

**LEMBAR HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW  
KARYA ILMIAH : PROSIDING INTERNASIONAL**

Judul Karya Ilmiah : **How to reduce the risk of fintech application through cooperative organizations?**  
 Jumlah Penulis : 1 orang  
 Status Pengusul : Penulis Mandiri  
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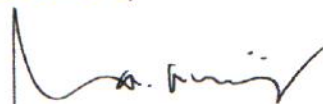
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	Internasional 25	Nasional	
a. Kelengkapan Unsur Isi Buku (10%)	2,5		2,45
b. Ruang Lingkup & Kedalaman Pembahasan (30%)	7,5		7,44
c. Kecukupan & Kemutakhiran Data/Informasi & Metodologi (30%)	7,5		7,43
d. Kelengkapan Unsur & Kualitas Terbitan/Prosiding (30%)	7,5		7,48
<b>Total = (100%)</b>	<b>25</b>		
<b>Nilai Pengusul</b>			<b>24,8</b>

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*pembahasan dalam penelitian sudah tepat untuk menjawab permasalahan yang ada*

Jatinangor, 23 Juni 2020

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NIDK : 880537001

Unit Kerja : Institut Manajemen Koperasi Indonesia

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Komponen Yang Dinilai	Nilai Maksimal Prosiding		Nilai Akhir Yang Diperoleh
	Internasional 25	Nasional	
a. Kelengkapan Unsur Isi Buku (10%)	2,5		2,46
b. Ruang Lingkup & Kedalaman Pembahasan (30%)	7,5		7,44
c. Kecukupan & Kemutakhiran Data/Informasi & Metodologi (30%)	7,5		7,44
d. Kelengkapan Unsur & Kualitas Terbitan/Prosiding (30%)	7,5		7,40
<b>Total = (100%)</b>	<b>25</b>		
<b>Nilai Pengusul</b>			<b>24,74</b>

