Fintech: A Literature Review

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Abstract

The development of the startup business that continues to increase every year makes startups competing to introduce their products to the public. One that is currently increasing rapidly is Fintech (*Financial Technology*). The emergence of Fintech in Indonesia aims to facilitate the public in conducting financial transactions online, increase financial literacy, and realize financial inclusion. This mapping study aims to identify previous research on fintech and suggest future research. This study uses a systematic literature review (SLR), which is to collect and assess available research related to the subject of interest, so as to achieve an impartial outcome that can be audited and repeated. This study uses 22 articles identified from electronic databases / sources.

Fintech is expected to strike the right balance between providing consumer protection and maintaining financial stability while simultaneously providing sufficient incentives for Fintech's innovation. It is able to build social construction, previous studies have attracted regulators and lawmakers, entrepreneurs, and investors who participated in technology applied in the area of innovative financial services.

Keywords : Financial Technology, Literature Review

Introduction

Financial Technology is recognized as one of the most important innovations in the financial industry and is growing rapidly (Lee and Shin, 2018). This was driven by reduced trust in financial service providers which led to an increase in market appetite for alternative financing (Leong et al, 2017). Much of fintech is driven by a variety of technological advancements: the availability and affordability of infrastructure (for example, the Internet, cellular technology, sensors, increasingly mature technology applications (eg platforms, Big Data analysis), and business operations (e.g. sharing economy), etc (Leong et al, 2017). Lee & Shin (2018) explained that there are six developing fintech business models, namely payment, wealth management, crowd funding, Peer to Peer (P2P) lending, capital markets, and insurance services.

The words FinTech or Internet of Things (IoT) have both gained such broad recognition as representatives of new technology FinTech is leading to several new products and services, including accounting systems and others intended to provide improved and more convenient versions of existing financial mechanisms (Nakashima, 2018). In addition, IoT has also attracted great attentionbecause of the broad range of businesses and industries that this technology is related to or has impacted, and even people not connectedwith the industry are watching trends in this new field, thereforeit could be saidthat currently, there's not one industry unrelated to Internet of Things (Nakashima, 2018).

The growth of investment in fintech has been phenomenal (Lee and Shin, 2018). According to Accenture (2016a), global investment in fintech ventures in the first quarter of 2016 reached $5.3 billion, a 67% increase over the same period the previous year, and the percentage of investments going to fintech companies in Europe and the Asia-Pacific nearly doubled to 62%. Much of this increase in investment has come from traditional financial institutions (Lee and Shin, 2018). Traditional financial institutions invest in external fintech startups in the form of collaborative fintech ventures, as well as their internal fintech projects in hopes of leapfrogging fintech innovation and gaining a competitive advantage (Lee and Shin, 2018).

A continuous growth of the investment has been powering the development of fintech to advance on technologies breakthroughs in multiple areas, such as mobile networks (Wen et al, 2013; Zhang et al 2013; Zhang and Soong, 2004, Gai et al,2016), big data (Yin and Gai, 2015), trust management (Zhang, 2016; Abawajy, 2016), mobile embedded systems (Zhang et al, 2011; Gai et al, 2017), cloud computing (Castiglione et al, 2015; Gai et al, 2018), image processing (Castiglione et al, 2007), and data analytic techniques (Qiu et al, 2015; Li and Kim, 2015). This mapping study aims to identify previous research on fintech and suggests future research on it. Previous researches suggest some variables to study, such as: study of advance the findings by showing comprehensive descriptions of all the interactions involved. Future studies also can extend the findings beyond China's case by comparing the fintech industries of different countries; using the Data-Driven FinTech Framework (DF2) to facilitate and standardize future FinTech researches and technical deployments; the Fintech rules should reach the right balance between providing consumer protection and maintaining financial stability while simultaneously providing sufficient incentives for Fintech innovations; as a perspective on a social construct, previous studies appeal to regulators and law makers, entrepreneurs, and investors who participate in technology applied within the innovative financial services domain. It is also of interest to bankers who might consider FinTech and strategic partnerships as a prospective, future strategic direction; the taxonomy's multidimensionality lays the foundations for analyzing interdependencies among the dimensions and characteristics, that are interesting for policy makers; study about P2P platforms to start using leverage in the future; future research on the mechanisms behind the progress of the disruptive innovation ecosystem; and rigorous research on economic sustainability and cost-effectiveness of newer FinTech models. This study uses Scopus and sciencedirect's database.

