International Journal of Social Science, Management and Economics Research
Volume 3 Issue 4 July-August 2025
ISSN: 2583-9853| www.ijssmer.com

INFORMATION AND COMMUNICATION TECHNOLOGY, FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH IN THE MAGHREB COUNTRIES

Al Sadi Hamed
University of Sfax, Faculty of Economics and Management of Sfax,

Fathi Saed Bouayn
University of Sfax, Faculty of Economics and Management of Sfax, Tunisia,

&

Zouheir Abida
University of Sfax, Faculty of Economics and Management of Sfax, **Tunisia**

Received: 31/07/2025 Accepted: 08/08/2025 Published: 13/08/2025

DOI - https://doi.org/10.61421/IJSSMER.2025.3405

ABSTRACT

The present study aimed to examine the relationship between information and communication technology (ICT) diffusion, financial development and economic growth in the panel of 3 Maghreb countries, namely, Tunisia, Algeria and Morrocco from 2000 to 2023. Using the system GMM in a panel data analysis, we showed evidence of a positive association between financial development and economic growth. We also showed that ICT acted as a complement in the finance-growth relationship. The study recommends harmonizing public and private sector investments for a synergistic impact on ICT infrastructure and investing adequately in the financial system to promote economic growth in Maghreb countries. Economic policies would be approved to provide incentives and subsidies to guarantee affordable ICT services to disadvantaged peoples. In addition, training programs focused on improving digital literacy to enable all population groups to use digital platforms for financial services are recommended.

Keywords: Financial development, ICT diffusion, Economic growth, Panel data

1. INTRODUCTION

In fact, information and communication technology (ICT) have totally changed the way we work, learn, communicate and live. ICT are an umbrella term for a wide range of technologies that facilitate the sharing and transmission of information via the Internet, wireless networks, telephones and other digital channels. Practically every aspect of our civilisation has been deeply affected by these technologies. The ability of ICT to improve communication is one of their greatest benefits. The development of social media, e-mail, instant messaging and video conferencing has enabled people to communicate in real time with others anywhere in the world. These technologies have completely changed the way organizations operate by enabling effective cooperation and communication across regional borders. They have also improved the accessibility of information, allowing individuals to have a wealth of resources and knowledge at their fingertips. In addition, they have changed the way we work. With the rising popularity of remote working and telecommuting, employees can now work from anywhere with an internet connection. For many people, this has promoted work-life balance and amplified productivity. In addition, automation, data analytics, and other digital tools that enhance performance and simplify operations have amplified efficiency across a range of sectors thanks to ICT.

ICT has totally transformed the way teachers and students learn in the field of education. Education is now more available and engaging through virtual classrooms, educational apps, and online learning platforms. With the accessibility of online courses, assignments, and materials, students can now involve in self-directed and personalized learning. In this context, ICT is important to improve innovation, economic growth, and societal progress. With the way technology is developing, ICT can change the world in limitless ways. In order to shape the future of our universally interconnected world, it will be imperative that we fully use information and communication technologies (Pradhan et al. 2018).

ICT are indispensable for financial development because they make financial services more available, rise the efficiency of transactions and promote economic growth. ICTs enable mobile payment networks, online financial tools and digital banking services to develop, thereby promoting financial inclusion and availability for individuals and businesses. Financial markets are becoming more efficient, secure and transparent thanks to ICT advances such as internet trading platforms and blockchain technology. Developed financial inclusion, economic empowerment and the overall progress of the global economy are made possible by the synergy between ICT and financial development.

ICT enable the efficient flow of information and increased productivity in the financial services sector, which drive economic growth. Particularly in underdeveloped regions, the integration of ICT improves admission to financial services, reduces costs and streamlines transactions. Developed communication technologies aid financial markets make decisions, manage risks and innovate more quickly, which in turn improves economic growth. Digital financial services also promote financial inclusion, which enables individuals and businesses to contribute in the formal economy. By enhancing productivity, reducing barriers to entry and creating a more dynamic and inclusive financial ecosystem, the interaction among ICT and financial development enhances economic growth and ultimately propels overall economic expansion.

Financial development and ICT are crucial drivers of real GDP growth in the GCC countries. ICT adoption rises productivity, accelerates e-commerce, fosters creativity, and moves the economy away from its dependence on oil. Financial development inspires entrepreneurship and effectively channels investment through developed capital markets and banking institutions. According to Alshubiri et al. (2019), fintech and digital banking also promote financial inclusion by allowing individuals and small and medium-sized enterprises to access finance and participate in the formal economy. In the Maghreb countries, ICT and financial development accelerate economic growth, and facilitate the transition to knowledge-based countries.