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- a. Unsur isi <sup>bagian</sup> lengkap, kebaruan cukup.  
 b. Ruang lingkup sesuai bidang ilmu, kedalaman pembahasan cukup.  
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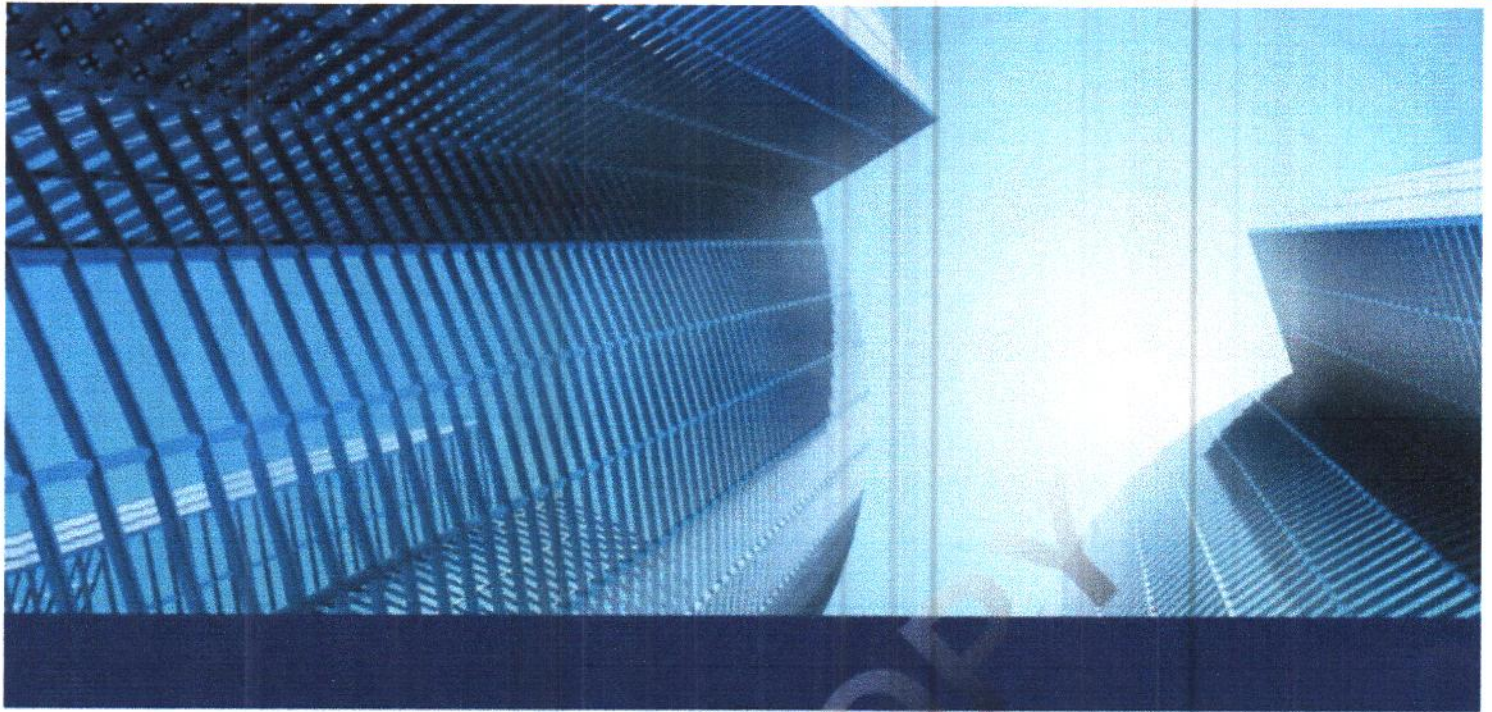
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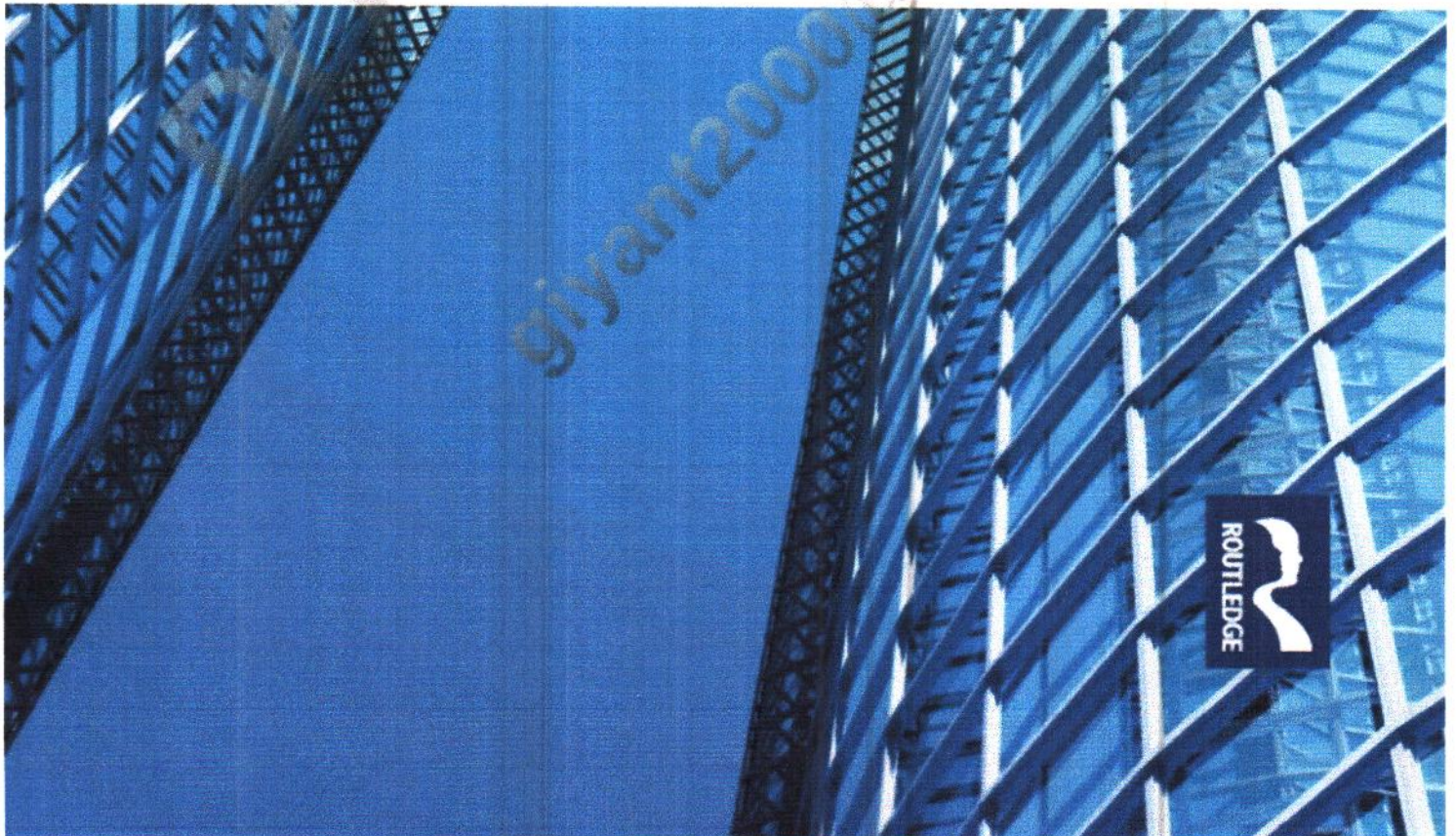
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# UNDERSTANDING DIGITAL INDUSTRY

