

Environmental Factors Affecting the Acceleration of Financial Technology (Fintech) Adoption by SMEs in the East Java Region

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ABSTRACT

Purpose – This study aimed to help define the environmental factors affecting the acceleration of FinTech adoption by SMEs in the East Java Region. **Design/methodology/approach** – An empirical study of TOE Framework focused on environmental factors using the data from 402 respondents of SMEs Owners and Managers who have already implemented OVO e-wallet in their business. Primary data was analyzed using SEM-PLS. **Finding** – The high competition in industry has no connection with the acceleration of FinTech adoption. Environmental variables conclude the prediction 75,8% of FinTech adoption. The most interesting finding among the three factors in environmental factors is only the support from government and vendor that significantly accelerate the fintech adoption by SMEs in the East Java Region. The finding suggested that vendors must actively offer the e-wallet payment services and provide training to merchants. Government support has also shown to be a significant antecedent toward consumers’ intention to use the e-wallet payment services.

Keywords: Financial technology, environmental factors, acceleration of the adoption.

1. INTRODUCTION

Internet has opened up many new opportunities in the business and reduce cost (Yannopoulos, 2011). We can use internet as a tool for exchanging information such as e-mail and also for doing transaction by e-shop, e-commerce, e-marketplace, e-procurement, crowdsourcing and etc. The Indonesian Internet Service Providers Association (APJII) release the data that around 150 millions people had been connected to the internet during 2019.



Figure 1. Indonesia Digital 2019

Based on the regional mapping in Indonesia, 58.08% of internet users are located in Java. The other are spread across Sumatra, Kalimantan, Bali and Nusa Tenggara, Sulawesi, Maluku and Papua. The penetration of the internet usage and digital technology in Java particularly in East Java Region is huge. Through the internet and

applications on smartphones, customers can make transactions easily and quickly (Octavianus et al., 2018). Nowadays, companies are starting to utilize the internet in business process and information exchanges. The use of technology and social media is a must in doing business especially to get market share among millennials. In the era of digitization, the internet and technology has impacts in all aspects of human life. Daily activities cannot be separated from the use of gadgets and smartphones (Ahn, 2011).

Technology-based electronic payments, known as FinTech, are not only limited to buying and selling online on the internet, but can also be expanded as an effort to improve services, information collaborations with business partners who carry out the transactions within organization (Christianto, 2009). Activities that can be carried out range from buying and selling online (e-commerce), digital social interaction, electronic books, electronic newspaper, public transportation (bus, taxis and motorcycles) and tourism-support services.

Fintech is a collaboration between the financial services industry and the technology which has been successfully in creating a new business model. According to Bank Indonesia, the term FinTech is a form of innovation in the financial services industry that joins technology that had succeeded in changing business model from conventional to moderate (www.bi.go.id).

The growth of FinTech in Indonesia is supported by the Bank of Indonesia through the Non-Cash National Movements program. This program was held to educate and

disseminate to the public about the use of non-cash financial instruments or electronic money directly.

Fintech emerged along with changes in lifestyle which are currently dominated by the use of technology and the desire of the fast and easy transaction. A new lifestyle has emerged, namely cashless society (Worthington, 1995). Fintech and the entrepreneurs of e-commerce and startup companies (SMEs) are interrelated and can become major players in the digital economy.

The ease of online transaction via internet and digital technology has opened opportunities for SMEs in East Java Region by adopting e-wallet. Based on Q2 2019 data from App Annie, the top-five e-wallet applications with the most active monthly users are still occupied by local players, namely, GoPay, OVO, Dana, LinkAja, and Jenius. Similar to the number of application downloads, the local e-wallet is managed to occupy the top-five with GoPay at the first rank, OVO in the second, followed by Dana, LinkAja, and iSaku (Rachmatunissa, 2019).

The benefits of fintech have begun to be experienced by consumers, industry, and the economy. Consumers are made easier in making transaction, having more and more product choices, and the prices are getting cheaper. The industry is also given the ease in getting info and transaction. In the economy, the benefits obtained include increasing the economic growth, opening up the employment, as well as increasing the nation's GDP. From the FSA data for 2018, FinTech has contributed to Indonesia's GDP of Rp.26 Trillions and has an investment of Rp.5,7 Trillions (www.ojk.go.id).

The adoption of fintech especially affected by environmental factors requires a solid theoretical basis to help strengthen the conceptual and empirical foundation. Therefore, research on SMEs is considered very important for academic and business practitioners in Indonesia.