Through the above, we asked the following questions: What are the dynamics and interrelationships among financial development and the diffusion of ICT in their relationship with each other and with the economic growth of the Maghreb countries?

This study will be of great assistance to the region's investment plans and policy choices. Promotion sustainable economic development, diversification, and global competitiveness in the Maghreb countries needs understanding the complex interlinkages between these elements. This paper can help create more resilient economies, Improvement in living standards, and more opportunities for residents by identifying how best to leverage financial infrastructure and advances in ICT. In addition, it can support regional cooperation and integration, developing innovation and economic stability across the Maghrebn countries.

This paper is ordered as follows. Section 2 covers the existing literature review. Section 3 presents the data and methodology employed. The empirical results are presented in Section 4. Finally, Section 5 draws conclusions and the main contributions of the study.

2. LITERATURE REVIEW

In theory, ICT diffusion and economic growth seem to be closely related. ICT is an external and uncontrollable force that advances from government action or business initiatives and manifests itself in productivity gains in real economic activity. Economic growth is a widely debated and constantly developing topic for economists.

In his revolutionary theory of economic development, Smith (1776) documented that increases in labour productivity is a direct result of technological progress in the economy. Although classical theory (Smith, 1776) highlighted specialization to rise productivity, neoclassical theories (Solow, 1956) postulated economic growth through increases in labour and productivity through technological advance. Therefore, by investing in human capital through nutrition, health care and education programs, productivity increases. Romer (1986), unlike the then prevailing neoclassical growth theories, proposed a growth model, which incorporated technological knowledge as an endogenous factor of development.

The ICT diffusion-led economic growth theory, frequently referred to as the supply-side hypothesis, suggests that ICT diffusion impacts economic growth in a unidirectional manner (Pradhan et al. 2018). This argument consists that improved investment in ICT infrastructure and the resulting better use of ICT improve employment opportunities and firm productivity, which contributes positively to economic growth. The development of ICT infrastructure generates new digital business, which stimulates economic growth.

Another strand of literature studies the association among ICT diffusion and financial system development. Two schools of thought explicate the causal link among ICT diffusion and financial development. The first school, the ICT-led financial development hypothesis, argues that ICT infrastructure is the only cause of financial development (Marszk and Lechman, 2019). According to this theory, new financial products and services will result directly from the growth of ICT. Two important benefits are the increased availability and potential for individualized service delivery through digital financial services. By seeking economies of scale and scope through digital architecture, financial institutions can offer lower-cost services. These projects help promote access to these essential financial services for excluded people. Consequently, ICT development is important for the success of financial development initiatives in different countries.

The second school of thought confirms that financial development leads to the diffusion of ICT (Das et al., 2018). Through augmented use of financial products and services, marginalized and vulnerable groups have access to the tools and knowledge they need to promote their economic situation. Increased purchasing power has led to augmented spending on ICT such as mobile phones and the internet. Additional line of thought supporting this direction of causality argues that increased infrastructure spending in disadvantaged communities is a direct result of augmented access to innovative financial tools and skills for these groups. Such infrastructure investments are vital steps towards creating a technologically advanced and cutting-edge monetary system.

The literature on the link between ICT diffusion and financial development is abundant. But limited studies have investigated the trivariate association among ICT diffusion, financial development and economic growth. The growth of ICT and the financial system, mainly in developing countries, has encouraged researchers to study the combined impact of ICT diffusion and financial development on economic growth.

For their part, Andrianaivo and Kpodar (2011) analysed finance as a channel through which ICT diffusion effects economic growth. Using the GMM in 44 African countries from 1898 to 2007. They confirmed a positive effect of ICT on economic growth and showed that the impact of mobile diffusion on economic growth is greater for countries with a high level of financial inclusion. Furthermore, they concluded that economically well-developed countries tend to grow faster when the mobile penetration rate is high. As for Das et al. (2018), they argued that ICT diffusion and financial system development can contribute to improving economic growth in low-income countries but not in lower-middle-income countries in 43 developing countries from 2000 to 2014

On the other hand, Sepehrdoust and Ghorbanseresht (2019), they studied the effect of ICT diffusion and financial development on the developing countries of the petroleum exporting countries from 2002 to 2015. They used a composite index of ICT as a proxy of ICT development and found that ICT had a crucial role in enhancing the economic growth. For their part, Abeka et al. (2021) examined the role played by telecommunication infrastructure in the association among financial development and economic growth of 44 Sub-Saharan African countries from 1996 to 2017. They pointed out that telecommunication infrastructure could strengthen the capacity of the financial system in terms of promoting economic growth. Furthermore, they argued that building a robust telecommunications infrastructure will also have a direct impact on economic growth.

