Surprising Findings Impact of Financial Literacy on Human Development in Southeast Asia

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Abstract

Our study looks into how financial literacy affects the growth of human resources in Southeast Asia. Using the composite index of four elements of financial inclusion, we examine the effect of financial literacy on human development (ATM, number of borrowers, commercial bank branches, depositors) employing the PCA approach, economic growth, total remittance percent of GDP, the consumer price index (CPI), and the total net inflow of foreign direct investment percent of GDP (FDI). The population in our study was all countries in the Southeast Asian region. Where we use purposive sampling by selecting 10 countries that are members of the ASEAN organization. The selection of the 10 countries that are members of ASEAN is intended to facilitate research and investigation. This study uses secondary data from the world bank and United Nations Development (UNDP). The data period used in this study is from 2000 to 2020. We investigate 10 ASEAN member countries using pooled ordinary least squares (POLS) and we employ linear interpolation to close data gaps. To address multicollinearity in the multiple regression in our model, we performed factor variance inflation (VIF) testing. We found that the total percent of remittances from GDP contributes the greatest influence of all variables. This finding is quite surprising to us because the total remittances percent of GDP has a significant influence and becomes an important component in human resource development in Southeast Asia. Domestic and foreign remittances are surprisingly important indicators of human development in Southeast Asia. In addition to the percentage of total remittances from GDP, financial inclusion, economic growth, and the consumer price index significantly impact human development in Southeast Asia. What we didn't expect, however, found that FDI in Southeast Asia had the smallest significant impact favorably on human development.

Keywords: GDP, FDI, CPI, Financial Literacy , Human Development, Southeast Asia
JEL Classification: C01,E44, E51

Received: March 4,2023 Accepted: April 4,2023
DOI : 10.54204/TAJI/Vol912023012

Introduction

Education and training in various stages of life, in terms of individual development at the social, economic, and professional levels is an important factors in economic development (Astuti & Prabowo, 2021; Sulisnaningrum, 2021). The results in the field of education are actually the result of the partnership of the various stakeholders involved, especially the government

(Widarni & Wilantari, 2021; Puspaningtyas & Harnani, 2021). Human development is important in driving the economy in Southeast Asia (Lee, Wong, Intarakumnerd, & Limapornvanich, 2020). In addition to the human factor, another thing that is no less important is the financial literacy factor (Widarni, Irawan, Harnani, Rusminingsih, & Alim, 2022). The development of financial literacy has an impact on the people's economy which is the object of human development (Tuffour, Amoako, & Amartey, 2022). When the people's economy improves and the people become more prosperous, the people are increasingly able to invest in human capital for themselves so that financial literacy has the potential to contribute and contribute to human development in Southeast Asia (Lopus, Amidjono, & Grimes, 2019).

MSMEs are a sector that is directly related to the people in Southeast Asia and MSMEs are certainly a significant sector of people's income in Southeast Asia (Félix & Belo, 2019). Southeast Asia with various characteristics from each country in the Southeast Asia region has the MSME sector which is the foundation of the people's economic potential in the Southeast Asian region. Of course, MSMEs play a very significant role in the economy in the Southeast Asian region (Mavrodieva, Budiarti, Yu, Pasha, & Shaw, 2019).

Access, utilization, and quality of financial goods and services provided by the financial system to people and MSMEs are the three elements of financial inclusion. An analysis of each of these dimensions helps us to evaluate the types of barriers that SMEs and startups face in terms of financing. Specifically, access refers to the extent to which new or underserved consumers can obtain appropriate financial products and services at affordable prices. In the case of MSMEs and companies, it appears that the obstacles they face are related to high financial costs, lack of collateral, redundant documents or very extensive processes, and a low number of approved loans (Tuffour, Amoako, & Amartey, 2022). The utilization dimension, on the other hand, speaks about the regularity and frequency of using financial services in a pertinent manner. In the case of MSMEs, they face usage barriers related to the lack of financial education from the owners and managers. Similarly, the quality dimension refers to the level of satisfaction of customer needs with the services offered by the market (Sahela, Susanti, & Adjie, 2021). The main obstacles faced by MSMEs related to quality are related to the absence of products designed with their needs in mind, as well as inadequate products for long-term planning and financing (Chien, Ngo, Hsu, Chau, & Iram, 2021).

The nature of MSMEs and early-stage businesses demands support schemes to promote their business, logistics, and financial capacities (Widarni & Bawono, 2022). Financial literacy is key, as they represent the backbone of the operational sustainability of nascent business and commercial positions (Prabowo, Sulisnaningrum, & Harnani, 2021).

