

What Kinds of Business Skills are Important for Economic Growth?

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Abstract

This study examines what kinds of business skills significantly impact economic growth. The empirical results show that financial skills and language skills contribute to economic growth, however, the relationship between ICT skills and economic growth cannot be found. On the other hand, having or not having financial skills promote the income divide. It can be considered that low-income young workers lack the opportunities to invest. The chance to acquire and develop financial skills should be made available to everyone. Moreover, there is no evidence of a relationship between financial skills and educational assessment of mathematics. Therefore, mathematics is not necessarily related to financial skills. Highly-skilled foreign workers positively promote financial skills. Additionally, brain drain is also positively linked with financial skills. In such countries, workers who have acquired financial skills abroad may return to their home countries. Finally, low interest rates promote financial skills. Low interest rates promote investments instead of traditional low-risk investments.

Keywords: business skill, economic growth, financial skill, ICT skill, Language skill

1. Introduction

Every country has considered how to achieve economic growth and has conducted policies to achieve it. There is a difference in the kinds of economic growth attained by every country, however, significant, sound, and sustainable economic growth is an important issue for policymakers to seek.

To attain economic growth, human capital has played an important role and this idea has been widely recognized and accepted not only in the business field but also in the academic field. However, a consensus for the kinds of abilities needed which are important for achieving economic growth has not been reached. Our society is beginning to accept the recognition that the role of human capital in economic growth is as important as capital investment, but there is not necessarily a consensus on what specifically plays a major part in economic growth. At most, the importance of 'education' is recognized. However, the relationship between education and economic growth has not yet been clarified despite discussion and excellent research in academia, which will be a recurring theme.

This study focuses on business skills. The relationship between business skill and economic growth has received much attention in many economies. In general, competence in these skills would lead to economic growth, however, there is some possibility that promoting these skills could expand income inequality. This study examines the issue that income inequality would sometimes damage sound and sustainable economic growth. For business skills, three skills are employed and examined empirically, namely, financial skills, ICT skills, and language skills. Additionally, the deterministic elements that promote financial skills are analyzed.

Following section 1, this study is structured as follows. Section 2 reviews previous research. Empirical methods are employed to analyze the issues mentioned above; these methods are explained in detail in section 3. The empirical results are shown in section 4. Finally, a brief summary is mentioned.

2. Previous studies on the relationship between business skills and economic growth

There has been extensive discussion, reports, and academic papers on the relationship between business skills and economic growth. In the academic field, this theme has been examined in the past and companies have analyzed the effects of business skills on their own profits. This would be an eternal issue which cannot be solved and cannot reach a conclusion. It is natural that the required skills will change according to the demands of society.

However, it can be said in reality that skills are one of the important elements for promotion of economic growth. Hanushek and Woessmann (2012) showed that there is a positive relationship between quality schools and growth. Yagoub and Zeinab (2019) provided evidence that skilled workers cause growth in Sudan. In general, the relationship between business skills and economic growth has been widely acknowledged.

In the field of economics, human capital on the influence of economic growth has been a focus and has been analyzed empirically and theoretically from the neoclassical school of economics. Deng and Zhao (2018) indicated

that human capital with higher education plays a significant part in economic growth. Shafaq et al. (2019) showed that human capital development is positively linked with lower middle income countries' economic growth. Goczek et al. (2021) suggested that educational skills bring economic growth in primary and secondary education. Ngepah (2021) showed that human capital plays a positive role on economic growth. Ouhibi (2021) suggested that increasing human capital promotes economic growth. It can be said safely that human capital is strongly linked with skills and leads to economic growth.

This study also focuses on financial skills. It is needless to say that a safe and secure financial system contributes to economic growth. Solomon and Abdullahi (2019) found that a well-established financial system contributes to economic growth via an intermediation function. Also, Muhammad et al. (2021) suggested that development of the financial system promotes efficient markets through the activities of borrowers and savers. Moreover, Thatasarani et al. (2021) showed that promoting a well-established financial system is related to economic growth.

Along with the importance of a safe and secure financial system, financial skills would be significant for expanding economic growth. No one would disagree with the idea that the know-how of fundraising and fund management is closely related to economic growth. This relationship has received much attention from Namble et al., (2023). It showed that financial technology is related with significant economic growth. Moreover, Wiagustini et al. (2023) found that financial literacy experts promote positive economic performance and sustainability. Zaimovic et al. (2023) indicated that financial literacy is important for individual well-being and sustainable development for society. Masnita et al. (2019) suggested that financial inclusion promotes economic growth through income distribution and poverty alleviation.