This research will help SMEs define the environmental factors affecting the acceleration of FinTech adoption by SMEs in the East Java Region. Specifically, this study addresses three questions :

- Q1. Does environmental factors affect the acceleration of FinTech adoption by SMEs in The East Java Region?
- Q2. Which environmental factor that has significant effect on the acceleration of FinTech adoption by SMEs in The East Java Region?
- Q3. What strategies that can be used to accelerate the FinTech adoption by SMEs in The East Java Region?

2. LITERATURE REVIEW

2.1. Fintech Definition

Fintech is the applications, processes, products or business models in the financial services industry, composed of one or more complementary financial services and provided as an end-to-end process via the internet (Lenny, 2017).

The term 'FinTech' has appeared recently in business journals to describe the disruptive challenge to the financial sector in the introduction of faster, cheaper and human-centred financial services (Varga, 2017).

Indonesia is now a country with the market's largest segment for FinTech. With the growth of middle-class, Indonesia is like a fertile land for FinTech market especially for non-cash financial instruments or electronic money directly.

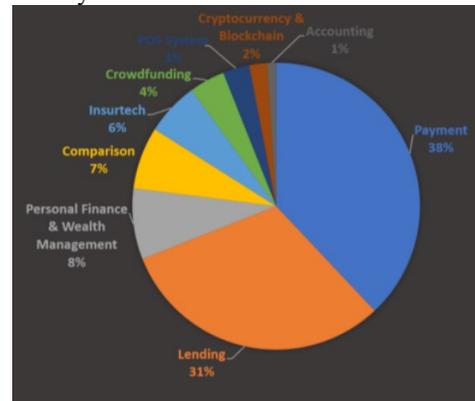


Figure 2: FinTech category distribution in Indonesia 2019

2.2. Fintech Acceleration Factors

Fintech is already having a great impact on the most important industries in the world, but it is still poorly understood how the sector emerged. Two different but complementary evolutionary approaches can help with the understanding on how fintech sector has gained a market presence over the last couple of years, and what the drivers behind the innovations were in the financial sector (Varga, 2017). Figure 3 will explain the technology adaption in financial Industry

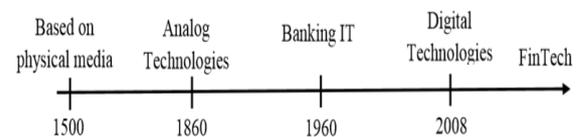


Figure 3. Technology Adaption in Financial Industry

Telecommunications infrastructure has been installed in all the major cities of the world, and experiments with internet-transmitting satellite drones are also at an advanced stage and may provide free-internet to people living at the bottom of the pyramid. Mobile phones, including feature phones

and smartphones, have become cheap commodities but increase the opportunities for individuals to interact in a deep, more connected way with others, and with modern payment infrastructure. (Varga, 2017).

Fintech companies understand the power of tailor-made, simplified business models, and in many cases, focus on niche segments of the financial sector that provide unique forms of value to their customers. They also systematically cooperate with external partners. Open innovation is a widely-used approach to enhancing organizational capacity for innovation. Open innovation relies on the systemic use of outside-in, inside-out and coupled approaches. The process gives a company strategic flexibility, which helps to reduce the development cycles, and to streamline the processes (Gassmann – Enkel, 2004).

2.2. Environmental Factors

To study the adoption of technological innovations in general, Tomatzky and Fleischer (1990) developed the Technology-Organization-Environment (TOE) framework to describe the organizational components that affect the fintech adoption decisions.

TOE framework asserts that the three principle contexts - technological, organizational, and environmental - influence the process by which an organization adopts and accepts a new technology.

The technological context considers the available technologies important to the firm, both internal and external, that might be useful in improving organizational productivity. The organizational context is defined in terms of resources available to support the acceptance of innovation. These criteria include firm size and scope; the centralization, formalization, interconnectedness, and complexity of the managerial structure; and the quality and availability of the firm's human resources. The environmental context represents the setting in which the firm conducts business, and is influenced by the industry itself, its competitors, the firm's ability to access the resources supplied by others, as well as interactions with the government.

The structural and regulatory environments of the respective industry are represented by the environmental context in which a firm conducts its business. This dimension of the framework includes some factors such as the firm's competitors, customers, government, as well as the community that is taken into account (Kruse et.al., 2019)

2.3. Environmental Indicators

A corresponding list of variables and operational definition is presented in Table 1.

