

THE ROLE OF ENGLISH PROFICIENCY AND FINANCIAL DEVELOPMENT IN STIMULATING ECONOMIC GROWTH

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Abstract

The role of English as the language of trade, finance and technology, has become more vital for development strategies in the 21st century. Recognition of English as the language of communication at the international level not only as knowledge of the language but also the ability to communicate effectively. Thus, the English language has become a necessity to strengthen relations with other countries in the world, especially in international trade, economic development, and financial development. With this motivation, the main purpose of this study was to look the impact of English proficiency in the relationship between financial development and economic growth. Using panel data for 55 countries from 2010-2019, this study applied the generalized method of moments estimation (GMMs). The findings prove that the interaction between English proficiency and financial development has positive impact on economic growth in selected countries. This study suggests that in achieving high and competitive economic growth in this era of globalization, the role of interaction between financial development and English Language Proficiency is vital to consider a reform that would strengthen the financial development and stimulate economic growth as well as development.

Research paper

Keywords: English Language Proficiency, Financial Development, Economic Growth, GMMs

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Introduction

English is an international as languages vary from one nation to another and recognized as a second language. To connect one country with another English language is the medium of communication. Now the situation is more complex, even the improvement of English proficiency is counted as a skill and ability, especially in communication. Nowadays, the role of English is increasingly important in connecting the world especially in trade, and the use of new technologies. The importance of using English began to expand in the early 1990s when the relationship of English was linked as a language of commerce, finance and even technology. This makes English language proficiency included in one of the development strategies in the 21st century (Lazaro & Medalla, 2004).

The effects of globalization, urbanization and increasing use of the internet have indirectly changed the role of English over the past 20 years, and even English has become a basic skill that needs to be mastered, especially in the employment sector. English language is getting more used as the whole world has become a global. Based on Lazaro and Medalla (2004) also found that at least 75 percent of emails, telexes and cables are in English and even as much as 95 percent of usage in the internet and computers also use English as the main language.

Past studies have found that the increase in English proficiency is also able to impact economic development through trade because the increase in English proficiency is significant in increasing international trade as well as economic well-being [H.Ku & A.Zussman (2011); Hutchinson (2002, 2005); Lee (2012)]. Based on Casale (2011) and Chiswick (2013) also found that the increase in English proficiency is also significant with the increase in income.

This is also reinforced by Louis Arcand (1996) who discusses the role of language that has an influence in economic growth through social institutions that grow also reduce transaction costs and moral hazard problems (moral hazard problem). While Zhang (2012) says language can be seen as a skill and is an investment in human capital that leads to economic benefits because it plays an important role in determining income.

However, there are still a lack of studies examining the impact of English language proficiency influencing relationship between financial development and economic growth in a country. The expand of financial development is also affected by the influence of external factors such as culture, Stulz & Williamson (2002) stated that cultural differences such as religion and language cause financial differences in each country, for example Iran shows that culture can influence institutional change. With motivation from cultural influences measured using language and religion as proxies, this study assumes that countries with low levels of English proficiency also show low financial development as well as economic growth.

Therefore, this study was conducted to examine whether the relationship between English language proficiency and financial development affects economic growth in general. This is further strengthened by the findings of a study that is more focused on the relationship between the level of intelligence with financial development conducted by Hafer, R.W. (2016) studied that increasing the level of Intelligence quotient (IQ) can have a significant impact on financial development. This shows that with the increase in English proficiency also reflects the level of education that is able to have a positive impact on financial development, especially for developing countries.

In general, this study is able to add value to previous studies that lead to the relationship between financial development and economic growth by including the factors of English language proficiency which is seen to be increasing and important in this era of globalization. This study also looks at the analysis of panel data for developed and developing countries and takes into account the level of English proficiency in a country. In addition, the effectiveness of English proficiency as a medium of communication is able to expand the network of economic activities, especially on open trade and relations with developed countries. Therefore, the findings of this study are also able to provide policy implications to policy makers because the policy framework for financial institutions has importance on the long-term impact on economic growth (King & Livine, 1993).

