The Role of Islamic Crowd Investing for Sustainable Agriculture in Indonesia

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Abstract

This research was conducted to discover the relationship between Islamic crowd investing and agriculture by exploring and analyzing the Islamic crowd-investing platform, and to describe the importance and benefits of sustainable agriculture in Indonesia. Funding platforms for agriculture are still relatively small in Indonesia. However, the potential for this sector is still very high due to the large number of demands and a large market. A systematic literature review with a qualitative approach research method was used in this study, specifically to review the literature retrieved from computerized databases, manual search, and authoritative texts related to Islamic crowd-investing and sustainable agriculture. This study showed a strong relationship explaining that financial technology, such as Islamic crowd-investing, has an important role not only in terms of funding, but also in achieving sustainable agriculture, which will have an impact on the environment that may potentiate the agricultural sector itself.

Keywords:

financial technology, Islamic crowd-investing, agriculture, sustainability.

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Introduction

The rapid development of technology has an impact on the growth of business and financial services that use website-based technology as a platform. One of the new methods of financial innovation is the crowdfunding method (Belleflamme et al., 2015). This industry was initially used only as a medium for fundraising projects and social or humanitarian activities in the form of donations (Tan, Lu, & Tan, 2016). However, with the development of this method and various forms of projects from organizers, this service is also used for financing, investing, or lending. Hence, this service is not only used for social-based endeavors, but also for profit-oriented businesses (Hornuf & Schwenbacher, 2015). Agriculture is one such sector that makes crowdfunding to be primarily based on investment, i.e., crowd-investing (Mason-D'Croz et al., 2019). The agricultural sector should not be underestimated because it is one of the backbones of livelihood amongst the Indonesian population (Allo et al., 2017).

Investment-based crowdfunding, called crowd-investing, is a unique innovation that is usually carried out by new entrepreneurs who seek a collective venture capital from the crowd, i.e., the public (Tomczak & Brem, 2013). This type of early business can be further developed into a larger business, often known as a start-up business (Rossi, 2014). The existence of various problems in the agricultural sector, such as the shift of land functions or the non-optimal changes of agricultural land management, has also received attention from various parties who are concerned with the agricultural problems in Indonesia (Alisjahbana & Busch, 2017).

Furthermore, another factor of problems for farmers and the agriculture sector is the difficulty of obtaining access to capital or financing, resulting in lost opportunities of cultivating and managing agriculture, both from the upstream and downstream ends of this sector (Syuaib, 2016). Many improvements and arrangements are needed in this sector, one of which is the optimization of investment efforts through financial technology and financing digitization (Utama, 2013). Islamic agricultural crowd-investing is a type of fundraiser for a particular agricultural project by numerous individual contributions. Since agricultural projects require huge capital investments, crowd-investing helps farmers in acquiring capital by giving the opportunity to small-scale investors.

From the prevailing definition, crowd-investing is actually a part of crowdfunding, which is a new instrument in financing start-up businesses (Johnson et al., 2018). However, in Indonesia's context, financial technology companies with this business model are still related to peer-to-peer lending activities or borrowing from several people or individuals, which can also involve organizations and institutions (Iman, 2020). By utilizing the spirit of mutual cooperation or togetherness (*gotong-royong*), the operational system of this business often involves communities or groups of people who want to lend their funds, or participate in investments (Teja, 2017).

Equally, the use of financial technology is also incorporated in the agriculture sector, which has great potential for business (Hinson et al., 2019). Farmers who have limited funds and/or business capital, and have difficulty accessing credit from financial institutions

will have the opportunity to take advantage of the digital financial service technology using the crowd-investing concept as an alternative resource to access a capital that may maximize their farming activities (Bi et al., 2017). In fact, capital is the main obstacle for most farmers, apart from other constraints, such as technology, market information, downstream crops, and climate change, especially for small-scale farmers (Amaruzaman et al., 2017).