Edited by

Siska Noviaristanti, Hasni Mohd Hanafi  
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AND ENTREPRENEURSHIP (COMDITE 2019), BANDUNG, INDONESIA, 10-11 JULY 2019

# Understanding Digital Industry

## *Editors*

Siska Noviaristanti

*Telkom University, Indonesia*

Hasni Mohd Hanafi

*Multimedia University, Malaysia*

Donny Trihanondo

*Telkom University, Indonesia*

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## Preface

As a World-Class University, Telkom University is prepared to contribute to knowledge development by conducting a conference with all papers published in the proceedings. This proceedings compiles papers from presenters at the Conference on Managing Digital Industry, Technology and Entrepreneurship 2019 (CoMDITE 2019) which was held on July 10-11, 2019.

This conference had two main sessions, i.e. a plenary session and a parallel session with 142 presenters. The plenary session consisted of a keynote speaker that was delivered by Ridwan Kamil, Governor of West Java Province, and a panel discussion which featured some experts as the invited speakers, i.e. Associate Professor Indrawati, Ph.D., from Telkom University Indonesia; Professor Dr. Saravanan from Multimedia University, Malaysia; Dr. Vichaya Mukdamanee from Silpakorn University, Thailand; Dr. Rina D Pasaribu, M.Sc., CPM, Senior General Manager Telkom Corporate University from Telkom Indonesia; Fauzan Feisal, MIB, as CEO Digital Amoeba Program from Telkom Indonesia; Dr. Ratri Wahyuningtyas, Vice Dean School of Economic and Business Telkom University as the moderator of the panel discussion session 1; and Dr. Maya Ariyanti, Lecturer Master of Management Program as the moderator of the panel discussion session 2.

The 122 papers are from various universities and higher educational institutions from Indonesia and Malaysia.

CoMDITE 2019 was successfully held in collaboration between Magister of Management Program Telkom University (MM Tel-U) and Multimedia University (MMU). This event is supported by Telkom Corporate University.

On behalf of the committee, I would like to express our gratitude to all distinguished speakers, authors, presenters, participants and sponsors for contributing to the successful event of CoMDITE 2019. I hope this proceeding will contribute to the development and improvement of digital industry knowledge & practices.

Siska Noviaristanti, PhD



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We would like to address a warm appreciation to the members of the scientific committee for their participation and expertise in the preparation of the conference. We also thank all people who agreed to play the role of moderator and session chair.

Finally, thanks also to all organising committee members who already put their best efforts to make CoMDITE 2019 happen.

Bandung, September 2019  
CoMDITE 2019 Organising Committee

## How to reduce the risk of fintech application through cooperative organizations?

Sugiyanto

*Master of Management, Institut Manajemen Koperasi Indonesia (Ikopin), Jatinangor, Indonesia*

**ABSTRACT:** The impact of information technology innovation in the field of financial services has become a trend in Indonesia. One of the financial technology business models is P2PL. As a relatively new financial service business, it is, indeed, not free from problems, such as legality issues and business risks that are predicted to increase as results of various violations. The purpose of this research is to descriptively study the P2PL business phenomenon, which is supported by references and regulations on fintech and cooperative business, so that various risks and ways to reduce them can be identified. The results of this research indicate that if P2PL business is conducted by a cooperative, then by changing the model of conventional financial service business into using information technology, the business entity becomes legal; service users are the members of cooperatives who can function as lenders and other members as borrowers, and the cooperative is owned by the members.