Literature Review

Based on theory, this study takes into account the theory of knowledge accumulation that has a positive effect on economic growth when there is an increase in knowledge through studies conducted by firms as well as development activities (Romer 1990; Grossman and Helpman 1991; Aghion and Howit 1992 and Jones 1995). In addition, according to Coe & Helpman (1995) and Falvey (2004) the rate of dissemination of new knowledge also depends on the extent to which an economy is able to absorb the dissemination of knowledge globally. Moreover, based on neoclassical growth theory also states that language as capital input, even Solow growth model considers language as human capital where equilibrium level of gross domestic product (GDP) per capita is achieved based on increased output function which includes accumulation of language skills (Mankiw et al. 1992 and Lucas 1993).

However, Arcand (1996) states that the approach of language as human capital can be attributed to the modification of the ‘golden rule’ that produces linguistic skills as a saving rate that maximizes per capita consumption in a steady state.

Most studies conclude that financial development means an increase in funds as well as an increase in the use of financial institutions to facilitate the distribution of funds (R.W Hafer, 2016). Financial development is also considered one of the tools for measuring economic growth (King & Livine, 1993a, 1993b; Rousseau & Watchel, 1998; Levine, Loayza & Beck, 2000; Ebrahimi et al., 2022; Hosseini et al., 2022; Salamzadeh & Markovic, 2018). In the analysis of the relationship between financial development and economic growth, it is also explained that there are external factors that also influence financial development in a country. This is evidence when there are studies that examine the relationship of financial development by taking into account geographical factors (Livine et al., 2000), fiscal policy (Bencivenga & Smith, 1991), technology (Merton, 1998), the legal system (La Porta, 1998), Innovation (Ang, 2014), income gaps and poverty (Clarke, 2006; Beck & Livine, 2007), human capital (K. Maskay, 2012), and Internet use (Sala-huddin & Gow, 2015). However, there are still research gaps in the relationship of financial development and growth. This may be due to the direct impact of the financial system on growth which can be seen in terms of capital accumulation as well as the number of productivity factors (Livine, 1997). In addition, the differences in financial systems between countries are also a priority to expand the study of the relationship between financial development and economic growth. According to K. Maskay (2012) states that most coun-

tries still have a low level of financial development that prevents the occurrence of increased innovation and productivity. Based on Edmunds Čižo, Olga Lavrinenko, Svetlana Ignatjeva (2020) mentioned the analysis of the impact of financial development in the EU countries on their economic growth in the period 1995-2017 shows that there is a close relationship between the financial development level and the GDP per capita level.

Based on the relationship between financial development and growth, the development of financial in a country is also influenced by various factors. English language proficiency is able to enhance financial development as well as economic growth because English language proficiency has a significant impact on trade flows (Hyejin & Assaf, 2010). Economic activities require the exchange of goods, and even interested parties need to state the desire for an item they want to own and negotiate to obtain it. Therefore, the need for language proficiency also increases in line with the progress, differentiation and substitution of products, even to continue bilateral trade and investment of two different countries need to use a third language as a medium of delivery (Chang & W. Travis, 2009). Arcand (1996) states that the role of language proficiency is able to control the problem of imperfect information in transactions. While Pendakur (2002) found that the increase in language knowledge opens the door for individuals to trade more widely and can even offer great consumption benefits because individuals can use language knowledge as a tool to increase consumption. Pradhan et. al (2018) employed panel unit root and panel cointegration tests to determine the interactions between innovation, financial development, and economic growth in 49 European countries between 1961 and 2014. Their results indicate that there is the

presence of a long-run equilibrium relationship between innovation, financial development, and per capita economic growth.

On the others hand, there also has a study which conducted to see the effect of English proficiency level on economic growth. Lee (2012) stated that the level of English proficiency can be considered as one of the components in measurement of human capital. In his study, Lee found that the relationship between language proficiency and economic growth was positive for Asian and European countries and even found that increased English proficiency also had a positive effect if supported by the accumulation of sufficient physical capital, technology, political stability, good government and factors-other factors. In addition, English proficiency is also a variable that has a bearing on national fixed effects

Keller (2002) and Sarmidi, Ridzuan & Md Nor(t.t) found that skills in language mastery is very important for the dissemination of technology, through the same language communication further facilitates the dissemination of technology takes place. Hall & Jones (1999) in turn assert that differences in output per employee between countries are explained through language differences. Yet it does not mean that every employee must be proficient and proficient in English instead there is a division between employees who are proficient or not in English. Thus, groups with proficiency in English can indirectly improve comprehension through new knowledge globally. There also have a study found that employees with skills in English are more likely to give a good commitment to the company and able to improve company performance to the international level compared with the countries that do not practice English (Sachiko & Tomoki, 2015). This indirectly shows that

language proficiency also plays a vital role in stimulate and sustain the economic growth, especially in developing countries.