More recently, Behera et al. (2024) studied the effect of ICT on economic growth by considering its interaction with financial development, R&D expenditures, and foreign direct investment from 2000 to 2020 in 13 newly emerging countries. They found that the usage of ICT has a beneficial effect on economic growth. Moreover, they recognized that ICT improves economic growth when it interacts with financial development and research and development expenditure.

Based on current empirical studies, telecommunication strategies could be pertinent in explaining the influence of financial development to economic growth. This offers a solid basis on which to assume a more focused study on how several telecommunication infrastructures can be deployed as effective instruments in financial policies and programs to attain economic growth in Maghreb countries.

3. DATA AND EMPIRICAL METHODOLOGY

3.1. Data

This paper examines a sample of 3 Maghreb countries, namely, Tunisia, Algeria, and Morrocco. The choice of countries selected for this study is mainly dictated by the availability of reliable data over the sample period. The panel covers the period 2000-2023.

The key variable of interest (ICT diffusion) and other control variables are obtained from the World Development Indicators (2025) published by the World Bank. In this study, we employ individuals using the Internet (% of population) to measure ICT diffusion. Internet users are individuals who have used the Internet (from any location) in the last 3 months. The Internet can be used via a computer, mobile phone, personal digital assistant, game console, digital television, etc.

We include the level of financial development of a country as another explanatory variable, because it helps in making savings and investment decisions. Financial development (FD) is measured by domestic credit to private sector by banks (% of GDP), which allows to measure the degree of intermediation carried out by the banking sector, including credit to private sector.

The dependent variable is economic growth, proxied by the growth rate of real GDP per capita at 2015 prices in US dollars. Our base model contains the explanatory variables common to most growth regressions showed in the literature:

- Initial GDP per capita (log): log of real GDP per capita. A negative coefficient is expected, signifying the existence of conditional convergence between countries (La Porta et al. 1998).
- Inflation rate: The growth of the consumer price index measures the annual percentage change in the consumer price index that determines the inflation rate. A negative coefficient is expected because high inflation can deteriorate price competitiveness, leading to negative effects on foreign trade and economic growth (Elder, 2004).
- Trade openness rate measured as the percentage of imports plus exports in GDP. Trade liberalization encourages specialization in various sectors which has increased the economic scales that encourage productivity and efficiency (Chang and Mendy, 2012). Assuming that openness to international trade is beneficial to economic growth, a positive coefficient is expected.
- Government size is measured in terms of government spending as a percentage of GDP. In the literature, there is no consensus on the direction of the relationship between public spending and economic growth. Indeed, empirical work shows that public spending can affect economic growth negatively or positively depending on the nature and quality of public spending (Devarajan et al., 1996; Gupta et al., 2005).

3.2. Empirical methodology

Therefore, the purpose of our empirical study is to examine if ICT diffusion (ICT) plays a significant role in influencing the impacts of financial development (FD) on economic growth in the Maghreb countries. To this end, we employ a specification that is broadly similar to Abeka et al. (2021). We consider the following model:

$$y_{i,t} = \alpha y_{i,t-1} + \beta_1 FD_{i,t} + \beta_2 ICT_{i,t} + \beta_3 X_{i,t} + \mu_t + \eta_i + \varepsilon_{i,t} \quad (1)$$

Eq. (1) can also be alternatively written with the growth rate as a dependent variable as:

$$Growth_{i,t} = y_{i,t} - y_{i,t-1} = (\alpha - 1) y_{i,t-1} + \beta_1 FD_{i,t} + \beta_2 ICT_{i,t} + \beta_3 X_{i,t} + \mu_t + \eta_i + \varepsilon_{i,t} \quad (2)$$

The subscript "t" represents the period, whereas i represents the country, y is the logarithm of the real GDP per capita, FD is the financial development variable, ICT is the ICT diffusion variable and X is the matrix of the control variables described in the previous section, μ_t is a time specific effect, η_i is an unobserved country-specific fixed effect and $\varepsilon_{i,t}$ is the error term. Eq. (2) forms the basis for our estimation where $(\alpha - 1)$ is the convergence coefficient.