Okelio et al. (2017) found that financial literacy for small and medium enterprises (SMEs) is necessary for understanding financing options. Also, Adewumi and Simangele (2023) showed that financial literacy in SMEs is crucial for profitability and investments. Cossa, et al. (2018) indicated that financial literacy promotes entrepreneurs' skills.

The relationship between financial skills and economic growth and the importance of acquiring financial skills have been accepted in general, however, it is also possible to think that sophistication of financial products and transactions using ICT (Information and Communication and Technology) would lead to increased income divide and polarization of society.

ICT is expected to promote economic growth as well as financial skills. Lawrence and Jang (2014) showed that Internet usage causes economic growth empirically. Di Paolo (2015) showed that proficiency in English is positively related to level of competitiveness. Majeed and Ayub (2018) suggested that spending money on the Internet brings economic growth. Haftu (2019) indicated that a 10% rise in mobile phone ownership results in a 1.2% increase in GDP per capita. Kashif et al. (2020) showed that investment in ICT is linked with economic growth through trade and (foreign direct investment (FDI). Zhang et al. found that spreading usage of Internet causes labor saving and leads to economic growth. However, it cannot be denied that the process of ICT dissemination can lead to confusion and polarization between those who have access and those who do not.

There is a sense in which the acquisition of operational skills in language used to be more of a necessity than ICT. Today, with the proliferation of translation software and advances in AI (Artificial Intelligence), there is a sense that the value of language skills has diminished, but even so, it would be dangerous to overlook the relationship between language and economic growth. In general, language seems to be considered one of the incentives to promote economic growth as well as financial skills and ICT. Sakellariou (2009) found that the usages of language skills and computers skills are linked with large earnings. Azam et al., (2013) found that average wages are 34% higher for person who can use English fluently. Alhendi et al. (2021) also found that English proficiency promotes economic growth.

This study empirically examines the relationship between those business skills and economic growth. Also, polarization by promoting such skills is analyzed empirically. Moreover, in light of recent developments, financial skills are analyzed in detail to examine the factors that contribute to their acquisition.

3. Empirical methods

This study empirically analyzes the effect of business skills on economic growth. It examines whether or not business skills promote economic growth. As independent variables, GDP per capita and Gini coefficient are employed for estimations. Independent variables are financial skills, Digital technological skills, and English proficiency TOEFL. The estimated equations are (A) and (B).

$$\text{GDP per capita} = a + b_1\text{Financial skills} + b_2\text{Digital technological skills} + b_3\text{English proficiency TOEFL} + \varepsilon \quad (\text{A})$$

$$\text{Gini coefficient} = a + b_1\text{Financial skills} + b_2\text{Digital technological skills} + b_3\text{English proficiency TOEFL} + \varepsilon \quad (\text{B})$$

This study also focuses on deterministic elements of financial skills. The equations (A) and (B) depend on human resources, however, the development of financial skills is dependent on social structure as a whole. As social

structure, three variables, namely, aging of population, educational assessment PISA mathematics, and total expenditure on R&D per capita are used for estimations. The estimated equations are (C).

Financial skills = $a + b_1$ Aging of population + b_2 Educational assessment PISA mathematics + b_3 Total expenditure on R&D per capita + ε (C)

Moreover, the improvements of financial skills are considered to be influenced by the outflow and inflow of human resources worldwide. The equations are as follows (D).

Financial skills = $a + b_1$ Brain drain + b_2 Foreign highly skilled person + ε (D)

Finally, financial skills seem to be related to macroeconomic conditions. Three macroeconomic variables, consumer price inflation, exchange rate stability, and interest rate are employed for estimations. The equations are (E).

Financial skills = $a + b_1$ Consumer price inflation + b_2 Exchange rate stability + b_3 interest rate + ε (E)

The estimation methods are Ordinary Least Squares (OLS) and Robust estimation. As Robust estimation, M-estimation is employed, and is one of the robust estimation methods in the field of statistics. There is the potential for error between the sample data and the estimated data. The ordinary least squares evaluate all errors with equal weight, so one large exception value can have a significant impact on the estimations. On the other hand, in M-estimation, the errors are transformed into the one to give a small weight. For both estimation methods, panel data are used.

All of the data are from World Competitiveness Ranking 2023 (IMD). The number of ranked countries is 64. They are Argentina, Australia, Austria, Bahrain, Belgium, Botswana, Brazil, Bulgaria, Canada, Chile, China, Columbia, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong SAR, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Johdan, Kazakhstan, Korea Rep., Kuwait, Latvia, Lithuania, Luxembourg, Malaysia, Mexico, Mongolia, Netherlands, New Zealand, Norway, Peru, Philippines, Poland, Portugal, Qatar, Romania, Saudi Arabia, Singapore, Slovak, Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan China, Thailand, Turkey, UAE, United Kingdom, USA, and Venezuela. The sample period is from 1995 to 2022. In the following section, empirical analyses are conducted.