Data and Methodology

This study focuses on cross-sectional panel data as well as macroeconomic indicators for 55 countries from 2010-2019. Most of the data is obtained from world bank data. For the level of English proficiency this study uses a proxy from the English Proficiency Index (EPI index) while macro data is taken through the world bank database (World Bank). The countries selected in this study include the level of English proficiency index which is divided into two groups, namely countries that have a high level of English proficiency based on the index level over 55 and the second is a group of countries with low levels of English proficiency that is below 55.

For the measurement of financial development this study uses a proxy that has been used by the study of Rousseau & Watchel (2011) as well as King & Livine (1993) where taking credit to the private sector as a proxy for financial development. Credit to the private sector is private credit that symbolizes the level of financial intermediaries, and is the best measure of financial development (Hafer, 2016). This study also uses variables based on the study of Rousseau & Watchel (2011) and King & Livine (1993) that is government spending and trade but also adds some other variables such as inflation, per capita population and investment.

The model specifications for this study are taken from Rousseau & Watchel (2011) as well as King & Livine who look at the dynamic relationship between financial development and also economic growth. Therefore,

the model specifications to see the impact of financial development, English proficiency on economic growth are as follows:

$$Y_{it} = \alpha_0 + \beta_1 FD_{it} + \beta_2 EG_{it} + \beta_3 X_{it} + \mu_{it} \quad (1)$$

From equation (1),

$$Y_{it} - Y_{i,t-1} = (1-\alpha) Y_{i,t-1} + \beta_1 FD_{it} + \beta_2 EG_{it} + \beta_3 X_{it} + \eta_j + \varepsilon_{it}$$

$$Y_{it} = \alpha Y_{i,t-1} + \beta_1 FD_{it} + \beta_2 EG_{it} + \beta_3 X_{it} + \eta_j + \varepsilon_{it} \quad (2)$$

Where i is the country, t the time rate, Y refers to the real growth of GDP per capita while FD is the measure for the financial development indicator, EG is the level of English proficiency and X is the set of descriptive variables that also have an effect on economic growth comprising of the ratio of trade measured by total imports per capita plus total exports per capita, the final ratio of total government consumption expenditure and also the level of inflation. η_j indicates the specific effect on the invisible state and ε_i is the error term used in the equation.

This study uses panel data analysis by applying the generalized moment estimation method (GMMs) introduced by Holtz-Eakin, D., Newey, W., & Rosen, H. S. (1988) and later extended by Arellano and Bond (1991), Arellano and Bover (1995) as well as Blundell and Bond (1998). This estimation method was chosen to overcome country -specific effects that cannot use the dummy effect because there is a dynamic structure in the equation based on the relationship of financial development and growth (Dana et al., 2022). Second, there is a possibility that there are illuminating variables in the equation that could be endogenous.

Therefore, to overcome the countries-specific effect problem, GMM Difference using the first differentiation is performed against equation (2) and the new equation is as follows equation (3) (Arellano & Bond 1991):

$$Y_{it} - Y_{i,t-1} = \alpha(Y_{i,t-1} - Y_{i,t-2}) + \beta_1 (FD_{i,t} - FD_{i,t-1}) + \beta_2 (EG_{i,t} - EG_{i,t-1}) + \beta_3 (X_{it} - X_{i,t-1}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1}) \quad (3)$$

To address the possibility of the independent variable (x) bias and the existence of a correlation between $(Y_{i,t-1} - Y_{i,t-2})$ and $(\varepsilon_{i,t} - \varepsilon_{i,t-1})$, Arellano and Bond (1991) proposed a regressor lattice (at the level) is used as an instrument. This is based on the following assumptions: 1) the error terms have no serial correlation, 2) the lat for the descriptive variable (independent variable) is a weak exogenous variable. Therefore, the set of moment conditions for GMM Difference estimation is as follows:

$$E[Y_{i,t-s} \cdot (\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \quad \text{when } s \geq 2; t = 3, \dots, T \quad (4)$$

$$E[FD_{i,t-s} \cdot (\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \quad \text{when } s \geq 2; t = 3, \dots, T \quad (5)$$

$$E[EG_{i,t-s} \cdot (\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \quad \text{when } s \geq 2; t = 3, \dots, T \quad (6)$$

$$E[X_{i,t-s} \cdot (\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \quad \text{when } s \geq 2; t = 3, \dots, T \quad (7)$$

