ICT use and trade openness have a positive effect on economic growth.

Overall, this research confirms that digitalisation and the digital economy, whether viewed at national or regional level, are significant drivers of productivity, competitiveness and growth, provided that they are accompanied by the effective integration of technologies into economic and social structures.

The authors confirm the existence of a bidirectional causal relationship between ICT and value added, which translates into a positive impact of ICT on economic growth. In the long term, value added is positively and significantly correlated with trade openness. By generating natural comparative advantages, ICT also has a causal effect on trade openness, thereby contributing to accelerated multifactor productivity growth. Furthermore, they positively influence investment, promoting the creation of new capital goods, significant improvements to existing products and the development of new services. These empirical results suggest that the use of ICT has a lasting effect on value added and, consequently, on economic growth in Tunisia.

3. THE IMPORTANCE OF E-COMMERCE

E-commerce refers to all commercial transactions carried out electronically, particularly via the Internet and digital technologies.

Its rapid development has transformed traditional commercial practices, facilitating access to markets, reducing transaction costs and creating new opportunities for businesses and consumers. Today, it is a strategic lever for economic growth, promoting innovation, market expansion and improved productivity.

According to Shan and Pring (2007), the rapid development of computer networks and information and communication technologies has made e-commerce both a focal point of economic activity and a major structural trend. Using GDP accounting based on the expenditure method, their study analyses and highlights the mechanism by which e-commerce influences national economic growth. Using an econometric model and the latest data on the development of e-commerce in China, they empirically demonstrate that e-commerce helps to stimulate economic growth. Finally, the authors make several recommendations aimed at optimising the development of e-commerce in order to maximise its impact on economic growth.

Lili and Yan (2014) analyse the determining factors of e-commerce development and the mechanism by which it influences national economic growth. Based on China's economic situation and regression analysis, they identify five major e-commerce factors that have a positive and significant correlation with gross domestic product, including the number of Internet users, the number of e-commerce companies, and the growth in the number of online shoppers. The results confirm that the development of e-commerce stimulates economic growth. To strengthen this role, the authors recommend that governments, businesses and consumers pay greater attention to e-commerce, increase investment in infrastructure, develop training for skilled professionals, further encourage online shopping, improve the quality of digital services and, in this way, promote economic growth.

Miltiades (2009) uses econometric analysis to demonstrate that e-commerce has a positive impact on economic growth at the country level. E-commerce stimulates sales, which improves business performance and ultimately promotes economic growth. The study is based on panel data from Eurostat covering Western European countries over the period 2003-2006.

Ramanathan et al. (2012) examined the effects of e-commerce on marketing and operational functions, as well as how these effects influence the performance of Taiwanese SMEs. They also examined the moderating role of SME size and e-commerce experience on the relationship between impact and performance. Drawing on the resource-based view of the firm, they propose a theoretical framework for understanding how the adoption of e-commerce translates into performance gains. The study is based on a survey that yielded 110 usable responses from Taiwanese SMEs. The authors first grouped the variables into marketing and operational effects using confirmatory factor analysis, before assessing their influence on performance through regression analyses.

Nuray (2011) studied the impact of e-commerce on international trade and employment. According to his findings, e-commerce generates economic benefits for all countries. In the short term, these gains tend to be concentrated in developed countries, while developing countries would benefit more in the long term. The volume of international trade is therefore expected to increase thanks to e-commerce, and countries open to imports from high-income economies could take advantage of knowledge externalities. Furthermore, e-commerce is likely to create new jobs while rendering some obsolete.

Recent research confirms the growing impact of e-commerce on economic growth and business productivity. Benjouid et al. (2024) presents a bibliometric study covering the period 2000-2023, highlighting research trends on e-commerce and its influence on business financial performance, logistics cost reduction, and implications for sustainability and the legal framework. This study emphasises that e-commerce has become a major strategic lever for modern economies.

Li et al. (2024) examines the effects of e-commerce development at the county level, analysing its impact on carbon emissions and GDP. The results show that e-commerce contributes not only to local economic growth but also to reducing carbon emissions, illustrating the capacity of e-commerce to promote sustainable growth. Complementarily, Bocean (2025) explores how e-commerce can improve business productivity and competitiveness while pointing out the potential risks of market polarisation and marginalisation of small businesses, highlighting the importance of appropriate regulation to ensure positive effects on sustainable economic development.