Meanwhile, capital is an important internal factor in farming operations. In Indonesia, there are small-scale farmers who obtain capital only to set aside the expenditure to pay off farm operation costs from the previous period or season (Bashir & Yuliana, 2019). With conditions and risks of uncertainty, farmers are at a disadvantage, further burdened by the daily needs of their families. This situation causes farmers to become entangled with adverse loan systems (Duffhues et al., 2011). It is not uncommon for farmers to borrow farming capital from various places. This path usually involves borrowing from financial institutions, both formal ones such as banks, savings, and loan cooperatives, farmer groups, and KUD; as well as non-formal ones such as loan sharks (Asikin et al., 2020).

Farmers often find it difficult to access capital from formal financial institutions (Meutia et al., 2017). In addition, farmers hold negative perceptions toward loans from formal financial institutions as being difficult and expensive (Mariyono, 2019). Farmers still lack detailed information on formal financial institutions and believe that the interest-based repayment system will ensnare them (Findiastuti et al., 2018). Therefore, this is the background for the emergence of the crowdfunding or crowd-investing concept, which can be used as an alternative media to access capital for agricultural activities.

With the intention of bringing together investors and consumers, this operation also functions as a financial intermediary for the farm financing system (Firdaus & Aryanti, 2019). In line with this, the growth of various crowdfunding platforms in Indonesia facilitates agricultural projects or activities in obtaining capital assistance through digital media (Nassiry, 2018). To reach the masses, campaigns must be carried out in an effective manner (Kim et al., 2017), which involves three elements: the fund seekers or the founders; the crowd-investors; and the platform operators (Belleflamme et al., 2015). Although it is often easier and faster for raising funds (Kshetri, 2015), crowd-investors have little knowledge of the venture to be invested in. They completely rely on the information provided by the entrepreneur (Smith et al., 2017).

One of the great potentials of this platform is its ability to adhere to Islamic sharia values as part of business operations (Mujahidin, 2019). Islamic agricultural crowd-investing is a type of fundraiser for a particular agricultural project by numerous individual contributions (Sakinah et al., 2018). Through the sharia crowd-investing approach, risk and liability issues can be managed by the farmers, while the platform becomes the financial intermediary (Saiti et al., 2018). This helps to attain production efficiencies within a form. Crowd-investing in the agriculture sector also imparts the knowledge on agriculture to investors, consumers, and allied enterprises (Ordanini et al., 2011).

Table 1 shows some of the crowdfunding/investing financial technology companies that focus on the agriculture sector as of 14 October 2020, obtained from the Financial Service Authority. Based on the Table 1, the data released by the Financial Service Authority show only few companies with a core business in the agricultural sector. In fact, most of their main businesses usually finance SMEs. However, because there is a market opportunity for agriculture, they still cater to this sector (Mcintosh & Mansini, 2018). This confirms that the agricultural potential is actually very high, since many people still care about agriculture in Indonesia (Suasih & Yasa, 2017). Apart from that, many residents in rural areas are involved in agriculture as one of their livelihoods, demanding this sector to be fully supported by various parties (Wright et al., 2016).

Table 1. Crowdfunding/Crowd-Investing Agriculture in Indonesia.

Name of Company	Core Business	System	Status from OJK
Igrow Asia	Agriculture	Conventional/Profit Sharing	Licensed & Listed
Crowde	Agriculture	Conventional	Licensed & Listed
Tanifund	Agriculture (Upstream & Downstream)	Conventional/Profit Sharing	Licensed & Listed
Lahan Sikam	Agriculture	Conventional	Licensed & Listed
Crowdo	Agriculture, MSMEs	Conventional	Licensed & Listed
Goolive	Agriculture	Sharia-Based	In Process
Tanijoy	Agriculture	Sharia-Based	In Process
MyAgroLand	Agriculture, Land, Field	Sharia-Based	Not Registering
Vestifarm	Agriculture & Aquaculture	Conventional	In Process
Santara	MSMEs, Agriculture	Conventional	Newcomer, In Process

Source: (OJK Indonesia, 2020); Modified by Author

Interestingly, from Table 1, only two of the few companies that obtained permits and have registered with the regulatory agency actually adopt sharia principles in their business operations. The remaining companies only state this on their platforms, but from a legal standpoint in accordance to the criteria set by the institutional authority, they operate with a conventional system instead (Ansori, 2019). Ironically, this practice is contrary to the Muslim majority of the Indonesian society (Djawahir, 2018).