Although GMM Difference estimation (referring to equations (3) and (4)) can control for specific and bias effects, Alonso-Borrego and Arellano (1999) and Blundell and Bond (1998) state that when the illuminating variable is persistent, the level lat for the variable to be a weak instrument. Weak instruments will cause parameter budgeting to be biased in small samples and large asymptotic variances. Previously, Arellano and Bover (1995) proposed an alternative system estimator i.e. a combination of differentiated equations (equation (3)) and level equations (equation (1)). Blundell and Bond (1998) show that these estimators are able to reduce bias and inaccuracies with different estimators. Based on Arellano and Bover (1995), the addition of a set

of moment conditions for the second part of the GMM System estimation (regression at levels) is as follows:

$$E[(Y_{i,t-s} - Y_{i,t-s-1}) \cdot (\eta_i + \varepsilon_{i,t})] = 0 \quad \text{for } s = 1 \quad (8)$$

$$E[(FD_{i,t-s} - FD_{i,t-s-1}) \cdot (\eta_i + \varepsilon_{i,t})] = 0 \quad \text{for } s = 1 \quad (9)$$

$$E[(EG_{i,t-s} - EG_{i,t-s-1}) \cdot (\eta_i + \varepsilon_{i,t})] = 0 \quad \text{for } s = 1 \quad (10)$$

$$E[(X_{i,t-s} - X_{i,t-s-1}) \cdot (\eta_i + \varepsilon_{i,t})] = 0 \quad \text{for } s = 1 \quad (11)$$

In addition, the Arelano-Bond estimator has been adjusted for a short T and a large N (problem (iv)). If the time period, T is long, the bias dynamic panel results in insignificance. Whereas if N is small, cluster-robust standard errors and Arellano-Bond autocorrelation tests are likely to be unreliable (Rodman, D. 2009).

A consistent GMM estimator relies on two specification tests. Therefore, the two (2) test specifications used are (i) statistical test J by Hansen (1982) to test overidentifying restrictions in GMM. The null hypothesis is valid for all instruments with a moment of zero expectation then the statistic J is distributed X² with degrees of freedom equal to overidentifying restrictions. The second test is to test whether there exists a second stage of serial correlation in terms of error for the first differentiation of equation (3) where the hypotheses used are as follows:

H_0 = the error terms have no second degree of serial correlation in the first differentiation.

H_1 = the error terms have a second degree of serial correlation in the first differentiation.

Thus, the failure to reject both null hypotheses in diagnostic tests indicates the estimated model is accurate.

Moreover, Arellano, M., & Bond, S. (1991) stated that GMM estimators are usually used in two stages namely stage one and two for GMM Difference and GMM System where Windmeijer (2005) explained that stage one estimators use a weighting matrix that does not depend on the estimated parameters while the second -order GMM estimator uses a weighted optimal matrix in which the weighting of the moment conditions is obtained from a consistent covariance matrix estimate. This weighted matrix is formed using consistent initial estimates for the parameters in the model. Both the estimators namely GMM System and GMM Difference are suitable using linear GMM (Roodman, 2009).

Differenced GMM was estimated after the first differentiation was made on the data to overcome the fixed effect. While the GMM System estimates both the equations at the level (equations before the first differentiation) and the equations after the first differentiation simultaneously. This study uses the moment conditions on equations (4)-(11) and further uses estimates in the second stage to reduce the instrument dimensions of the matrix variables.

Results and Discussion

Preliminary analysis found that there was a bivariate relationship between English language proficiency, financial development and economic growth. Figure 1 shows the existence of a positive correlation between the distribution of GDP data with financial development. Based on the distribu-

tion of data also gives the impression that financial development can contribute to economic growth. While Figure 2 is a plot of the distribution of GDP data and the level of English proficiency which shows a positive increasing trend. Figure 3 is a plot of the distribution of financial development data and the level of English proficiency illustrating the parallel distribution of financial development.