Toska and Fetai (2023) focus on the Western Balkan countries, using panel data analysis to assess the impact of e-commerce on regional economic growth. Their study shows that the adoption of e-commerce is a key factor in stimulating growth, but that its effects may vary depending on the level of economic development and local infrastructure. Finally, Li (2023) examines the digital economy and e-commerce in the context of high-quality economic development. The author highlights the role of industrial digitalisation and consumption transformation, while noting that the impacts may differ across regions and sectors.

Overall, these recent studies confirm that e-commerce is a strategic lever for economic growth, productivity and sustainability, while highlighting the need for adequate infrastructure, appropriate regulation and effective integration into the productive and social fabric in order to maximise its effects.

4. METHODOLOGY AND RESULTS

In this paper, we analyse the impact of digitalisation on economic growth. The sample consists of ten countries representing the world's major e-commerce markets: China, the United States, the United Kingdom, Japan, Germany, France, South Korea, Canada, Russia and Brazil. The analysis covers the period from 1997 to 2021.

In the context of this study, the dependent variable selected corresponds to economic growth, which will be referred to by the abbreviation GRW.

The endogenous variables used are as follows:

INV: Investment as a percentage of GDP, UNM Unemployment Rate, INF Inflation Rate, ICT Information and Communication Technology (Expresses the number of people who have access to the internet), ECM The share of e-commerce in total retail sales, OPE Economic Openness Rate.

In order to assess the impact of e-commerce on economic growth, we will use econometric analysis with EViews software. Our study sample consists of ten countries representing the world's largest e-commerce markets.

We propose to estimate the following model:

$$GRW_{it} = \propto_{it} + \propto_1 INV_{it} + \propto_2 UNM_{it} + \propto_3 INF_{it} + \propto_4 ICT_{it} + \propto_5 ECM_{it} + \propto_6 OPE_{it} + \sum_{it}$$

According to the results of the Hausman test, the probability obtained is equal to 0, which leads to the rejection of the random effects model hypothesis. Consequently, the estimation will be carried out using a fixed effects model.

Similarly, the Pesaran CD test shows a probability of 0.79, which indicates that the errors are not autocorrelated. Estimation of the model using Eviews software yielded the following results in Table 1.

The analysis reveals that the coefficient associated with the variable "investment" is statistically significant and positive. In the same context of empirical studies on China, the work of Chen and Zhu (2008) shows that domestic investment has a co-integrated, two-way relationship with GDP growth, with positive long-term elasticity according to provincial data prior to 2008.

Furthermore, a study conducted by Landowska et al. (2005) covers advanced countries (G7) and emerging markets (including South Korea, Brazil, Russia and Canada), combining econometric panel regressions and Random Forest machine learning models to analyse the dynamics between GDP growth and investment. It shows that investment is a robust predictor of growth, particularly in developed economies, where the link is more stable.

The estimation results indicate that the coefficient associated with the share of e-commerce in total retail sales is positive and statistically significant. This finding is consistent with several previous studies, notably those by Sixum (2013), which highlight the existence of a positive and statistically significant effect of e-commerce on economic growth. This study highlights that e-commerce is a driver of annual GDP growth through consumption. Its growth has promoted the expansion of related sectors, such as logistics, and generated new employment opportunities in industries that use information technology and the Internet, thereby helping to boost domestic demand. Furthermore, e-commerce offers consumers a wider variety of goods and services, which encourages online shopping and increases consumer spending. Thanks to its efficiency, convenience and ability to transcend time and space constraints, it appeals to both businesses and consumers, facilitating their interaction and promoting economic development.