### 1 BACKGROUND

Financial technology (fintech) is one of the fastest growing financial service businesses in Indonesia. The Financial Stability Board (FSB) classifies fintech businesses into: (1) peer-to-peer lending (P2PL) (KoinWorks), (2) market aggregator (DuitPintar.Com), (3) investment and risk management, and (4) payment, clearing, and settlement (e-wallet, GO-PAY). The fintech applications are mostly illegal and were closed down in the last two years; however, 113 fintech applications are legal. In addition to legal issues, other problems encountered by financial businesses are community illiteracy; reaping benefits from loans; data hacking; and business risks dealing with the default, fraud, misuse of client data, and high interest rates. The risk of fintech business as described above is predicted to increase in intensity.

Financial Service Authority Regulation No. 77/POJK.01/2016 regarding Information Technology-Based Money Lending and Borrowing Services explains that fintech can legally be managed through a legal entity such as limited liability companies or cooperatives. Most fintech applications are formally in the form of limited liability companies and not many of them are in the form of cooperatives. In fact, in the form of cooperative legal entity, the problems and risks of fintech applications can be minimized. Loan providers and borrowers are members as users of the cooperative service, and they are also owners (dual identity of member principle) (Dulfer, 1994).

### 2 LITERATURE REVIEW

The growth of fintech in Indonesia is supported by the government and banks, but for conventional financial service players such as savings and loan cooperatives. Fintech, as a company, not only uses information technology as a differentiator but is also directed to provide more efficient services, especially related to the process and utilization of the nonbank financial services market. An economic industry composed of companies that use technology to make financial systems is more efficient (McAuley, 2015).

Fintech is a service sector that uses mobile-centered information technology to enhance the efficiency of the financial system (Kim et al., 2016). According to Bank Indonesia (2017) and Kominfo (2017), fintech is a fusion phenomenon that occurs between technology and financial features that change business models and reduce barriers to utilizing financial services. Wilson (2017) states that fintech is a company which primarily uses technology to generate income through the provision of financial services.

Fintech in the P2PL platform is two sides of financial service market players that are not different from the conventional banking system with special challenges (Klaft, 2008). Lenders and borrowers are the main target group of all these financial services. So some research focuses on stakeholders and the determinants of the success of the evangelism process (Freedman & Jin, 2008; Iyer et al., 2009). Its business activities begin, on the one hand, with loan providers looking for opportunities to invest their funds to obtain the highest possible profit at a certain level of risk and, on the other hand, with borrowers looking for a source of liquidity with a different risk of non-payment. Lenders or borrowers sometimes engage in groups and form communities to strengthen their interests (Greiner & Wang, 2009). The challenge is to overcome the principal-agent problem (Jensen & Meckling, 1976). Eisenhardt, K. M (1989) states that agency theory uses the assumption of three human traits: humans are generally selfish, humans have limited thinking power about future perceptions (limited rationality) and humans always avoid risk (risk averse). Agency problems occur initially with the existence of asymmetric information which is a basic problem in P2PL online.

The problems of legality and various business risks can be reduced by utilizing a cooperative organization that has a special identity as an organization characteristic. Cooperative organizations should be understood as business entities that must be distinguished from other forms of companies (ICA, 2001). Dulfer, 1994; Hanel, 1995; and ICA, 2001, state that as an organization, a cooperative is characterized by an economic and social institution. A cooperative has two households, namely, a cooperative company and members' household: members function not only as users but also as owners (double identity of a member). In cooperatives that apply P2PL, both providers and borrowers of funds are members who function as users of cooperative services. As an owner, the member capitalizes and finances the operations of the cooperative, and controls and makes decisions on all cooperative policies.

### 3 METHODS, DATA, AND ANALYSIS

The method used in this study was descriptive qualitative, data were collected from the results of reviews on various regulations and literature on P2PL applications and cooperatives, supplemented by surveys on P2PL businessmen and cooperatives. Data was processed and analyzed with a qualitative descriptive approach.

