

Information and Communication Technology Infrastructure in Public-Private Partnership In Financial Technology In Indonesia

Meinarti Puspaningtyas¹

¹STIE Jaya Negara Tamansiswa Malang, Indonesia

Abstract

We collect reports from the Asian development bank (adb.org) related to information and communication technology infrastructure development projects with a public-private partnership system. For fintech development data, we use secondary data from the OJK or the Indonesian financial data authority. We process data by matching the timing of each project and the impact on the development of fintech in Indonesia including financial literacy which also uses sources from the OJK. The period of the year in data collection is 10 years, namely from 2010 to 2020 with a monthly data period so that there are 120 data periods in the calculation for each variable (12 months per year x 10 years). We use the ARDL model to understand the causal relationship of each variable. We found that in the long term information and communication technology infrastructure development projects with a public-private partnership system (ITCD) have a significant positive relationship to financial literacy in Indonesia. However, the short term is not significant. This demonstrates that the long-term effects of infrastructure development may be felt after the project is done. Fintech development (FD), in contrast to ITCD, does not have a long-term beneficial influence on financial literacy in Indonesia. However, there will be a major beneficial influence in the near run. In both the long and medium-term, the Indonesian government's infrastructure budget for information and communication technology infrastructure development (IFB) has a substantial influence on financial literacy in Indonesia. Similarly, both in the short and long term, the public-private partnership budget ratio (PPPR) has a strong beneficial influence on financial literacy in Indonesia.

Keywords: ITC, Infrastructure Development, Public-Private Partnership, Indonesia

JEL Classification Code : C10,G10,G18,G23

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Introduction

Information and communication technology can no longer be separated from the economic field, especially in the financial sector, which is increasingly adopting information and communication technology in almost every financial sector in Indonesia. In addition to private finance, government finance or public finance has also adopted information systems and technology (Muthukannan, Tan, Chian, & Leong, 2021).

The adoption of information and communication systems in Indonesia is increasingly massive with the emergence of various fields of financial services based on information and communication technology, both in the form of websites and mobile phone applications. The adoption of increasingly developing information systems and technology in public finances certainly requires the development of internet services based on investments in information and communication technology infrastructure in Indonesia (WIDARNI & BAWONO, 2021).

The Indonesian government budget is the main source of financing for infrastructure financing in Indonesia (Hidayanti & Prabowo, 2021). However, the private sector can also be involved in development in Indonesia with a public-private partnership system (Suryono, Budi, & Purwandari, 2021). Public-private partnerships in Indonesia are not new, but the optimization of this collaboration process still needs to be researched so that it can become a reference in developing a more optimal public-private partnership system in Indonesia (Gultom, 2020).

Infrastructure development via a partnership arrangement between the private sector and government is one strategy to optimize development with the available budget, resulting in more optimum economic growth through infrastructure development (Al-Omari & Hamid, 2021). Infrastructure based on digital technology and information and communication systems is becoming larger, and the private sector's participation in infrastructure development, both independently and in conjunction with the Indonesian government, is growing (Ren, Li, Ding, Zhang, Boje, & Zhang, 2019).

This study explores the effectiveness and optimization of infrastructure financing in the field of information and communication technology with a public-private partnership system in Indonesia.

Research Method

We collect reports from the Asian development bank (adb.org) related to information and communication technology infrastructure development projects with a public-private partnership system. For fintech development data, we use secondary data from the OJK or the Indonesian financial data authority. We process data by matching the timing of each project and the impact on the development of fintech in Indonesia including financial literacy which also uses sources from the OJK. The period of the year in data collection is 10 years, namely from 2010 to 2020 with a monthly data period so that there are 120 data periods in the calculation for each variable (12 months per year x 10 years). We use the ARDL model to understand the causal relationship of each variable with the econometric model as follows:

$$FL_t = \beta_0 + \beta_1 ITCD_t + \beta_2 FD_t + \beta_3 IFB_t + \beta_4 PPPR_t + e_t$$

Where, FL is financial literacy in Indonesia. ITCD is information and communication technology infrastructure development projects with a public-private partnership system. FD is fintech development. IFB is Indonesian government infrastructure budget for information and communication technology infrastructure development. PPPR is public-private partnership budget ratio, and e is error term.

Result and Discussion

The following are the results of the ARDL test to understand the causal relationship of each variable :

Regressor	Dependent Variable FL			
	Coef.	SE	t-Ratio	Prob
Long Run Estimation				
ITCD	0.1372	0.0577	2.3311	0.0003
FD	0.1731	0.0613	0.1112	0.1926
IFB	0.1422	0.0659	2.2217	0.0007
PPPR	0.1331	0.0837	1.6698	0.0007
Short Run Estimation				
ITCD	0.1821	0.0516	0.1217	0.1813
FD	0.1772	0.0721	2.3412	0.0009
IFB	0.1671	0.0802	1.7182	0.0008
PPPR	0.1331	0.0991	1.6691	0.0711

According to the estimated findings, information and communication technology infrastructure development projects with a public-private partnership system (ITCD) have a substantial beneficial link with financial literacy in Indonesia in the long run. The short term, on the other hand, is insignificant. This demonstrates that the long-term effects of infrastructure development may be felt after the project is done. Fintech development (FD), in contrast to ITCD, does not have a long-term beneficial influence on financial literacy in Indonesia. However, there will be a major beneficial influence in the near run. In both the long and medium-term, the Indonesian government's infrastructure budget for information and communication technology infrastructure development (IFB) has a substantial influence on financial literacy in Indonesia. Similarly, both in the short and long term, the public-private partnership budget ratio (PPPR) has a strong beneficial influence on financial literacy in Indonesia.

Conclusion

In the long term information and communication technology infrastructure development projects with a public-private partnership system (ITCD) have a significant positive relationship to financial literacy in Indonesia. However, the short term is not significant. This demonstrates that the long-term effects of infrastructure development may be felt after the project is done. Fintech development (FD), in contrast to ITCD, does not have a long-term beneficial influence on financial literacy in Indonesia. However, there will be a major beneficial influence in the near run. In both the long and medium-term, the Indonesian government's infrastructure budget for information and communication technology infrastructure development (IFB) has a substantial influence on financial literacy in Indonesia. Similarly, both in the short and long term, the public-private partnership budget ratio (PPPR) has a strong beneficial influence on financial literacy in Indonesia.

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