Furthermore, to test whether ICT plays a catalytic role in the relationship between financial development and economic growth, we present into the model an interactive term between ICT and financial development. This allows us to see to what extent the diffusion of ICT affects the impact of financial development on growth. To this end, we add an interaction term constructed as the product of FD and the ICT (i.e., FD*ICT) to Eq. (2) as an additional explanatory variable, apart from the standard variables used in the economic growth equation. If the coefficient on the interaction term is positive and significant, it implies that ICT diffusion can improve the capacity of the financial system to generate high levels of economic growth.

The empirical model used can be presented as follows:

$$Growth_{i,t} = (\alpha - 1)\, y_{i,t-1} + \beta_1 FD_{i,t} + \beta_2 ICT_{i,t} + \beta_3 (FD_{i,t}.ICT_{i,t}) + \beta_4 X_{i,t} + \mu_t + \eta_i + \varepsilon_{i,t} \qquad (3)$$

The subject model, knows both a problem of endogeneity of the variables, and a correlation among the delayed endogenous variable and the residuals. Indeed, any convergence model is dynamic and, as a result, it introduces an additional endogeneity within the explanatory variables.

In general, dynamic models are examined in first differences by the method generalized moments (GMM). In this context, Anderson and Hsiao (1982) suggested to use the lagged first differences of the endogenous variable as instruments. Arellano and Bond (1991) added to this list of instruments the lags of the endogenous variable by showing their orthogonality to the residuals.

It must be said that there are two kinds of GMM estimators, which are applicable to dynamic panels. These are the first difference GMM estimator (Arellano and Bond, 1991) and the system GMM estimator (Blundell and Bond, 1998), which is only an improved version of the first. As its name indicates, the first difference GMM estimator consists of estimating the equation of the model in first difference, in order to control the effect specific to the statistical unit or individual. System GMM estimations allows not only to take into account the heterogeneity of countries but likewise to address the problem of the endogeneity of variables, which essentially arises when examining the association among financial development and economic growth.

Arellano and Bover (1995) and Blundell and Bond (1998) proposed the GMM method in system. This method consists of combining for each period the equation in first difference with that in level. In the equation in first difference, the predetermined variables are instrumented by their values in level lagged by at least one period. On the other hand, in the equation in level, the predetermined variables are instrumented by their first differences. The system of equations thus obtained is estimated simultaneously, using the GMM. Blundell and Bond (1998) verified this method using Monte Carlo simulations. They showed that the system GMM estimator is more efficient than the difference GMM estimator (Arellano and Bond, 1991) which only uses the moment conditions of the first difference equation with lagged variables as instruments.

4. EMPIRICAL RESULTS

At the level of table (1), the results clearly show that the coefficient of the financial development variable is positive and statistically significant at the 5% threshold, which advocates that the financial development, proxied by domestic credit to private sector by banks (% of GDP), play a vital role in economic growth in the GCC countries. The result means that, a 1% increase in financial development will lead to 0.487% increase in real GDP growth. Our findings corroborate the predictions of the supply-side hypothesis, endogenous growth models, and the findings of some empirical studies such as those of Al-Jarallah (2022) and Riache et al. (2024).

Table 1. ICT, Financial development and economic growth (2000-2023)

Variable	Estimation
Initial GDP per capita	-0.305** (-0.012)
Financial development	0.487** (0.005)
ICT	0.229** (0.028)
Financial development*ICT	0.079* (0.087)
Inflation	-0.465* (0.061)
Trade openness	0.234** (0.023)
Government spending	0.561* (0.071)
Constant	-0.879*** (0.000)
R-squared AR(2) test (p-value) Sargan test (p-value)	0.92 0.571 0.541

Note: AR(2) is a test of second order residual serial correlation while the J-test is the Sargan over-identification test. Probability values are in parentheses. *, ** and *** indicate a statistical significance at 10%, 5% and 1% levels, respectively.

In Table (1), ICT diffusion is proxied by the individuals using the Internet (% of population). The estimated coefficient of the ICT variable is statistically significant at the 5% threshold, which advocates that the ICT diffusion plays a positive role in economic growth in the Maghreb countries. More precisely, the results show that if the ICT increases by 1%, the economic growth will be increased by 0.229%. Thus, this result is consistent with those obtained by Sepehrdoust and Ghorbanseresht (2019).