Research Method

The basic objective of a Systematic Literature Review (SLR) is to gather and assess the available research related to the subject of interest, thus achieving impartial results that can be audited and repeated (Milian et al, 2019). An SLR is a rigirous methodological review of research results, whose objective is not just to group existing works on this subject; it is also meant to help develop evidence-based guidance for professionals involved in the area of study (Kitchenham, 2004). To demonstrate that the work is new to the existing body of knowledge, the results of an SLR should identify the state of the art with respect to the research question (Levy and Ellis, 2006).

Results

This study uses 22 articles that were indentified from electronic databases/sources. We find that fintech correlated with government intervention; data-oriented techniques, facility and equipment development, application designs, service models placement, and security and privacy protections; big data and firm size; policy direction; Internet of Things; agriculture's sector; bankng; innovations; artificial intelligence; risk; regulations; user acceptance; and stock returns.

Table 1. Previous Studies of Fintech

Name and Year	Variables	Results
Shim and Shin (2016)	Government intervention	The Chinese government makes use of a techno-globalist strategy for the purpose of improving its global competitiveness inthe fintech industry, while also using a techno-nationalist strategy to fostering "national champions" and protecting domestic companies against foreign global players
Begenau et al (2018)	Big data, firm size	if data is a storable, sellable, priced asset, then investment in data should be valued just as if it were investment in a physical asset. Understanding how to price data as

		an asset might help us to better understand the valuations of new-economy firms and better measure aggregate economic activity
Wonglimpiyarat (2018)	Policy direction	The crowd funding system in Thailand is in an initial stage of development at present and thus this funding system needs various government supports to assist SME, the crowd funding mechanisms need to co-evolve with the FinTech industry, the Thai government need to work together in order to improve policy coherence in building a start-up eco-system for entrepreneurial development
Nakashima (2018)	IoT (Internet of Things)	For companies of every size, an essential business activity in modern society and does not mean simply using technology, but achieving social creation through the use of technology
Anshari et al (2019)	Agriculture's digital market-place	AgroPay provides necessary functions for investors to conduct transactions efficiently anytime-anywhere. Investors through crowdfunding can select from the wide-range agriculture products through their smartphone to invest
Jagtiani and Lemieux (2018)	Shaping financial and banking relationships	LendingClub's consumer lending activities have penetrated areas thatmay be underserved by traditional banks, such as in highly concentrated markets and areas that have fewer bank branches per capita. The portion of LendingClub loans increases in areas where the local economy is not performing well
Lee and Shin (2018)	Innovation	There are some illustrations of the use of real options for fintech investment decisions
Jagtiani and Kose (2018)	Artificial Intelligence (AI)	The advanced technology, Big data, and complex AI/ML algorithms have created a new financial landscape. Both traditional institutions and the Fintech platforms have been competing and have benefited from their partnerships
Anagnostopoulos (2018)	Regulators and banks	Disruptive innovation has the potential for welfare outcomes for consumers, regulatory, and supervisory gains as well as reputational gains for the financial services industry. It becomes even more important as the financial services industry evolves

Buchak et al (2018)	Shadow banks	Fintech lenders seem to use different information to set interest rates relative to other lenders. A quantitative model of mortgage lending suggests that regulation accounts for roughly 60% of shadow bank growth, while technology accounts for roughly 30%.
Drasch et al (2018)	Banking	Especially for policy makers, our taxonomy can serve as a helpful classification of cooperation cases and their specific characteristics. Policy makers may examine and built upon the proposed cooperation patterns for the determination of legal actions. For instance, case-driven research approaches should match and analyze legislation for each of the proposed characteristics (e.g. banking licenses, antitrust legislation, patent law).
Gozman and Willcocks (2018)	Risk and regulations	There's a framework theory for deciding when to engage strategically with, or avoid Cloud technologies. This helps executives balance the need to innovate with the need to manage compliance risk and then detail emerging effective practices for managing Cloud based innovation on a sustainable basis.
Susilo et al (2019)	User acceptance	It is actually harder to identify the basic role of factors that will contribute to user decision especially for application that they do not have to pay. In the other word, we cannot identify user judgment prefer on one than other using basic Technology Acceptance Model (TAM) model. It is important to find out the other factors to include in basic model of TAM.
Junger and Mietzner (2019)	A household's level of trust and comfort with new technologies, financial literacy, and overall transparency	Households with low levels of trust, good financial education, and preference for transparency are characterized by a higher probability of adopting FinTech. In contrast, household price perceptions do not appear to significantly impact switching probability.
Vives (2019)	Competition, stability, and the development of unregulated banking activity	Capital requirements should be strengthened in more competitive environments, suchas when new competitors enter the market, and liquidity requirements augmented withhigher disclosure levels. Other key elements of better regulation may be the