Table 1: Model estimation results

Variables	Coefficient	Std. Error	t-Statistic	Prob
INV	0.170766	0.064744	2.637561	0.0090
UNM	−0.199451	0.085339	−2.337175	0.0204
INF	−0.040346	0.015324	−2.632785	0.0091
ICT	0.055651	0.027088	2.054447	0.0112
ECM	0.215435	0.090002	2.393666	0.0076
OPE	−0.132581	0.074655	−1.775907	0.0773
R–squared	0.790802			
Adjusted R–squared	0.749804			

In addition, the rise of e-commerce has stimulated consumption by increasing the number of Internet users and online shoppers, while also leading to a significant expansion in the scale of Internet sales. Furthermore, online advertising reflects an expected positive trend in investment, while the increase in the number of domains and websites reflects the rise in transactions, both in terms of purchases and sales.

Our study shows that the ICT variable is positive and significant. These findings corroborate the analysis by Arora and Rahman (2017), who showed that ICT is a real lever for performance and competitive advantage, not only as a factor for coordination, but also as a catalyst for strategic innovation and competitive superiority. Thus, these authors showed that, in the chemical products sector in India, superior IT capacity is associated with better profitability, high margins, and higher stock market valuation, with sustainable performance.

Another study conducted in Spain by Barba-Sánchez and al (2018) involving 871 SMEs highlights that the intensity of ICT use is positively correlated with business performance, especially in highly competitive environments.

Similarly, Boubakary and Moussa (2017) emphasise that, in the context of economic globalisation, ICTs, and more specifically the use of Internet, Intranet and Web services, are remarkably versatile tools that enable small and medium-sized enterprises to compete efficiently and profitably in larger and more dynamic markets.

Choi and Yi (2009) highlighted the positive and significant role of Internet use in economic growth, based on data covering 208 countries over a ten-year period (1991–2000). Meijers (2014) examined the nature of this impact, seeking to determine whether the Internet has a direct influence on economic growth or whether it acts indirectly through trade. Using data from 162 countries between 1990 and 2008, his results indicate that Internet use has no direct effect on GDP growth, but that it has a positive and significant indirect effect via trade.

Similarly, Czernich et al. (2009) studied and analysed the effects of fixed broadband subscriptions on economic growth. Their work highlighted a positive and significant impact of ICT on GDP growth. More specifically, the study examines the influence of fixed broadband infrastructure on economic growth in 25 OECD member

countries over the period 1996-2007. The results show that a 10% increase in broadband penetration is associated with an increase in GDP of between 0.9% and 1.5%. In our own analysis, a 1% increase in the proportion of individuals using the Internet is correlated with a 0.040346% increase in annual gross domestic product growth.

As part of our analysis, we included other control variables, namely trade openness, unemployment rate and inflation rate. The results indicate that inflation and unemployment have a negative impact on economic growth, while trade openness also has a negative effect, although this is not statistically significant. More specifically, a 1% increase in the inflation rate leads to a 0.040346% decrease in the growth rate, while a 1% increase in the unemployment rate results in a 0.199451% decrease in growth.

These results are consistent with the work of Gautier and Montornès (2024) and Apergis and Apergis (2025), which show that high inflation erodes purchasing power, increases macroeconomic uncertainty and discourages productive investment, thereby slowing growth momentum. Similarly, the negative link between unemployment and growth is well documented in the literature and confirmed by recent analyses such as those by Ball et al. (2022), which highlight the underutilisation of human resources and its direct impact on potential output and aggregate demand.

With regard to trade liberalisation, although its effect is negative and insignificant in our model, several factors may explain this result: structural imbalances in the trade balance (Rodrik, 2018), excessive dependence on imports, or weak competitiveness of domestic exports. This finding is consistent with the observations of Dollar and Kraay (2004), as well as those of Gygly et al. (2019), who emphasise that the benefits of trade liberalisation depend heavily on a country's ability to implement appropriate accompanying policies, such as investment in innovation, sectoral diversification and the upgrading of exported products.

5. CONCLUSION

This research highlights the positive impact of digitalisation on economic growth through e-commerce in the ten largest global markets. Our findings show that intensive use of the internet and investment in digital technologies promote the expansion of e-commerce, stimulate consumption and generate new employment opportunities, particularly for individuals with relevant academic qualifications. Furthermore, analysis of control variables indicates that unemployment and inflation slow growth, while trade openness can have a positive effect, provided that adequate support policies are in place.