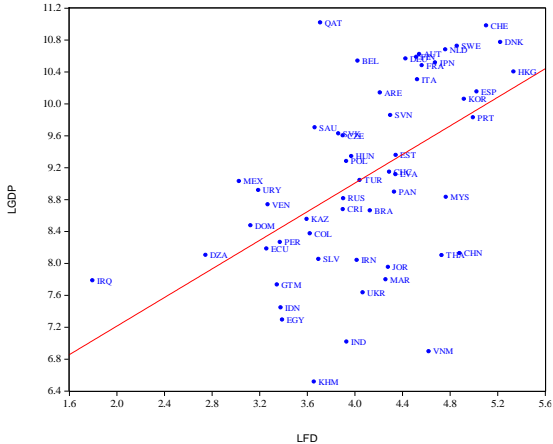


Figure 1. Distribution Plot of GDP data (*economic growth*) and FD (*financial development*)

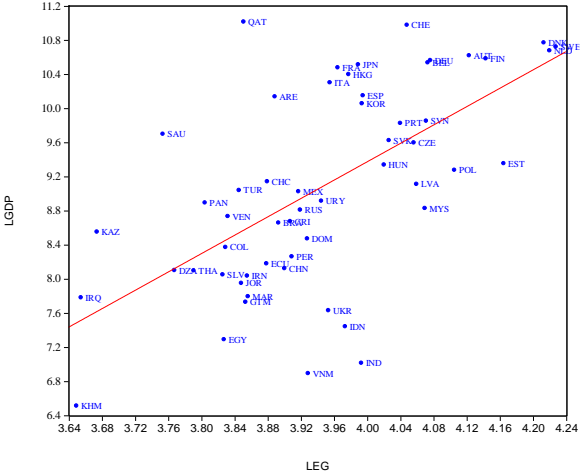


Figure 2. Distribution Plot of GDP data (*economic growth*) and EG (*English proficiency*)

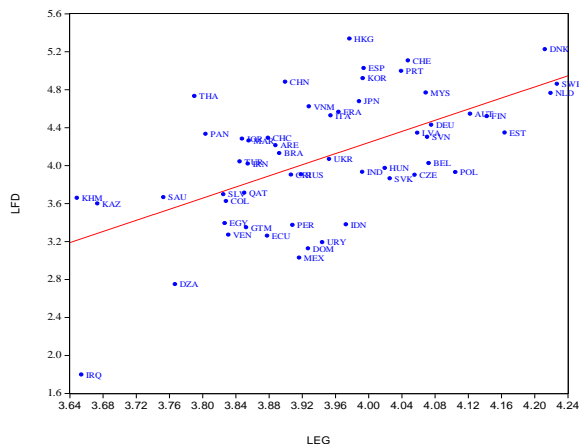


Figure 3. Distribution Plot of FD (*financial development*) dan EG (*English proficiency*)

Based on the research methods already described, the results of the empirical study are shown in tables 1 and 2. Table 1 shows the preliminary analysis of the effect of English proficiency, financial development on economic growth based on GMM analysis. GMM Difference results for step 1 and step 2 show that English proficiency does not have a direct effect on economic growth because the coefficient of English proficiency is not significant on economic growth however, the effect of financial development is significant at 5% but negative coefficient value indicates development high finances can have a negative impact on economic growth. This is in line with the findings of the study [Cecchetti & Kharroubi, (2012); Arcand, Berkes, & Panizza, (2012); Law & Singh (2014)] who found that too high an increase in the financial sector will slow down overall economic growth. However, the results

of the GMM system for steps 1 and 2 show that both coefficients are not significant.

Table 1. Results Model 1 of GMM (DV= Lgdp (*without Interaction*))

Model 1	GMM Difference		GMM System	
	Step 1	Step 2	Step 1	Step 2
Lgdp	0.8219 (0.000)	0.7514 (0.000)	0.9919 (0.00)	0.9913 (0.00)
Lfd	-0.0619 (0.016)	-0.04260 (0.033)	-0.00583 (0.174)	-0.00655 (0.125)
Leg	0.05078 (0.132)	-.00080 (0.797)	0.01933 (0.468)	0.0233 (0.352)
Ltrade	-0.0769 (0.108)	-0.1252 (0.001)	0.00449 (0.512)	0.00673 (0.442)
Lgovexp	0.05971 (0.159)	0.0288 (0.278)	-0.0210 (0.024)	-0.0193 (0.054)
Linf	-0.00016 (0.957)	-0.00166 (0.228)	-0.00383 (0.383)	-0.00342 (0.470)
lpop	-0.01463 (0.008)	-0.0220 (0.000)	-0.00441 (0.142)	-0.00475 (0.081)
Linvst	0.04873 (0.068)	0.03376 (0.015)	0.0256 (0.034)	0.0246 (0.055)
AR(2) <i>p-value</i>	0.012	0.108	0.157	0.166
Hansen <i>p-value</i>		0.057	0.875	0.875