The health or financial well-being of an MSME, beyond the profitability of its business model, is also determined by its capabilities at the managerial level (Juergensen, Guimón, & Narula, 2020). The ability of MSMEs to survive in the era of COVID-19, of course, cannot be separated from the quality of humans who manage these MSME businesses (Agustina, Butarbutar, Sherly, & Karsudjono, 2021). Both the MSME sector and large companies both contribute to and are influenced by GDP and economic growth so that economic growth indicators reflect the growth of the business sector, both MSMEs and large companies (Chandrarin, Sanusi, Imron, & Yuniarti, 2018). Economic growth cannot be separated from consumption factors, and the CPI is one of the indicators in estimating domestic consumption (Shang, Han, Gozgor, Mahalik, & Sahoo, 2022). The financial sector does not only consist of sources of debt as a source of capital, but also sources of incoming investment so that net inflows from FDI are a good indicator in measuring financial literacy outside the banking sector (Basheer, Ahmad, & Hassan, 2019).

ATMs are playing an increasingly important role in the ongoing global effort to eradicate poverty by accelerating the process of financial inclusion (Hasan, Yajuan, & Khan, 2022). However, the push for financial inclusion will also depend on a diverse mix of technologies and channels for service delivery. Financial inclusion and universal access to financial services that digital and mobile technologies will define the future of banking services at the expense of more traditional physical channels (Mhlanga, 2020).
Two-thirds of the world's population is dependent on, and likely will continue to be mostly on physical currency. This is basically because the value and authenticity of cash are the results of centuries of use and deep recognition of the importance of paper money in everyday life (Obadha, Colbourn, & Seal, 2020). Even though digital technology is becoming increasingly massive in the financial realm, some consumers are increasingly skeptical of the much-touted benefits of fintech, most of which appear to be trying to maximize provider profits rather than increasing utility or facilitating access to payments for users (Jain, & Gabor, 2020). The development of digital technology has an impact on financial inclusion and human capital development (Priyanto, Widarni, & Bawono, 2022)
Widarni & Bawono (2021), concluded that human capital investment has a long-term impact on economic growth. However, Tuffour, Amoako, & Amartey (2022), Financial literacy impact on human development is still a matter of debate. Ibrahim & Sare (2018), concluded that financial literacy has an impact on human capital. The findings of Thomas & Spataro, (2018) support the opinions and conclusions of Ibrahim & Sare (2018). However, a different opinion was put forward by Preston & Wright, (2019) which concluded that financial literacy is a form of human capital.
The debate on the relationship between financial literacy and human capital needs further study (Goyal & Kumar, 2021). Our study looks into how financial literacy affects the growth of human resources in Southeast Asia. Using the composite index of four elements of financial inclusion, we examine the effect of financial literacy on human development (ATM, number of borrowers, commercial bank branches, depositors) employing the PCA approach, economic growth, the GDP share of total remittances, the consumer price index (CPI), and the total net inflow of foreign direct investment percent of GDP (FDI).

Literature Review

ATMs have played a fundamental role in the financial inclusion revolution (Rashid, 2020). Promoting an environment where the choice of payment methods is limited, as many humanitarian organizations do, is not only discriminatory in many ways, but also counterproductive insofar as it encourages financial exclusion (Bhagat & Roderick, 2020). Humanitarian organizations, central banks, and commercial financial institutions must join forces to enforce diversity and choice when ATMs co-exist with other forms of digital payment (Zimmermann, 2019 ; Choudhary & Kumar, 2018).
Demonetization efforts by the countries of the world accompanied by the use of cash around the world are not decreasing but increasing (Yadav, 2019). Cash in circulation as a percentage of GDP is increasing at a rate that far exceeds year-on-year inflation worldwide in the post-covid 19 (Zhao, 2020), despite the fact that the proportion of payments made in cash is decreasing in developing economies due to the spectrum of available payment options (Benami & Carter, 2021).
Perhaps more importantly, promoting an environment where payment options are limited and consumers are separated by their ability to make digital choices is discriminatory in many ways, especially when the culture of finance is low, infrastructure is poor, and electricity supply is

insufficient (Shultz, Hoek, Lee, Leong, Srinivasan, Viswanathan, & Wertenbroch, 2022). Because of all these limitations, cash is an accessible, reliable and inexpensive technology, whose efficiency and usefulness have been repeatedly demonstrated in times of crisis (Piroșcă, Șerban-Oprescu, Badea, Stanef-Puică, & Valdebenito, 2021). If the option to withdraw cash is removed, everyone except the electronic payment provider will be affected. In effect, this means that those who stand for financial inclusion are, intentionally or not, supporting the exclusion of the poorest sectors of society by preventing them from using their preferred and often cash-only means of payment (Hamed & El-Deeb, 2020).