Table (1) shows also the regression findings based on interaction specification using an interaction term among financial development and ICT diffusion (FD*ICT). In this specification, we relied on the interaction term to found the contingency. If the term is positive and significant, this suggests that the effect of financial development on economic growth increases with ICT diffusion. The first thing to note is that the interaction term turns out to be positively signed and statistically significant at 10 percent level. This result suggests that a better contribution of financial development to economic growth requires taking into account the interrelationship and the complementarity between financial development and the ICT diffusion. Therefore, ICT diffusion can improve the capacity of the financial system in terms of improving economic growth. This result is consistent with that of Verma et al. (2023).

The coefficient of initial per capita GDP is negative and statistically significant at 5 percent level, which means that the conditional income convergence across countries hypothesis is verified: holding constant the additional factors of growth, countries with lower GDP per capita tend to grow more quickly. This finding is reliable with preceding studies (see, for example, Barro and Sala-i-Martin, 1995).

The coefficient of the inflation rate has a negative sign and is then statistically significant at 10 percent level, suggesting that a high inflation rate will have an adverse impact on economic growth in Maghreb countries. The result shows that a 1% increase in inflation would decrease economic growth by 0.465%. This finding suggests that inflation harms the economic growth. Indeed, inflation reduces the purchasing power of money, discourages investment and consequently slows down economic growth. This clearly supports the works of Sadeghi et al. (2023) who affirmed that high inflation decreases economic growth in Middle Eastern countries.

On the other hand, trade openness is also significant, at 5 percent level, in explaining the economic growth in Maghreb countries. The positive sign on this variable suggests that the higher trade openness, the higher economic growth. The results show that for every 1% change in the trade openness, the economic growth will increase by 0.234% suggesting trade openness also have an important effect on economic growth. This finding is in line with the study by Altaee (2018) in which, a positive association between trade openness and economic growth was found in GCC countries. Furthermore, it is revealed that government spending exerts a positive and significant effect on economic growth. The results show that for every 1% change in the government spending, the economic growth will increase by 0.561%. This finding is consistent with the study of Poku et al. (2022).

5. CONCLUSIONS AND POLICY IMPLICATIONS

This study examined the role of ICT diffusion in mediating the positive association among financial development and real GDP growth. The results confirmed that the marginal effect of financial development on economic growth depends on ICT diffusion. Then, to test our hypothesis, this study employs the GMM system and data from 3 Maghreb countries, namely, Tunisia, Algeria and Morrocco over the period 2000-2023. Theoretically, the study considers the function of ICT in supporting financial policies to achieve the objective of promoting economic growth. From the empirical analysis, we drew two significant conclusions. First, financial development and ICT diffusion are showed to be a crucial factor in economic growth in the selected countries. Second, the effects of financial development on economic growth are conditioned by the diffusion level of ICT in particular. This confirms preceding empirical studies that have emphasised the complementary role of financial development and ICT diffusion on economic growth (Behera et al. 2024).

From a practical point of view, this study recommends that the policymakers in the Maghreb countries keep pace with recent developments in ICT and pay attention to this element because of its role in financial development and economic growth. Furthermore, Maghreb countries should plan to increase investment in ICT capital sectors such as the internet, mobile and broadband infrastructure, e-commerce practices, etc., as well as increase investment in ICT skills such as education. Therefore, developing countries are called upon to restructure strategies and policies related to investment in ICT. The following are some of the most essential policy incentives that can be adopted by Maghreb economies: (1) Adequate investments in developing ICT infrastructures, significantly expanding network coverage for remote and rural regions. (2) Support for low-income communities in the form of tax subsidies to ensure affordable ICT services. (3) Digital literacy and e-training programs will allow the public to use digital services and access online banking services to enhance their social and economic well-being. (4) Preventing market failures like cyber-crimes and other virtual illegal activities which undermine the trust of users by creating an effective regulatory environment.