### 4 RESULT AND DISCUSSION

According to the results of literature reviews and surveys on P2PL business and cooperatives, various information can be obtained:

(1) Anatomy of P2PL business, classified as illegal and legal. In the past two years, the Financial Services Authority has closed down as many as 947 illegal P2PL units. The owners were either Indonesians or foreigners. Foreign owners usually appoint Indonesians as managers accompanied by credit analysts and debt collectors. Loan terms and conditions are determined by the lender. Legal P2PL businesses consist of lenders, borrowers, and P2PL companies. The lender is the owner of capital and lends to other parties who need funds (borrowers). P2PL serves to bring together lenders and borrowers, with fees up to 3% of loans. P2PL does not manage loan money, only regulates payment traffic. The lender distributes the loan through a temporary account and receives it back through this account.

(2) Loan conditions and loan terms set by illegal P2PL include interest of up to 60% per month, passport, personal photo, ID card, and a period of disbursement of funds of 15–30 minutes. Legal

P2PL loan terms include interest on loans up to 24% per month, passport, personal photo, ID card, and terms of disbursement of funds of 15–30 minutes. Bank loan terms are 1% commercial interest per month, borrower's ID card, family card, marriage certificate, bank account, photocopy of proof of salary, 3 to 7-day disbursement period; and cooperative loan terms are that the borrowers need only to apply and the interest is around 1.5 % per month and time for disbursement between 3 and 30 days.

(3) P2PL business problems and risks and legal issues include many illegal P2PL organizers in Indonesia, indicating that this business is widely used by irresponsible parties. There is a problem of borrowing funds and P2PL is often used by various parties to simplify and accelerate the loan process. Owners capital use this business to seek maximum profits, and those who need funds often ignore the heavy requirements set by the capital owner. Data hacking, the P2PL application system, is often misused to access personal data from the borrower's cellular phone, from the contact list, photo gallery, short message history, to family history. The misuse of data includes the telephone numbers of colleagues. It also includes the family of customers who can be used in consumer intimidation. The offer of loans that are easy and quick encourage prospective borrowers to apply for loans, which in turn traps the borrower who have difficulties in paying back the debt. Customers have problems to get funds to repay loans, interest, and late fees. This condition usually continues with intimidation, humiliation of customers in front of friends and colleagues, to sexual harassment. Risk of failure to pay refers to the default risk, which is very high especially for illegal P2PL, with high penalties and penalties that will trap customers. Fraud Risk will frequently occur because the parties do not know each other, the agreements have the tendency to be detrimental to the customer and there is no guarantee. The misuse of client data is carried out by P2PL organizers to obtain other benefits. Customer personal data can be monetized when offered to other investors, as revenue niches for the illegal fintech business. High interest rates and penalties burden customers.

(4) P2PL applications in cooperatives have lenders and borrowers as members of cooperatives; in this case members are users. As an owner of the cooperative who applies P2PL, or contributes capital, controllers and decision-makers work through member meetings to apply cooperative business policies. The members who have excess funds look for other members who need funds to finance their business through cooperatives.

As users, the function of members is as lenders to other members who need funds. On the other hand, members also function as owners of cooperative P2PLs, and they must contribute capital as well as control and make decisions through member meetings.

(5) The risk of P2PL can be reduced through cooperative organizations by consistently upholding the cooperative self-identity in the form of values and principles, and as members participating as users as well as owners. Cooperatives are governed by democratic principles: for example, "one member, one vote"; the direction of decision-making is principally "bottom up"; and governance is ideally by members who make up the general assembly and elect the board and supervisory group of directors. The members exonerate these boards and decide on the use of surpluses accrued, and they alone can change the constitution of their joint venture.

The cooperative formula is particularly suited as a vehicle for achieving diverse community objectives. It may correct market failures and enable the efficient organization of markets by enabling those who are in a weaker market position to combine their purchasing and selling power, uniting small enterprising activities into bigger marketable and more efficient units whilst allowing them to retain their autonomy. The cooperative model gives market power to lay people or small enterprises where homogenous services or products are needed, by enabling those who have little capital to influence economic decision-making, enabling citizens to affect or determine the services they need, integrating large sections of the population to economic activity, and generating trust and creating and maintaining social capital due to democratic governance and economic participation.