ATMs will become an increasingly important point of contact in the financial inclusion revolution. When it comes to services, next-generation ATMs can reliably perform more operations than ever before, using a variety of touch interfaces (Hasan, Yajuan, & Khan, 2022). Without a doubt, increasing financial inclusion is a huge challenge. In part, this is due to local culture and consumer attitudes, but much to do with the practical and logistical difficulties of providing banking services in low-income countries (Vasile, Panait, & Apostu, 2021).

The impact of digital and mobile technology on the financial services industry is undeniable, but innovations in self-service ATM channels and the unique characteristics of cash will be just as important in efforts for greater financial inclusion (Mehdiabadi, Tabatabeinasab, Spulbar, Karbassi Yazdi, & Birau, 2020). Together, the payments industry and its proponents should strive to be characterized by diversity and choice, where ATMs coexist with other forms of digital payment solutions (Golubić, 2019). Financial literacy is certainly related to human development (Tuffour, Amoako, & Amartey, 2022). Financial inclusion has an impact on increasing human capital which is an important factor in human development (Sima, Gheorghe, Subić, & Nancu, 2020). Financial literacy provides awareness of the importance of financial management by the community so that people who work and manage small businesses can wisely use their money and can wisely develop human capital that is beneficial for future prosperity (Widarni, & Bawono, 2022).

H1. Financial inclusion has an impact on Human development

H2. Financial inclusion has an impact on Human development through the real sector

Research Method

The population in our study was all countries in the Southeast Asian region. Where we use purposive sampling by selecting 10 countries that are members of the ASEAN organization. The selection of the 10 countries that are members of ASEAN is intended to facilitate research and investigation. This study uses secondary data from the world bank and United Nations Development (UNDP). The data period used in this study is from 2000 to 2020. We investigate 10 ASEAN member countries using pooled ordinary least squares (POLS) and we employ linear interpolation to address data gaps. To address multicollinearity in the multiple regression in our model, we performed factor variance inflation (VIF) testing. To bridge financial literacy to the final equation that we used, we developed the financial literacy equation adopting the research of Le, Chuc, & Taghizadeh-Hesary, (2019) using Principal component analysis (PCA) method with the following equation:

$Finc_{it} = \beta_1 ATM_{it} + \beta_2 Tbn_{it} + \beta_3 Tcb_{it} + \beta_4 Td_{it}$ (Equation 1)

Where,

$Finc = f(ATM, Tbn, Tcb, Td)$ (Equation 2)

Finc is financial inclusion or financial literacy. ATM density is defined as the number of ATMs per 100,000 adults. Tbn is the ratio of commercial bank borrowers per every 1000 adult citizens. Tcb is the ratio of commercial bank branches to adult residents per 100,000. Td is the number of depositors in commercial banks per 1000 per adult population. Where i is the observed i state and t is the time series over time. B is the amount of influence on financial inclusion. In this study, there is a comparison between the financial sector and human capital. This study adopts the research of Widarni & Bawono (2021) by including the financial sector in the variables that affect human capital where the human capital variable used in this study is the human development index (HDI). The equation used in the estimation uses equation 1 as a financial literacy variable and is developed with the following equation:

$Hdi_{it} = \beta_1 Finc_{it} + \beta_2 GDP_{it} + \beta_3 R_{it} + \beta_4 Cpi_{it} + \beta_4 Fdi_{it}$ (Equation 3)

Hdi is the human development index. Finc is financial inclusion which is described in equations 1 and 2. GDP is the total national production growth of each country observed in one calculation period. R is the total remittance percent of GDP. Cpi is the consumer price index, and the amount of net foreign direct investment as a percentage of GDP is known as FDI. We include a description of the variables in table 1 to give a full picture of the variables we employ.