Since the Financial Services Authority and the National Sharia Council have issued 'fatwas' (rulings) for digital financial transactions, especially those related to digital transactions based on sharia principles. Several businesses, such as crowdfunding platforms, have also tried to apply this to their business systems. This present paper has emphasized that crowd-investing is a business model that can enhance and sustain agriculture in Indonesia (Strzębicki, 2015; Teja, 2017) by offering an alternative financing form of

loans or investment, in addition to the existing services offered by financial institutions (Lee et al., 2018).

In the Indonesian context, several financial technology platforms do have great motivation to develop the agriculture sector and help farmers in terms of capital. This provides an opportunity for the agriculture sector to continue to be developed (Ningrat & Nurzaman, 2019). However, the great potential possessed by this sector is not directly proportional to its implementation. Based on the data released by the Financial Services Authority in the second semester of 2020, only several financial technology companies were concerned with agriculture, and have registered or received operational licenses from the OJK as regulators. Other companies registered with regulatory agencies are more focused on financing or microfinancing other investments outside agriculture, such as property — micro, small, and medium enterprises; and other retail businesses (Mittelman & Rojas-Méndez, 2013).

There are many studies that focuses more on developing in depth “fintech” crowd-funding or crowd-investing, such as the characteristics of successful crowd-funding (Yuan et al., 2016), and the factors that influence it (Zhao et al., 2017). On the other hand, few studies discuss this fintech platform with sustainable agriculture. Other researches focus more on microfinance for the MSME sector (Pronti & Elena, 2019; Sa’ad et al., 2019), or more emphasis on the discussion of the consumptive loan process for the household sector of the economy (Gimpel et al., 2018). Furthermore, there are several studies that discuss the agriculture sector, but explore more on the business model and those associated with the marketplace in this industry (Anshari et al., 2019; Ningrat & Nurzaman, 2019; Strzembicki, 2015).

False assumption is the notion that there are not many financial technology companies operating with the concept of crowdfunding or crowd-investing applications on agriculture (Mcintosh & Mansini, 2018). Similar designs and study models related to this matter are relatively few. For example, one study by Mariyono (2019) focused on the access to financing in terms of using microcredit capital in agricultural management, especially in Indonesia. Another study by Muhyiddin (2018) discussed more on the distribution flow or the transformation of agriculture to the manufacturing industry as part of the sector’s development. Although, the attention paid by world institutions shows the support for global agriculture. According to one report by World Bank (2013), there is a need for microfinance institutions to optimize financing for agribusiness, whereas another report by World Bank (2016) stated that digitalization is also needed in maximizing the development of the agricultural sector. Hence, in this paper, we have explored the connection of Islamic crowd-investing and sustainable agriculture in Indonesia, which is still rarely discussed by other researchers. Based on several gaps from the studies that have been described previously, this research aims to discover the relationship between Islamic crowd-investing and the agriculture sector by exploring and analysing the Islamic crowd-investing platform thorough literature. Besides that, the aims of this research also to describe the importance and benefit of sustainable agriculture in Indonesia.

Method

The methods used are qualitative systematic review with an integrative analysis through documents or literature. The systematic review offers several advantages compared to the conventional literature review. The review can be strengthened via a transparent article-retrieving process, a more prominent or wider area of research, and more significant objectives, which can control research bias. Apart from that, this also motivates a researcher to produce quality evidence with more significant results (Johnson & Hennessy, 2019). Key texts (henceforth, referred to as “guidance”) are identified based on accessibility and prominence within the United Kingdom’s systematic reviewing practice (Cooper et al., 2018). The value of systematic review depends on what was done, what was found, and what was clarified from the reporting (Sierra-Correa & Cantera Kintz, 2015; Moher et al., 2015 Okoli, 2015).