REFERENCES

1) Abeka, M.J, Andoh, E, Gatsi, J.G, and Kawor, S, (2021), "Financial development and economic growth nexus in SSA economies: The moderating role of telecommunication development", Cogent Economics and Finance, 9: 1862395
2) Al-Jarallah, R, (2022), "Impact of financial development and resource rents on total factor productivity in Gulf Cooperation Council countries", Global Journal of Management and Business Research, 22(5), 1-9.
3) Alshubiri, F, Jamil, S.A, and Elheddad, M, (2019), "The impact of ICT on financial development: Empirical evidence from the Gulf Cooperation Council countries", International Journal of Engineering Business Management, 11, 1-14.
4) Altaee, H, (2018), "Trade openness and economic growth in the GCC countries: A panel data analysis approach", International Journal of Business and Economic Sciences Applied Research,11(3), 57-64.
5) Anderson, T.W, and Hsiao, C, (1982), "Formulation and estimation of dynamic models using panel data", Journal of Econometrics, 18, 47-82.
6) Andrianaivo, M, and Kpoda, K, (2011), "ICT, financial inclusion, and growth: Evidence from African countries", IMF Working Paper N°73.
7) Arellano, M, and Bond, S, (1991), "Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations", Review of Economic Studies, 58(2), 277-297.
8) Arellano, M., and Bover, O., (1995). "Another look at the instrumental variable estimation of error-component models", Journal of Econometrics, 68(1), 29-51.
9) Barro, R, and Sala-i-Martin, X, (1995), "Technological diffusion, convergence and growth", NBER Working Paper Series, Working Paper No.5151.
10) Behera, B, Haldar, A, and Sethi, N, (2024), "Investigating the direct and indirect effects of Information and Communication Technology on economic growth in the emerging economies: role of financial development, foreign direct investment, innovation, and institutional quality", Information Technology for Development, 30(1), 33-56.
11) Blundell, R, and Bond, S, (1998), "Initial conditions and moment restrictions in dynamic panel data models", Journal of Econometrics, 87, 115-143.
12) Chang, C, and Mendy, M, (2012), "Economic growth and openness in Africa: What is the empirical relationship?", Applied Economics Letters ,19(18), 1903-1907.
13) Das, A, Chowdhury, M, and Seaborn, S, (2018), "ICT diffusion, financial development and economic growth: new evidence from low and lower middle-income countries", Journal of the Knowledge Economy, 9(3), 928-947.
14) Devarajan, S, Swaroop, V and Heng-fu, Z, (1996), "The composition of public expenditure and economic growth," Journal of Monetary Economics, 37(2-3), 313-344.
15) Elder, J, (2004), "Another perspective on the effects of inflation uncertainty", Journal of Money, Credit, and Banking, 36, 911-928.
16) Gupta, S, Clements, B, Baldacci, E, and Mulas-Granados, C, (2005), "Fiscal policy, expenditure composition, and growth in low-income countries", Journal of International Money and Finance, 24, 441-463.
17) La Porta, R, Lopez-de-Silanes, F, Shleifer, A, and Vishny, R.W, (1998), "Law and finance", Journal of Political Economy, 106, 1113-1155.
18) Marszk, A, and Lechman, E, (2019), "New technologies and diffusion of innovative financial products: evidence on exchange-traded funds in selected emerging and developed economies", Journal of Macroeconomics, 62, 103064.

19) Poku, K, Opoku, E, and Ennin, P.A, (2022), "The influence of government expenditure on economic growth in Ghana: An ARDL approach", Cogent Economics and Finance, 10(1), 1-16.
20) Pradhan, R.P, Mallik, G, and Bagchi, T.P, (2018), "Information Communication Technology (ICT) infrastructure and economic growth: A causality evinced by cross-country panel data", IIMB Management Review, 30, 91-103.
21) Riache, S, Louail, B, Arous, J.A, and Tayeb, M.E, (2024), "Financial development, ICT diffusion and economic growth: Case GCC countries", African Journal of Biological Sciences, 6(15), 9387-9397.
22) Romer, P.M, (1986), "Increasing returns and long-run growth", Journal of Political Economy, 94(5), 1002-1037.
23) Sadeghi, M.H, Kalmarzi S.H, and Nademi, Y, (2023), "inflation and economic growth in East Middle countries: A threshold panel approach", Applied Economics Studies, 12(47), 159-179.
24) Sepehrdoust, H, and Ghorbanseresht, M, (2019), "Impact of information and communication technology and financial development on economic growth of OPEC developing economies", Kasetsart Journal of Social Sciences, 40, 546-551.
25) Smith, A, (1776), "An inquiry into the nature and causes of the wealth of nations", Oxford University Press, London.
26) Solow, R.M, (1956), "A contribution to the theory of economic growth", The Quarterly Journal of Economics, 70(1), 65-94.
27) Verma, A, Dandgawhal, P.S, and Giri, A.K, (2023), "Impact of ICT diffusion and financial development on economic growth in developing countries", Journal of Economics, Finance and Administrative Science, 28(55), 27-43.
28) World Bank, (2024). World Development Indicators. World Bank, Washington DC.