A cooperative organization is a legal entity. Through member education as one of the cooperative principles, cooperatives can improve member literacy regarding information technology-based financial services. Both lenders and borrowers are members of the cooperative: they make joint decisions related to requirements, interest rates, and disbursement of loans democratically through member meetings, so that they do not harm each other. Hacking data

can be minimized, because data is stored by cooperatives under the control of members; there will be no intimidation to borrowers because the members value togetherness and helping one another. The borrower is also the owner of a cooperative. The borrower has no difficulty repaying the loan because of low interest and no penalties; relatively low interest, in accordance with the agreement between members, is expected to reduce the risk of default. Lenders and borrowers are members of cooperatives, so it is expected that they will get to know each other thus reducing the risk of fraud. All members must implement the values of honesty and responsibility (cooperative values). Misuse of client data does not occur because P2PL operators are cooperatives owned and controlled by members both as lenders and as borrowers. Interest rates and penalties can be determined by members, either as lenders and or borrowers. In addition, members must participate as users and owners. In cooperative organizations, there are cooperative companies and household members.

## 5 CONCLUSIONS AND SUGGESTIONS

This study indicates that P2PL as a fintech business has numerous problems and risks, even a tendency to harm the wider community. This condition can be minimized by applying P2PL through cooperative organizations that have different identities and characteristics from other corporate legal entities. The application of identity will consistently reduce the various risks and problems of the P2PL application.

The suggestions that can be proposed include the need for education and dissemination of information to the community on an ongoing basis; announcing a list of illegal P2PL perpetrators through the OJK website; requesting the blocking of illegal P2PL websites; reporting to authorities; P2PL business direction through cooperative legal entities; and cooperatives that already have loan and saving services applying the fintech business with the P2PL pattern.

## REFERENCES

- Dulfer, E. 1994. Managerial economics of cooperatives. *International Handbook of Cooperative Organization* p. 587–592.
- Eisenhardt, K. M. 1989. Agency theory: An assessment and review. *Academy of Management Review*, 14(1), 57–74.
- Freedman, S., & Jin, G. Z. v. 2008. Dynamic learning and selection: The early years of prosper. *working paper*. College Park, MD. <http://www.prosper.com/downloads/research/Dynamic-Learning-Selection062008.pdf>.
- Greiner, M. E., & Wang, H. 2009. The role of social capital in people-to-people lending marketplaces. *Thirtieth International Conference on Information Systems* (p.18). Phoenix: Association for Information Systems.
- Hanel, A. 1985. Basic aspects of cooperative organization. *Policies for Their Promotion in Developing Countries*. Fakultas Ekonomi-Unpad.
- ICA. 2001. *Jatidiri Koperasi* (Prinsip-prinsip Koperasi untuk Abad ke-21). LSP2I, Jakarta.
- Iyer, R., Khwaja, A. I., Luttmer, E. F. P., & Shue, K. 2009. *Screening in New Credit Markets: Can Individual Lenders Infer Borrower Creditworthiness in P2PL Management*. Cambridge, MA.
- Jensen, M. C., & Meckling, W. H. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Kim, Y. – Park, Y. J. – Choi, J. 2016. The adoption of mobile payment services for “fintech”. *International Journal of Applied Engineering Research*, 11(2), p. 1058–1061.
- Klaft, M. 2008. Peer to Peer Lending: Auctioning microcredits over the Internet. *Proceedings of the 2008 Int'l Conference on Information Systems, Technology and Management* (pp. 1–8). Dubai: IMT. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1352383](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1352383)
- Kominfo. [www.kominfo.go.id](http://www.kominfo.go.id), accessed on July 18, 2017.
- McAuley, D. 2015. What is FinTech? *Wharton FinTech*, 22.10.2015.
- Prawirasasra, Kannya Purnamahatty. 2018. Financial technology in Indonesia: Disruptive or collaborative? *Reports on Economics and Finance*, 4(2), 83–90. HIKARI Ltd. [www.m-hikari.com](http://www.m-hikari.com) <https://doi.org/10.12988/ref.2018.818>.
- Surat Edaran Bank Indonesia. No.6/18/DPNP.
- Wilson, J. D. 2017. *Creating Strategic Value through Financial Technology*, 1st edition. Wiley Finance, Canada. <https://doi.org/10.1002/9781119318682>.

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