The review methods of the present study were conducted using two databases, namely Scopus and Open Knowledge Maps, considering that both databases are reputable. In relation to studies on crowd-investing in agriculture, more than 134 articles in Emerald, 20 results in Scopus, and 56 journals of open access type and non-open access type in Open Knowledge Maps were covered. The appropriateness of this methodology for crowd-investing and agriculture studies review is reflected in four ways (Sierra-Correa & Cantera Kintz, 2015): (i) clearly defining research questions; (ii) explicitly identifying inclusion and exclusion criteria; (iii) assessing a large amount of relevant and available scientific literature as much as possible in a definite time; and (iv) increasing the rigor by using statistics (Morton et al., 2016; Johnson & Hennessy, 2019). A systematic review aims to minimize bias by using explicit methods, and to identify the gaps as well as new directions for future research.

The Systematic review process for selecting articles

Identifications

In this process, a number of present relevant articles were searched, collected, and selected from the databases. With the identification of keywords, this was followed by a search for related and similar terms regarding the topic of research. Therefore, a search string in terms of keywords in Scopus resulted in a total of 156 journal publications. As previously stated, the Open Knowledge Maps scientific database yielded 56 journals and additional records identified through other sources – Science Direct, Taylor Francis, Springer, MDPI database result 13 journals.

Screening

In this process, ten articles were excluded in the first stage, while 225 articles were screened based on several inclusion and exclusion criteria determined by the researchers in the second stage. The first criterion is the literature type, in which the researchers decided to only focus on journals (research articles) because they act as the primary sources that offer empirical data. Hence, this implies that publications in the form of

systematic review, review, meta-analysis, meta-synthesis, book series, books, chapters in books, and conference proceedings were excluded from the current research. In addition, it should be noted that the review only focused on articles that had been published in English.

Eligibility

In the third stage, 115 articles were prepared for screening eligibility. On a more important note, the titles, abstracts, and the main content of all articles in this stage were examined thoroughly to ensure that they fulfil the inclusion criteria of the present study to achieve the research objectives. Consequently, a total of 96 articles were excluded because they were not based on empirical data, and were discovered to be hard sciences articles or those that do not focus on agricultural practices in Asian countries and territories. Finally, a total of 19 remaining articles were ready to be analysed.

Model Development (Data Abstraction)

Full articles were assessed for eligibility. Efforts were concentrated on specific studies that responded to the formulated research questions. The table below shows the inclusion and exclusion criteria of the databases that were searched for extraction and analysis it.

Table 2. The inclusion and exclusion criteria.

Criterion	Eligibility	Exclusion
Literature type Journal	Journals (research articles) indexed by Scopus	Journals (review), book series, books, chapters in books, conference proceedings
Language	English	Non-English
Time line	Between 2018 and 2020	< 2019
Subject area	Social Science, Crowdfunding, Crowd-Investing, Islamic Crowdfunding in Agriculture	Other than Social Science, or Crowdfunding, or Crowd-Investing, or Islamic Crowdfunding in Agriculture

This study performed a comprehensive review technique that analysed and synthesized diverse research designs in the qualitative approach (see Table 2). The process of developing the appropriate themes and subthemes was carried out based on thematic analysis (Shaffril et al., 2019). The first phase of the theme development process was the compilation of data. In this phase, the authors carefully analysed a group of 19 selected articles to extract statements or data that answer the research questions. Subsequently, in the second phase, the authors created meaningful groups via a coding method according to the nature of the data. In other words, the second phase converts raw data into useable data via the identification of themes, concepts, or ideas for more connected data (Charrois, 2015).

Results and Discussion

Based on Figure 1, the systematic review process is explained thoroughly, including analysing and synthesizing the selected final studies for the qualitative synthesis. This process starts from identifying existing database in the online literature (Scopus, Open Knowledge Maps, Science Direct, Taylor and Francis, and MDPI Journal), and is based on some of the criteria mentioned earlier. Then, duplicate records will be removed from the database. Moreover, after the duplicates' removal, several articles were screened to define the exclusion and inclusion criteria of publication. Thus, the final result to analyse was 19 articles, which were selected in the qualitative synthesizes.