Note: *coef & p-value: ldgp(GDP) lfd(financial development), leg(English), ltrade(trade), lgovexp(government expenditure), linf(inflation), lpop(population growth).*

Table 2 shows the results of the study based on the specifications of the interaction between financial development and English language proficiency (FDEG = IFD*IEG) for GMM Difference and System. The results showed that there was a significant correlation interaction at 5% and positive for financial development and English language proficiency at steps 1 and 2 of GMM Difference. This proves that the impact of English language proficiency on growth increases in line with the increase in financial development in a country. This supports the findings of the study of Lazarro & Medalla (2004) who stated that language proficiency further facilitates transactions and costs. However, the results at the GMM System level are not significant. Based on Hansen test shows that on GMM Difference in step 2 shows the model is robust. For other variables (control variable) shows only investments that have a positive and significant effect.

Table 2. Results Model 2 of GMM (DV= Lgdp (*with Interaction*))

Model 2 (interaction)				
	GMM Difference		GMM System	
	Step 1	Step 2	Step 1	Step 2
Lgdp	0.85233 (0.00)	0.8213 (0.000)	0.9902 (0.000)	0.9893 (0.000)
Lfd	-0.6452 (0.002)	-0.5147 (0.002)	-0.06918 (0.429)	-0.4989 (0.666)
Leg	-0.5041 (0.010)	-44688 (0.001)	-0.0453 (0.639)	-0.0184 (0.882)
Fd*Eg	0.1498 (0.004)	0.12131 (0.002)	0.01650 (0.463)	0.0115 (0.699)
Ltrade	-0.0585 (0.215)	-0.8443 (0.019)	0.0044 (0.174)	0.0066 (0.262)
Igovexp	0.0648 (0.118)	0.01995 (0.494)	-0.0210 (0.024)	-0.0174 (0.020)
Linf	0.00036 (0.902)	0.00006 (0.971)	-0.00383 (0.383)	-0.00323 (0.477)
lpop	-0.0137 (0.009)	-0.01868 (0.000)	-0.0044 (0.142)	-0.0051 (0.053)
livst	0.05524 (0.034)	0.36144 (0.021)	0.0256 (0.034)	0.0245 (0.056)
AR(2) <i>p-value</i>	0.030	0.065	0.157	0.166
Hansen <i>p-value</i>		0.129	0.875	0.875

Note: coef & p-value: ldgp(GDP) lfd(financial development), leg(English), ltrade(trade), Igovexp(government expenditure), linf(inflation), lpop(population growth).

Conclusion

Based on the analysis of dynamic estimation methods of panel data for 55 countries from 2010-2019, this study proved that in general the influence of English language proficiency as well as financial development has a significant impact on economic growth. Therefore, the findings of this study suggest that in achieving high and competitive economic growth in this era of globalization, the role of interaction variable is vital to consider a reform that would strengthen the financial development and stimulate economic growth as well as development. Based on previous study stated that economic development itself spawns financial development, while economic and financial developments are positively correlated this does not achieved the positive impact. Rajan and Zingales (1998) provide convincing evidence that financial

development is important for economic development by examining if industrial sectors that are more dependent on external finance grow relatively faster in countries with a high level of development. This question involves interactions between financial development and dependency on external finance. Since the publication of Rajan and Zingales' study, the estimation of models with interaction effects have become common in applied economics.

The results of this study also proved that interaction between financial development and English proficiency is an important element in stimulate the impact to economic growth. It can be applied in the field of information dissemination and should be given special attention for developing countries. Today, the use of online transaction is one of the factors that make the element of English proficiency become more vital especially as a tool of communication to builds economics relationships and cultural ties. More over the knowledge of more than one language especially English language as a business language makes more efficient and skillful in many ways. The ultimate function of language is to communicate any information, so with this function will also make all the digital transaction become more efficient. On the other hands, this study suggest that the effect on financial development and English proficiency will boost the economic growth with enhances the access to capital can makes easy for development of entrepreneurial skill and allowing them to learn higher and receive quality education particularly in the areas of science and technology which mostly use English language as a second language. This element is vital to achieve sustainable economic goal.

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