4. Empirical results

According to the equations from (A) to (E), regression analyses are performed. The empirical results are shown in Tables 1, 2, 3, 4, and 5. Table 1 shows the results of equation (A). The results are almost as expected in the equations (1) and (2), however, the coefficients of digital technological skills are minus (equation (1)) or insignificant (equation (2)). The reason is unclear in the analysis because the coefficient of (2) is not significant, however, the prevailing of ICT cannot have always been leading economic growth. It is difficult to interpret why the spread of ICT plays a negative impact on economic growth. During the spreading period, such things may occur due to increased introduction costs, and it is undeniable that excessive dependence and use may have negative effects. However, the coefficient is not significant at the 10% level.

Table 2 includes an interesting point. The improvements of ICT and language skills reduces economic divide, on the other hand, the improvement of financial skills promotes the divide. One coefficient is significant at 10% (equation (4)). However, the results are robust as the equation (3). Surely, financial skills improve economic growth as shown in equations (1) and (2) of Table 1, however, that point should be considered by society as a whole. Compared with the past, financial instruments and commodities have become complex, and at the same time, have become speculative. Insufficient and inadequate financial knowledge can lead to personal bankruptcy and lifelong debt. It can also destabilize society. The situation sometimes fits well not only on the personal level but also on the company or institutional level.

It's possible that low-income young workers lack the opportunities to invest. Also, the reason that we should help young people is to ensure that they can obtain savings, retirement and health care as safety net (OECD, 2015). The chance to acquire and develop financial skills should be available to everyone.

The results of Table 3 are expected, however, it should be noted that the relationship between financial skills and educational assessment PISA mathematics cannot be found in either equations (5) or (6). Mathematics ability is not necessarily related to financial skills. This fact may lower the barrier to acquiring financial skills. However, one coefficient of equation (5) is significant at the 10% level.

Table 4 shows that brain drain is positively linked with financial skills, as shown in equations (7) and (8). It may seem strange that the coefficients are positive, however, that workers who have acquired financial skills abroad may return to their home countries. One coefficient of equation (8), however, is insignificant at the 10% level.

Finally, low interest rates promote financial skills according to equation (9) of the Table 5. Low interest rates promote investments instead of traditional safe investments. However, despite the coefficient of (10), it is not significant at the 10% level.

Table 1. Equation (A)
Dependent variable: GDP per capita

Method	Panel Least Squares	Robust Least Squares
Equation number	(1)	(2)
C	-189119.9*** (-16.453)	-161348.1*** (-20.917)
Financial skills	12064.20*** (8.512)	10837.92*** (11.421)
Digital technological skills	-739.145*** (-739.145)	439.736 (0.477)
English proficiency TOEFL	1658.554*** (11.885)	1310.052*** (13.989)
Adj.R2/Rw-squared	0.538	0.739
F-statistic/Rn-squared statistic	167.147	874.192
Prob (F-statistic/Rn-squared statistic)	0.000	0.000

Note) ***, **, and * denotes significant at 1, 5, and 10% respectively.

Table 2. Equation (B)
Dependent variable: Gini Coefficient

Method	Panel Least Squares	Robust Least Squares
Equation number	(3)	(4)
C	82.388*** (20.744)	78.168*** (20.549)
Financial skills	1.045** (2.139)	0.880* (1.880)
Digital technological skills	-2.249*** (-4.721)	-1.866*** (-4.109)
English proficiency TOEFL	-0.414*** (-8.583)	-0.397*** (-8.587)
Adj.R2/Rw-squared	0.259	0.327
F-statistic/Rn-squared statistic	50.848	140.685
Prob (F-statistic/Rn-squared statistic)	0.000	0.000

Note) ***, **, and * denotes significant at 1, 5, and 10% respectively.

Table 3. Equation (C)
Dependent variable: Financial skills

Method	Panel Least Squares	Robust Least Squares
Equation number	(5)	(6)
C	6.253*** (18.865)	6.234*** (18.675)
Aging of population	-0.015* (-1.847)	-0.017** (-2.101)
Educational assessment PISA mathematics	-0.0005 (-0.640)	-0.0003 (-0.459)
Total expenditure on R&D per capita	0.001*** (20.129)	0.001*** (20.096)
Adj.R2/Rw-squared	0.519	0.479
F-statistic/Rn-squared statistic	155.264	463.374
Prob (F-statistic/Rn-squared statistic)	0.000	0.000

Note) ***, **, and * denotes significant at 1, 5, and 10% respectively.