As a final point, the process has resulted in the development of three main themes, namely performance of crowd-investing in agriculture, sharia compliance, and sustainable agriculture. Meanwhile, for the subthemes, codes were created which related to project category, funding target, lender motivation, sharia application, and food sustainability. Thereafter, the authors resumed the process in each of the created theme, whereby any theme, concept, or idea that had connections with one another within the developed theme would be channelled into subthemes. Table 3 below shows the result of the data extraction from Figure 1.

Figure 1. The Systematic Review Process

Source: adapted from Moher et al. (2015).

Table 3. The Role of Islamic Crowd-Investing toward Sustainable Agriculture

No	Authors	Performance Crowd Investing Agriculture			Sharia Compliance	Sustainability Agriculture
		Project Category	Funding Target	Lender Behaviour	Sharia Application	Food Sustainability
1	Chang (2018)	v	v	v	-	-
2	Ningrat & Nurzaman (2019)	-	v*	v*	v*	v**
3	Fitriani (2018)	v*	v*	-	v*	v**
4	Hinson et al. (2019)	v	-	-	-	v**
5	Firmansyah & Anwar (2019)	v*	-	v*	v*	v**
6	Anshari et al. (2019)	v*	-	v*	v*	v**
7	McIntosh & Mansini (2018)	v	-	v	-	v**
8	Yoo & Choe (2014)	v	-	v	-	v**
9	Nassiry (2018)	-	v	-	-	v**
10	Saiti et al. (2018)	v*	v*	v*	v*	v**
11	Misso & Cesaretti (2019)	v	v	v	-	v**
12	Muhyiddin (2018)	v	v	v	-	v**
13	Sa'ad, Ahmad, & Saleh (2019)	v*	v*	v*	v*	v**
14	Nielsen (2017)	v	v	v	-	v**
15	Motylska-kuzma (2018)	v	v	v	-	v**
16	Filimonova & Ozerova (2019)	v	v	v	-	v**
17	Asfarian (2020)	v	v	v	-	v**
18	Maehle (2020)	v	v	v	-	v**
19	Li, Du, & Fu (2020)	v	v	v	-	v**

Note:

*Publication with topic sharia compliance and sustainability agriculture

**Publication without sharia compliance

The analysis produced a total of three themes and five subthemes related to the role of Islamic crowd investing in the agriculture sector and sustainable agriculture. As presented in Table 3, the three themes are performance of crowd-investing agriculture (three subthemes), sharia compliance (one subtheme), and sustainability agriculture (one subtheme). More specifically, it should be noted that several selected and eligible paper themes were found to have revealed crowdfunding or crowd-investing performance through their performance projects, while 6 (six) other papers highlighted the importance of sharia compliance to be applied, and the rest focused more on sustainable agriculture models and the systems inside them. Nonetheless, if all papers had been synthesized based on subthemes, each theme could have been connected to other codes. Despite this, not all papers were connected to other themes or subthemes. Yet, in the papers by Fitriani (2018), the findings emphasize that the role of financial technology (crowdfunding/investing/p2p

lending), especially in this digital era, is to further strengthen farmers' capital, in order to optimize facilities and infrastructure for the realization of the sustainability of the agriculture sector in Indonesia.

Meanwhile, Anshari et al. (2019) provide a concept where digital marketplaces and fintech can bridge farmers, investors, and land owners, and can expand the supply chain as well as sustainability in the agriculture sector. This is in line with Ningrat & Nurzaman (2019), where it was conveyed that fintech and Islamic finance can realize a sustainable agriculture value chain. Moreover, Firmansyah & Anwar (2019) mentioned that one of the Islamic crowd-investing companies in the agriculture sector is Goolive as mentioned earlier in Table 1. This confirms that the role of this company has promising prospects if it is optimized and managed with good organization. On a global scale, the role of fintech, whether crowdfunding/investing or p2p lending, has also been conveyed by Saiti et al. (2018) and Sa'ad et al. (2019); those who focus more on the concept of their own financing, namely by using 'salaam' and/or through the 'musharakah' smart contract mechanism, in order to maximize funding in the agriculture sector and this is very possible if implemented in the context of agriculture in Indonesia. Based on previous analyses, this study can represent the research objective (i) regarding the relationship between Islamic crowd investing and the agriculture sector in Indonesia.