Table 1: Variabel and Operational Definition

Variable	Operational Definition	References
Competition (A)	The rivalry among companies in the industry It is easy for customers to switch to another company for similar services / products The customers are able to find easily several substitute services / products with the same functions	Thong and Yap (1995)
Customer / Buyer Pressure (B)	Industry pressure to adopt FinTech Customers pressure to adopt FinTech Suppliers pressure to adopt FinTech Partners pressure to adopt FinTech	Al-Qirim (2007)
Support from Government and Technology Vendors (C)	Adequate support from government Vendors actively market FinTech Adequate training provided by vendors	Al-Qirim (2007)
Adoption of FinTech by SMEs (D)	Adoption of FinTech increases the number of transactions Adoption of FinTech increases the number of consumers The frequency of consumer payments using e-wallet show a tendency to increase	Al-Qirim (2007)

The variables listed in Table 2 are operationalized as latent variables. Measurements were done using five-point Likert scale, which is a common method to measure either individual or firm perception.

3. DATA ANALYSIS

3.1 Respondent Description

The authors used a sample consisting of 402 SMEs Owners / Managers who are actively involved in monitoring daily business as well as payment system. Authors used a purposive sampling method. This method is particularly suited to make sure that the respondents have adequate experience in using e-wallet as payment service, especially OVO. All of 402 data were then analyzed using variance SEM PLS. SEM PLS was chosen, because it offers more flexibility to acquire the desired results. The descriptive results are as follows:

Table 2: Descriptive Analysis on Gender

		Frequency	Percent	Valid Percent
Valid	Male	117	29.1	29.1
	Female	285	70.9	70.9
	Total	402	100.0	100.0

Table 3: Descriptive Analysis on Age

	Frequency	Percent	Valid Percent
17 Years old or less	3	.7	.7
18 – 26 Years old	273	69.7	69.7
27 -35 Years old	97	24.1	24.1
36 Years old or more	29	7.2	7.2
Total	402	100.0	100.0

Table 4: Descriptive Analysis on Merchant

	Frequency	Percent	Valid Percent
Others	58	14.4	14.4
Food/ Beverages	266	66.2	66.2
Minimarket/ Supermarket	4	1.0	1.0
Fashion/ Accessories	74	18.4	18.4
Total	402	100.0	100.0

Table 5: Descriptive Analysis on Age of Company

	Frequency	Percent	Valid Percent
< 3 Years	1	.2	.2
> 15 Years	28	7.0	7.0
10-15 Years	37	9.2	9.2
3 – 6 Years	123	30.6	30.6
7 – 10 Years	71	17.7	17.7
Total	402	100.0	100.0

3.1 Model Development

The results of the measurement model build the analysis of the instrument’s validity, particularly the operationalization of constructs when measuring what has to be measured. There are two essential elements in the construct validity measurement: (a) convergent validity, which combines reliability and (b) discriminant validity; i.e., structural models consist of latent constructs and the relationships among them. The structural model evaluates the explanation of the strength of the path model and its

significance. Therefore, the structural models allow the hypotheses to be tested. Additionally, structural models and measurement models form a group of constructions and measurements. Weight and item-loading indicate the strength of the measurement while path coefficients indicate the strength and relationship signs.

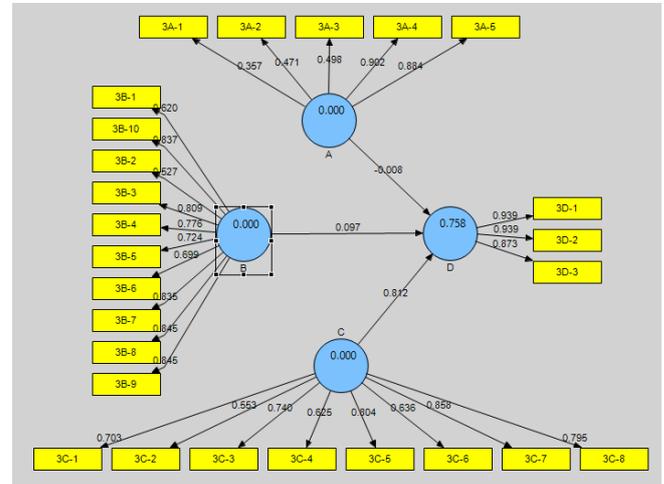


Figure 4. Measurement model

Evaluation of the measurement model in this study was performed in three stages: (1) convergent- validity test, (2) discriminant-validity test, and (3) composite-reliability test. Calculation of the measurement model was done by using a PLS algorithm. Validity in the measurement model requires each and every indicator to measure its latent construct without cross-loading. After the measurement, our model shows that the indicator 3A-1 had cross-loading to other variables. The first indicator in competition variables which states that high industrial competition affect the FinTech adoption was invalid. The indicators that were not supported by the validity-test were discarded. Figure 5 illustrates the measurement model (outer-model) after the removal of indicators with cross-loading.