		eliminationof hidden subsidies that distort competition, both to incumbents and entrants (in particular in the housing market), and the establishment of regulatory measures that take intoaccount the observable risk positions of financial institutions (for example, in deposit insurance premia)
Thakor (2019)	Banking	A quickglance at the data shows that these platforms have recently not delivered the returns to investors that banks have. For example, in the last quarter of 2018, JP Morgan Chase had an ROE of 14.07%, whereas Lending Club had an ROE of –6.2%. A broader comparison shows aqualitatively similar result.
Acar and Citak (2019)	Banks	Fintech integration phases are constructed to mitigate risks and increase awareness of fintechs in the departments. In this way, most of the departments get in touch with fintechs and understand the importance of external collaboration.
Degerli (2019)	Regulation	Regulators often have three different approaches when it comes to regulating FinTech; Ignore, liken, or regulate. As one of the most regulated sectors in Turkish economy, financial services are far from being ignored
Palmie et al (2019)	Disruptive innovation	This study defines disruptive innovation ecosystems and illustrates the impact that the financial technology (FinTech) ecosystem has had on disrupting the financial services industry.
Dranev et al (2019)	Stock returns	There are significant positive average abnormal return after acquisition of fintech companies in the short-term and negative average abnormal return in the long-term using event study methodology. The specifics of cross-border acquisitions, the level of the domestic market development of the acquirer, and other characteristics of M&A deals are considered in order to explain the reaction of investors to announcements of fintech firms' acquisitions
Hinson et al (2019)	Agribusiness' sustainable development goals	There are clear impediments in the path towards complete financial inclusion and

		the transformation of the agribusinesssector in line with SDG 12. This research shows that several conditions need to be fulfilled for the risks to be sufficiently mitigated

Sitation : Shim and Shin (2016); Keke, et. al. (2017); Begenau, et. al. (2018); Wonglimpiyarat (2018); Nakashima (2018); Anshari et al (2019); Jagtiani and Lemieux (2018); Lee and Shin (2018); Jagtiani and Kose (2018); Anagnostopoulos (2018); Buchak, et. al. (2018); Drasch, et. al. (2018); Gozman and Willcocks (2018); Susilo, et. al. (2019); Junger and Mietzner (2019); Vives (2019); Thakor (2019); Acar and Citak (2019); Degerli (2019); Palmie, et. al. (2019); Dranev, et. al. (2019); Hinson, et. al. (2019).

Conclusion

Previous researches shown the variables that correlated with fintechs. They also suggest future researches, such as: study of advance the findings by showing comprehensive descriptions of all the interactions involved. Future studies also can extend the findings beyond China's case by comparing the fintech industries of different countries; using the Data-Driven FinTech Framework (DF2) to facilitate and standardize future FinTech researches and technical deployments; the Fintech rules should reach the right balance between providing consumer protection and maintaining financial stability while simultaneously providing sufficient incentives for Fintech innovations; as a perspective on a social construct, previous studies appeal to regulators and law makers, entrepreneurs, and investors who participate in technology applied within the innovative financial services domain. It is also of interest to bankers who might consider FinTech and strategic partnerships as a prospective, future strategic direction; the taxonomy's multidimensionality lays the foundations for analyzing interdependencies among the dimensions and characteristics, that are interesting for policy makers; study about P2P platforms to start using leverage in the future; future research on the mechanisms behind the progress of the disruptive innovation ecosystem; and rigorous research on economic sustainability and cost-effectiveness of newer FinTech models.

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