Table 4. Equation (D)

Dependent variable: Financial skills

Method	Panel Least Squares	Robust Least Squares
Equation number	(7)	(8)
C	3.902*** (29.029)	3.781*** (28.263)
Brain drain	0.444*** (16.136)	0.492*** (17.937)
Foreign highly skilled person	0.063** (2.507)	0.041 (1.612)
Adj.R2/Rw-squared	0.527	0.629
F-statistic/Rn-squared statistic	240.223	547.857
Prob (F-statistic/Rn-squared statistic)	0.000	0.000

Note) ***, **, and * denotes significant at 1, 5, and 10% respectively.

Table 5. Equation (E)

Dependent variable: Financial skills

Method	Panel Least Squares	Robust Least Squares
Equation number	(7)	(8)
C	6.996*** (75.823)	7.017*** (70.933)
Consumer price inflation	0.020 (0.567)	0.018 (0.487)
Exchange rate stability	0.733 (0.959)	0.811 (0.990)
Interest rate	-0.189*** (-5.806)	-0.193 (-5.530)
Adj.R2/Rw-squared	0.182	0.211
F-statistic/Rn-squared statistic	18.312	50.453
Prob (F-statistic/Rn-squared statistic)	0.000	0.000

Note) ***, **, and * denotes significant at 1, 5, and 10% respectively.

5. Conclusions

This study focused on the relationship between business skills and economic growth and empirically examined what kinds of business skills are required for economic growth. The empirical results showed that financial skills and language skills promote economic growth on one hand, however, the relationship between ICT skills and economic growth do not appear to be significant on the other hand. At the early stage of the spreading of ICT, increased introduction costs and excessive dependence on ICT may occur. Sometimes it may be wasteful. On the other hand, financial skills expand the income divide. There may be a situation that low-income young workers lack the opportunities to invest. The chance to acquire financial skills should be available to everyone to stabilize the economy. This study also examined financial skills in detail apart from ICT and language skills. No relationship between financial skills and educational assessment of mathematics was found. Mathematics is not positively related with financial skills. The barrier to obtain financial skills may be lower. Foreign highly-skilled workers positively contribute to the improvements of financial skills, however, brain drain is also linked with financial skills. In some countries, such workers who have obtained significant financial skills abroad may come back to their home economies. Finally, low interest rates promote financial skills. Low interest rates increase investments instead of traditional safe investments such as government bonds.