These findings confirm the strategic importance of digitalisation as a driver of competitiveness and economic development. They also suggest that public policies should encourage Internet access, support digital innovation and strengthen skills training in order to maximise the benefits of e-commerce and digital transformation.

Finally, this study paves the way for future research on the differentiated impact of digitalisation across economic sectors, as well as on the role of digital infrastructure and public policy in reducing inequalities and promoting inclusive growth.

REFERENCES

Anusua, D., Sumit, A. (2006), Telecommunicationn and economic growth: A panel data approach. Applied Economics, 36, 1649-1654.

Apergis, N., Apergis, E. (2025), Uncertainty and inflation: The role of COVID-19 stabilisation policies-Evidence from OECD countries. International Economics and Economic Policy, 22(1), 1-9.

Arora, B., Rahman. Z. (2017), Information technology capability as competitive advantage in emerging markets: Evidence from India. International Journal of Emerging Markets, 12(3), 447-463.

Aspelund, A., Bjerke-Busch, L.S. (2021), Identify barries to digital transformation in the public sector. In book: Digitalization. Berlin: Springer, p277-290.

Ball, L., Leigh, D., Mishra, P. (2022), Understanding U.S. Inflation During the COVID Era. NBER; [Working Paper No. 30613].

Barba-Sánchez, V., Calderón-Milán. M.J., Atienza-Sahuquillo, C. (2018), A study of the value of ICT in improving corporate performance: A corporate competitiveness view. Technological and Economic Development of Economy, 24(4), 1388-1407.

Bello. (2019), Le Digital Dans la Formation de la Performance des Petites et Moyennes Entreprises des Pays en Voie de Développement. Association Conférence Internationale de Management Stratégiques (AIMS). p1-32.

Ben Youssef, A., Dahmani, M., Mabrouki, M. (2022), ICT, trade opennes and economic growth in Tunisia: Wat going wrong? Econ Change Restruct, 55, 2317-2336.

Benjouid, Z., Mountassir, E.L., Gherabi, Y., Aboulhouda, Z. (2024), The impact of E-commerce on the economy: A bibliometric study. African Scientific Journal, 22(3), 208-226.

Bocean, C.G. (2025), The impact of E-commerce on sustainable development. Systems, 13,560, 1-25.

Boubakary, B., Moussa, M. (2017), Les facteurs de contingences de l'adoption des TIC par les PME tchadiennes. Information Systems Management and Innovation, 1(2), 28-46.

Brennen, J., Daniel, K. (2016), Numérisation. United States: Wiley, Online Library.

Bugard, J. (2014), Digitalisation ou révolution De l'écosystème média. Revue Française du Marketing, 249, 83-84.

Chen, J., Zhu, A. (2008), The Relationship between Housing Investment and Economic Growth in China: A Panel Analysis using Quarterly Provincial Data; [Working Paper Series]; 2008. p. 17.

Choi, C., Yi, M.H. (2009), The effect of the internet on economic growth evidence from cross-country panel data. Economics Letters, 105, 1, 39-41.

Christoph, P., Jürgen, G. (2021), Developing strategies transformation in SMEs with maturity models. Management for Professionals, 104, 103-124.

Czernich, N., Falck, O., Kretshmer, T., Woessmann, L. (2009), Broadband Infrastructure and Economic Growth; [Working Paper 2861].

David, C.H., Mattao, O., Andrea, U. (2021), The role of digital technologiess in business model transition toward circular economy in the building industry. Digitalization, 3071, 39-58.

Dimelis, S.P., Papaioannou, S.K. (2010), FDI and ICT effects on productivity growth: A comparative analysis of developing and developed countries. European Journal of Development Research, 22, 79-96.

Dollar, D., Kraay, A. (2004), Trade, growth, and poverty. The Economic Journal, 114, 22-49.