Table 1. The Variables' Description

Variable	Description	Source	Unit Analysis
Hdi	Human development index	UNDP	Index
Finc	The composite index of four components of financial inclusion (ATM, number of borrowers, commercial bank branches, depositors) using the PCA method.	World Bank	Index
ATM	Automated teller machine (ATM) density is the number of ATMs per 100,000 adults.	World Bank	Index
Tbn	the ratio of commercial bank debtors per every 1000 adult citizens.	World Bank	Index
Tcb	the ratio of commercial bank branches to adult inhabitants per 100,000	World Bank	Index
Td	the ratio of commercial bank depositors to the adult population of 1000	World Bank	Index
GDP	the total national production growth of each country observed in one calculation period	World Bank	Percent
R	total remittance percent of GDP	World Bank	Percent
Cpi	the consumer price index	World Bank	Index
Fdi	percent of GDP for all net inflows of foreign direct investment	World Bank	Percent

Results and Discussion

Before doing the estimation, we present descriptive statistics of each variable that we use in table 2.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Min	Max	Standart Dev
Hdi	200	0.599	0.381	0.721	0.112
Finc	200	0.727	0.521	0.892	0.121
ATM	200	0.519	0.312	0.712	0.089
Tbn	200	0.112	0.072	0.189	0.002
Tcb	200	0.399	0.129	0.501	0.021
Td	200	0.122	0.038	0.176	0.012
GDP	200	0.891	0.512	0.927	0.113
R	200	0.792	0.321	0.901	0.104
Cpi	200	4.011	2.122	5.129	0.921
Fdi	200	0.499	0.211	0.771	0.058

We have made observations for the period 2000 to 2020 in 10 countries with a total of 200 observations. Where the average HDI in the research object is 0.599 with a standard deviation of 0.112, with a fairly good financial literacy with an average of 0.727 with a standard deviation 0.121. From the results of descriptive statistics, it can be seen that human and financial development in Southeast Asia is quite potential. To address multicollinearity in the multiple regression in our model, we performed factor variance inflation (VIF) testing. The results of the variance inflation factor (VIF) test are presented in table 3.

Table 3. Variance Inflation Factor (VIF)

Variable	VIF	1/VIF	VIF	1/VIF
Hdi	1.79	0.49		
Finc			1.29	0.69
GDP	5.71	0.19	1.49	0.59
R	2.89	0.31	1.06	0.76
Cpi	2.77	0.28	2.29	0.39
Fdi	2.39	0.41	1.19	0.89
Mean VIF	2.49		1.49	

For the two suggested models, Hdi and Finc, we include VIF values. According to table 3, there is no multicollinearity issue because all coefficients have VIF values below the crucial range of 10. The two models, which took the control factors into account, had a mean VIF of 2.49 and 1.49, respectively. After doing the VIF test and there were no multicollinearity problems, we estimated the POLS which is presented in table 4.

Table 4. POLS Estimation

	Coeff,	T-Stats.
Finc	0.038**	2.29
GDP	0.029**	2.24
R	0.041***	4.49
Cpi	0.036**	2.18
Fdi	0.019*	0.091
Adjusted R squared	0.749	

From the POLS estimation results, all variables have a significant positive effect on the Human development index. With the greatest influence by total remittance percent of GDP. This finding is quite surprising to us because the total remittance percent of GDP has a significant influence and becomes an important component in the development of human capital in Southeast Asia. Remittances in and out of the country are surprisingly important indicators of human development in Southeast Asia. In addition to the percentage of total remittances from GDP, financial inclusion, economic growth, and the consumer price index significantly impact human development in Southeast Asia. What we didn't expect, however, found that FDI in Southeast Asia had the smallest significant impact favorably on human development.

Conclusion

The total percent of remittances from GDP contributes the greatest influence of all variables. This finding is quite surprising to us because the total remittances percent of GDP has a significant influence and becomes an important component in human resource development in Southeast Asia. Domestic and foreign remittances are surprisingly important indicators of human development in Southeast Asia. In addition to the percentage of total remittances from GDP, financial inclusion, economic growth, and the consumer price index significantly impact human development in Southeast Asia. What we didn't expect, however, found that FDI in Southeast Asia had the smallest significant impact favorably on human development.

Research Limitation

Our research is limited by our observation area, namely 10 ASEAN member countries and the research period from 2000 to 2020. Our research is also limited by the focus of our research using macroeconomic variables and limited to data available on the world bank and United Nations Development.

Policy Implications

Our research demonstrates that financial literacy affects a nation's ability to build its human capital. Our surprising finding that remittance has a significant impact on human development is our surprising finding which can contribute to policies to facilitate domestic and foreign transactions so that human development also increases.

Directions For Future Research

We recommend the microfinance institution variable as a direction for future study in the Southeast Asian area since we haven't looked into it and will continue to monitor it. We only do macroeconomic research so that future research can be more in-depth in the micro-economic sector.

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