References

- Adewumi, S., & Simangele, C., C. (2023). Financial literacy skills level among small and medium scale businesses: lessons for entrepreneurial decision-making in Lagos, Nigeria. *Social and Humanities*, 1, 14-28.
DOI: <https://doi.org/10.21303/2504-5571.2023.002799>
- Alhendi, O., Dávid, L. D., Fodor, G., Andol, G. F. C., & Balogh, P. (2021). The impact of language and quality education on regional and economic development: A study of 99 countries. *Regional Statistics*, 11(1), 42-57.
DOI: <https://doi.org/10.15196/RS110101>
- Azam, M., Chin, A., & Prakash, N. (2013). The returns to English language skills in India. *Economic Development & Cultural Change*, 61(2), 335-367.
- Cossa, A. J., Madaleno, M., & Mota, J. (2018). Financial literacy importance for entrepreneurship: A literature survey. Proceedings of the European Conference on Innovation & Entrepreneurship, 2018, 909-916.
- Deng, L., & Zhao, Y. (2018). Effect channels of education level and cognitive skill on economic growth. *Kuram ve Uygulamada Egitim Bilimleri*, 18(5), 1440-1449.
DOI: <https://doi.org/10.1238/estp.2018.5.041>
- Di Paolo, A., & Tansei, A. (2015). Returns to foreign language skills in a developing country: The case of Turkey. *Journal of Development Studies*, 51(4), 407-421.
- Goczek, L., Witkowska, E., & Witkowska, B. (2021). How does education quality affect economic growth? *Sustainability*, 13(11), 1-22.
DOI: <https://doi.org/10.3390/su13116437>
- Haftu, G. G. (2018). Information communications technology and economic growth in Sub-Saharan Africa: A panel data approach. *Telecommunication Policy*, 43(1), 88-99.
- Hanushek, E. A., & Woessmann, L. (2012). Do better schools lead to more growth? Cognitive skills, economic outcomes, and causation. *Journal of Economic Growth*, 17(4), 267-321.
DOI: <https://doi.org/10.1007/s10887-012-9061-x>
- Kashif, I., Hui, O., & Muhammad, H., & Khurshaid. (2020). Analyzing the effect of ICT on migration and economic growth in Belt and Road (BRI) countries. *Journal of International Migration and Integration*, 21(1), 307-318.
DOI: <https://doi.org/10.1007/s12134-019-00739-z>
- Lawrence, J., & Jang, J. C. (2014). Internet education and economic growth: Evidence from cross-country regressions. *Economies*, 2(1), 78-94.
DOI: <https://doi.org/10.3390/economies2010078>
- Majeed, M. T., & Ayub, T. (2018). Information and communication technology (ICT) and economic growth nexus: A comparative global analysis. *Pakistan Journal of Commerce and Social Sciences*, 12(2), 443-476.
- Masnita, Y., Triyowali, H., & Khomsiya. (2019). Application of financial inclusions in Indonesia: A study on vulnerable group. *Eurasian Journal of Economics and Finance*, 7(3), 22-33.
DOI: <https://doi.org/10.15604/ejef.2019.07.03.003>
- Muhammad, A., Raza, S. A. A., Puah, C.-H., & Shamin, S. (2021). How financial development and economic growth influence human capital in low-income countries. *Journal of Social Economics*, 48(1), 1393-1407.
DOI: <https://doi.org/10.1108/IJSE-05-2020-0323>
- Namble, N. B., Dadzie, P., & Dorcas, O. H.-D. (2023). Measuring the effect of income inequality, financial inclusion, investment, and unemployment, on economic growth in Africa: A modeling role of digital financial technology. *International Journal of Economics and Financial Issues*, 13(4), 111-124.
DOI: <https://doi.org/10.32479/ijefi.14425>
- Ngepah, N., Saba, C. S., & Mabindisa, N. G. (2021). Human capital and economic growth in South Africa: A cross-municipality panel data analysis. *South African Journal of Economic and Management Sciences*, 24(1), 1-11.
DOI: <https://doi.org/10.4102/sajems.v24i1.3577>
- OECD, 2015, Financing smallholder farmers: Growth potential, OECD Observer, 303, September, 29-30
- Okelio, C. B., Mpeera, N. J., Munnene, J. C., & Akoi, M. C. (2017). The relationship between access and growth of SMEs in developing economies: Financial literacy as a moderator. *Review of International Business and Strategy*, 27(4), 520-538.
- Ouhibi, S. (2021). Does human capital matter for growth in North African countries? Panel threshold regression approach. *The Journal of Developing Areas*, 5583, 189-203.
- Shafaq, S., Muhammad, H., Tariq, M., Kashif, I., & Akbar, K. (2019). The dynamic relation between technology adoption, technology innovation, human capital and economy: Comparison of lower-middle-income countries. *Interdisciplinary of Complex Systems*, 17(1), 146-161.
DOI: <https://doi.org/10.7906/indecs.17.1.15>

- Sakellariou, C., 2009. Endogeneity, computers, language skills and wages among university graduates in Vietnam. *Applied Economics*, 41(5), 653-663.
DOI: <https://doi.org/10.1086/668277>
- Solomon, A., Abdullahi, D., A. (2019). Financial openness, trade integration and economic growth: The case of Pacific Melanesian countries. *Journal of Development Areas*, 53(4), 43-56.
- Thathsarani, U. S., Wei, J., & Samaraweera.(2021), Financial inclusion's role in economic growth and human capital in South Asia: An econometric approach. *Sustainability*, 13(8), 4303.
DOI: <https://doi.org/10.3390/su13084303>
- Wiagustini, N. L. P., Ramanitha, I. W., & Putra, I. M. W. (2023). Financial literacy and financial behavior encouraging business sustainability by mediation of financial performance. *Access la Success*, 24, 226-234.
DOI: <https://doi.org/10.47750/QAS/24.192.27>
- Yagoub, E., &Zeinab, K. (2019). Skilled workers as the backbone of an efficient economy: A study of national project for continuous industrial development in Sudan. *Journal of International Economics*, 10(1), 11-29.
- Zaimovic, A., Toriakovic, A., Amaut-Berilo, A., Zaimovic, T., & Dedovic, L. (2023). Mapping financial literacy: A systematic literature review of determinants and recent trends. *Sustainability*, 15(12), 9358.
DOI: <https://doi.org/10.3390/su15129358>
- Zhang, X., Shinozuka, M., Tanaka, Y., Kamamori, Y., & Masui, T. (2022). How ICT can contribute to realize a sustainable society in the future: A CGE approach. *Environment, Development and Sustainability*, 24(4), 5614-5640.
DOI: <https://doi.org/10.1007/s10668-021-01674-9>