Edelmann, N., Haug, N., Mergel, I. (2019), Defining digital transformation: Results from expert interviews. Govermment Information

Quarterly, 36(4), 331-347.
Fikry, R., El Ouazzani, S.Y.Y. (2022), Essai de modélisation de l'impact de la digitalisation sur la croissance économique au Maroc à travers une fonction Cobb Douglas simple. Revue Française d'Economie et de Gestion, 3(5), 82-92.
Gautier, E., Montornès, J. (2024), Les effets hétérogènes de l'inflation en France et dans la zone euro. Revue d'Economie Financière, 153, 193-211.
Gray, J., Rumpe, B. (2015), Models for digitalization. Software and Systems Model, 14(4), 1319-1320
Gygly, S., Potrafke, N., Sturm, J., Haelg, F. (2019), The KOF globalisation index. Review of International Organizations, 14(2), 543-574.
Landowska, A., Kłopotek, R., Filip, D., Raczkowski, K. (2005), GDP-GFCF Dynamics Across Global Economies: A Comparative Study of Panel Regressions and Random Forest. United States: Cornell University.
Li, B., LV, J., Zhan, W., Liu, D., Shi, X., Li, X. (2024), How does e-commerce development affect county-level CO_2 emissions: New evidence from 2,142 counties in China. Journal of Environmental Management, 371, 1-8.
Li, X. (2023), The impact of digital economy on high-quality economic development. Research based on the consumption expansion. Journal PLoS One, 18(12), e0292925.
Lili, Q., Yan, C. (2014), The impact of e-commerce on China's economic. Advances in Economics Management and Political Sciences, 37(1), 211-218.
Markus, K.B., Harold, J., Jean-Pierre, L. (2019), The Digitalization of Money. National Bureau Of Economic Research (NBER), p2-32.
Meijers, H. (2014), Does the internet generate economic growth international trade or both? International Economics and Economic Policy, 11, 173-163.
Miltiades, N.G. (2009), E-commerce has a positive impact on economic growth: A panel data analysis for western Europe. Social Science Research Network. Available at SSRN: http://ssrn.com/abstract=1484687 or http://dx.doi.org/10.2139/ssrn.1484687
Najarzadeh, R., Rahimzadeh, F., Reed M. (2014), Does the internet increase labor prodictivity. Journal of Policy Modeling, 36(6), 986-993.
Nasab, E.H., Aghaei, M. (2009), The effect of ICT on economic growth: Further evidence. International Bulletin of Business Administration, 5, 46-56.
Nuray, T. (2011), The impact of e-commerce on international trade and employment. Procedia Social and Behavioral Sciences, 24, 745-753.
Parviainen, P., Tihinen, M., Kääriäinen, J., Teppola, S. (2022), Tackling the digitalization challenge: How to benefit from digitalization in practice. International Journal of Information Systems and Project Management, 5, 63-77.
Porter, M.E., Millar, V.E. (1985), How information gives you competitive advantage. Harvard Business Review, 63, 149-160.
Ramanathan, R., Ramanathan, U., Hsiao, H. (2012), The impact of e-commerce on Taiwanese SMES: Marketing and operations effects. International Journal of Production Economics, 140, 934-943.
Rodrik, D. (2018), Populism and the economics of globalization. Journal of International Business Policy, 1, 12-33.
Shan, L., Pring, H. (2007), The Impact and Inspiration of E-Commerce on China's Economy. Geneva: Economy Forum, 2007.
Shuaitao, J., Qiubi, S. (2021), Digital economic development and its impact in economic Growth in China, Research based on a sustainability perspective. Sustainability, 13(18), 1-18.
Shui, A., Lam, P.L. (2008), Causal relationship between telecommunications and economic growth: A study of 105 Contries. Regional Studies, 42(5), 705-718.
Sixum, L. (2013), An Empirical Study on E-Commerce'S Effects on Economic Growth. International Conference Technology and Management Science, p81-84.
Toska, A., Fetai, B. (2023), The impact of e-commerce on the economic growth of the Western balkan Countries: A panel data analysis. International Journal of Sustainable Development and Planning, 18(3), 935-941.
Wei, Z., Siqi, Z., Xiaoyu, W., Yuan, Y. (2021), Study on the effect of digital economy on quality economic development in China. Journal PLoS One, 16(9), e0257365.
Yousefi, A. (2011), The impact of information and communication technology on economic growth evidence from developed and developing Countries. Economics of Innovation and New Technology, 20(6), 581-596.