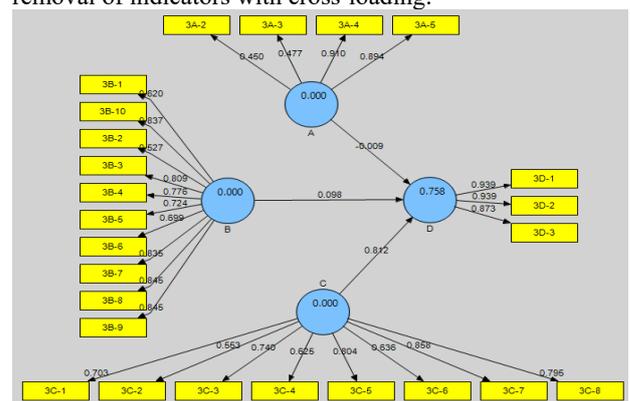


Figure 5. Measurement model after removal invalid indicator

Table 6 reports the result for construct reliability test, which shows that all constructs have a value larger than 0.7 for

both Cronbach's Alpha and Composite Reliability. Thus, all constructs in this study are deemed acceptable.

Table 6. Quality Criteria for Construct-Reliability Test

	AVE	Composite Reliability	R Square	Cronbach's Alpha
A	0.514649	0.793560		0.719282
B	0.575624	0.930132		0.916161
C	0.519772	0.894734		0.868326
D	0.841672	0.940932	0.757837	0.905339

Evaluation of the structural model illustrated in Figure 5 was performed by using 402 samples with bootstrapping. The results are reported in Table 7.

Table 7. Latent variable correlations and R-Square

Latent Variable Correlations				
	A	B	C	D
A	1.000000			
B	0.471939	1.000000		
C	0.247142	0.586126	1.000000	
D	0.237603	0.569388	0.867230	1.000000

R Square	
	R Square
A	
B	
C	
D	0.757837

Based on the values of R-square as displayed in Table 7, this model concludes the prediction toward FinTech adoption variables, in which the Table 1 shows the explained variance of 0.758. Environmental variables concludes the prediction of 75.8% of FinTech adoption.

4. FINDING AND DISCUSSION

Figure 6 shows the total effect of variables on their endogenous-related variable.

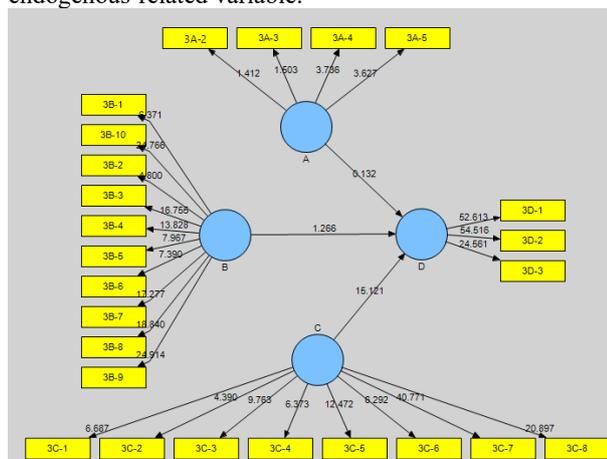


Figure 6. Environmental factor variables toward FinTech adoption

This study shows several interesting results. The indicator of high competition in industry has no relation in the acceleration of FinTech adoption.

Table 8. Path Coefficient and Significance Test

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)
A → D	-0.009227	0.015172	0.070119	0.070119
B → D	0.097646	0.088265	0.077214	0.077124
C → D	0.812277	0.818262	0.053717	0.053717

T Statistics (O/STERR)	
A → D	0.131596
B → D	1.266099
C → D	15.121345

Table 8 show that all environmental variables have an affect toward the acceleration of FinTech adoption, but only the indicator of 'support from government and technology vendor' has significant effect on the acceleration of FinTech adoption by SMEs in The East Java Region. The support from government such as Non-Cash National Movements program by Bank of Indonesia or e-toll payment by Jasa Marga had significant effect on the acceleration of FinTech adoption in Indonesia.

5. CONCLUSION

The findings suggested that vendors offering e-wallet payment services should consider its perceived usefulness and ease-of-use. Obstacles to FinTech adoption are the perceptions of risk in customer's mind followed by the perceptions of costs in merchant's mind. The challenge is to mitigate these obstacles through marketing and other booster initiatives such as cash-back or special discount. The marketing campaign and promotions will attract more customers to use OVO e-wallet.

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