Furthermore, to describe the importance and benefit of sustainable agriculture in Indonesia and at a global scale as in research objective (ii), a study by Hinson et al. (2019) revealed the important role of fintech crowd-investing toward the success of sustainable agriculture. Thus, making it part of the development in an effort to realize the SDG as a goal or vision. The study also explained that the role of the Internet is instrumental in the digitalization of the financial sector, so it needs to be improved in relation to other sectors such as agriculture. This was also further stated by McIntosh & Mansini (2018) that the optimization of non-bank financial institutions does not make them distracting, since their presence is able to maximize the functions and empowerment related to the agricultural sector, both for farmers and their surrounding environment such as the community, the society, and the market or industry from upstream to downstream. Moreover, Misso & Cesaretti (2017) explained that the internet and its development play an important role through crowdfunding in maximizing the sustainability of agri-food and agri-enterprise, and to develop a society with higher well-being. In Indonesia, Asfarian (2020) described the designing about mobile crowdfunding to reduce food insecurity and to implement the food security as an innovation through technology, internet, and fintech. Along with other researchers, agri-food through crowdfunding/crowd-investing can also have an impact on a sustainable food community as well as communication, and the factors influence the success of the campaign in order for it to run smoothly (Yoo & Choe, 2014; Pronti & Elena, 2019).

Henceforth, this study has presented the main result of the relationship between Islamic crowd investing and agriculture sector in Indonesia, and the benefit of sustainable agriculture, which can then be summarized below:

The Relationships:

1. Optimizing farmers' capital because it is accessible.
2. Increasing the availability of infrastructure needed by farmers.
3. Islamic crowd-investing can encourage the creation of digital marketplace agriculture in order to realize sustainability.
4. To bridge farmers, investors, and landowners.
5. Through Islamic crowd-investing, it can create supply chain agriculture.
6. 'Salaam' and 'Musharakah' as a process that can maximize funding disbursement in agriculture.

The Benefits:

1. The minimization in food insecurity.
2. The creation of sustainable agriculture value chain.
3. The implementation of agri-food and agri-enterprise.
4. The realization of sustainable food community toward the well-being of society.
5. The achievement of one of the SDGs Goals.

Conclusion

PRISMA is a tool that is relatively comprehensive to use in observing phenomena related to a literature. By reviewing it more in-depth and in detail, it is hoped that research gaps can be detected, whether a study has been done or (maybe) has not been completed by previous researchers. From the systematic review, a guideline can be created, compiled, and collated to use by other researchers in continuing or complementing existing research. In this study, the findings contained in the abstraction data did not limit the existence of codes, themes, and other subthemes that had not been included (or revealed) in this study. However, the existing directions can be used as a basis for reviewing the same topic further and for adding new findings to the latest research. Therefore, the role of Islamic crowd investing has seen an emergence within the agricultural development in Indonesia. Nonetheless, the potential for this sector cannot stand alone, and needs the support from stakeholders and shareholders who are concerned with agriculture as well as its ecosystems.

This research only focuses on the agricultural sector in Indonesia that still needs to be optimized more broadly. Several literatures have found that the relationship between Islamic crowd-investing and sustainable agriculture, if managed properly and by creating new innovations, will certainly be able to achieve food security and reduce the potential for vulnerable food societies in the future.

Based on the results of this research and the conclusion above, this study recommends several policies. As a new financial innovation, crowd investing tries to develop and improve the implementation of sharia regulations. Since it must comply with the system, the government must accommodate supervising and monitoring this application. Building

a digitalization of the ecosystem requires a lot of support from all parties; especially in the increasingly broad financial technology industry; strong infrastructure and optimizing practitioners in this industry are also expected to be maximized. Moreover, capacity building is intrinsic for the maintenance of the world of agriculture, both of locally and globally as well as vertically and horizontally, is urgently required. Hence, the link between industries, such as among crowd-investing fintech and the agriculture sector, can provide functions and benefits that can be experienced by farmers at large.

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