

UNDERSTANDING THE POTENTIALS AND CHALLENGES OF AGRICULTURAL TECHNOLOGY BASED CROWDFUNDING IN MALAYSIA

Mohammad Fauzy Tambi¹, Azlina Hanif² and Herwina Rosnan²

¹Technology Commercialization and Business Center, MARDI, 43400 Serdang, Selangor

²Arshad Ayub Graduate Business School, University Teknologi MARA, 40450 Shah Alam, Selangor

*Corresponding author's e-mail: mdfauzy@mardi.gov.my

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ABSTRACT

Crowdfunding is a new era financing alternative. It has been well accepted worldwide and the sustainability was empirically proven. Despite the popularity, rapid growth, and overwhelming acceptability worldwide, yet still to be unfamiliar relatively to many people. Especially in the Malaysian context where there is very little understand about how, why, where, when and what type of crowdfunding (business area) users prefer to engage. Accordingly, agriculture is yet to be among the Malaysian main industries since post-independence. However, as reported for the past couple of years, the Growth Domestic Product (GDP) for agriculture is still far behind Manufacturing and Services industries. Among the issues were low up take of agriculture technology and innovations due to high initial investment, high risk, hard to access for loan. As crowdfunding is a new emerging financing alternative, thus this paper is to understand the potentials and challenges of Agricultural Technology-Based Crowdfunding (ATCF). For a better understanding, we performed a qualitative study based on semi-structured interviews of above 18 years old Malaysian citizen. The respondents



were randomly engaged. Data from the interviews were later transcribed into verbatim, analysed within and cross cases, coded, categorised, and grouped into the emerging themes. The findings were displayed in a table in responding to the research objectives. Few future research have also been identified and proposed to strengthen the study on the subject matter.

Keywords: crowdfunding, agriculture technology, Malaysian context

INTRODUCTION

Crowdfunding or crowd financing is ‘the collective effort of individuals who engage in network and pool their money, usually via the Internet, to support efforts initiated by other people or organisations’ (Ordanini *et al.*, 2011). Crowdfunding is supported by web-based platforms (i.e., RocketHub, Kickstarter, and IndieGoGo) or social media (Instagram, Facebook, and Twitter), as well as online payment transfer services such as PayPal, MoneyGram, and others. ‘Crowdfunding’ has become an important and a new potential alternative financial source for entrepreneurs (Sancak, 2016; OECD 2015). In 2014, the crowdfunding market growth up to RM 68 billion worldwide and continued accelerating to RM 144.5 billion in 2015. Asia Pacific generating RM 4.7 billion in 2015 (Asian Institute of Finance, 2017). There is total of 1,250 crowdfunding platforms (CFPs) across the globe. CFPs in Asia was represented by 13.5% platforms (Massolution, 2013).

Problem statement

Despite being blessed with fertile soil and avail environment for agricultural development and numerous initiatives and injection of R&D and technology development grants for agriculture agenda, Agricultural Gross Domestic Product only contributed 6.5% of Malaysian Q1 2020 GDP, far behind Services and Manufacturing sector (Department of Statistic, 2020). Among the reason denoted, due to the rate of agriculture technology adoption remained low in developing countries as being reported by Margaret and Samuel (2015). This has been asserted by a study reported by Yigezu *et al.* (2018) that the main constraint farmers hinder to adopt technologies and innovation due to high initial investment. According to a census by Department of Statistics Malaysia, only approximate 20% financing for

SMEs came from financial institutions and government loans. Furthermore, venture capitalists and angle investors are not the preferred options since they only invest a maximum 2.5% of the applicants that they evaluated. Most of the sources are either borrowing from friends and family (Shaista & Hemalatha, 2020). Investment for modern technology adoption and financing for start-up, small scale growers, farmers, and entrepreneur really a challenge. Among the major constraints for approval by banking institutions such as insufficient documents, no financial track records/ credit history, lack of collateral, no reputation and high risk due to anonymous and unproven technology adopters project proposal (Blade, 2018).

Crowdfunding approaches seems to be an alternative for the source of financing agricultural technology-base businesses. As to date there are only 10 registered ECF and 11 P2P in Malaysia. However, none directly involve into Agriculture Technology-Based Crowdfunding. Although, Malaysian has been among the first Asian countries to embrace crowdfunding by having a proper regulatory way back in 2015, the study on crowdfunding among Malaysians are still limited ascertained by Asian Institute of Finance's report, 2017. The study which involves 1,332 Malaysian public respondents and further 300 respondents from small medium business owner has reported 86% of the public didn't know about crowdfunding, 12% having 'low' understanding and only 1% having 'high' understanding about the concept of crowdfunding and 70% of the survey only willing to invest RM 100 per project. Although there is an increase in the study of crowdfunding in the Malaysian context on past few years, however it's still reported to be unfamiliar relatively to many people especially on the type of crowdfunding business area (Bergamini, Navarro, & Hilliard, 2017; Mokhtarrudin, Masrurah, & Muhamad, 2017). The number is further deprived when comes into the Agriculture Technology-Based Crowdfunding project intention. Further, there is still limited and little understand about how, why, where, when and what type of crowdfunding (business area) users prefer to engage. Thus, the aims of this paper are to understand the potentials and challenges of Agriculture Technology-Based Crowdfunding (ATCF). To gain such insight, this paper is designed and implemented a qualitative study to answer the following questions: The potentials and challenges of Agriculture Technology-based Crowdfunding?

This seems significant to provide in depth inside to the government and the policy maker in order to craft proper policies, strategies and tools towards the success of empowering the agriculture sector i.e., either crowdfunding initiative is significant and really in need by the Malaysian and shall be promoted.

LITERATURE

Crowdfunding

Crowdfunding is considered new financial instrument for start-up and small and medium enterprises (Beaulieu *et al.*, 2015). Access to funds through crowdfunding could enable small scale farmers and agriculture entrepreneurs to adopt and utilised innovation and modern technology. Crowdfunding is defined as the collection of funds from the public on web-based platforms for specific projects, business ventures or social causes (Mohamed Asmy, 2018). The idea of crowdfunding is to come in practice with the aid of web-based platform (i.e., RocketHub, Kickstarter, and IndieGoGo) or social media (Instagram, Facebook, and Twitter), as well as online payment transfer services such as Paypal, MoneyGram and others.

Crowdfunding is divided into monetary and non-monetary motives which is then further divided into four categories. They are: (i) reward-base, (ii) donation-base, (iii) equity-base and (iv) lending-base/ peer to peer (Norhafiza & Rabihah, 2020; Massolution, 2013). In reward-based crowdfunding, the primary objective of funders is to gain a non-financial reward. In donation-based crowdfunding, funders donate to causes that they want to support, with no expected compensation. Whereas in equity-based crowdfunding, funders receive compensation in the form of fundraiser's equity-based or revenue, or profit-share arrangements. Finally, in lending-based crowdfunding, funders receive fixed periodic income and expect repayment of the original principal investment. In other words, equity-based and lending-based crowdfunding considered as crowdfunding for financial return, while donation-based and reward-based crowdfunding are used for campaigns that appeal to funders' personal beliefs and passions. The scope of crowdfunding projects are diverse such as for business start-ups,

development projects, catastrophe aids, scientific research, entertainment such as video games, movies and music, political campaigns, utilities, and many other targets.

Accordingly, agricultural crowdfunding is an emerging product of the combination of agriculture base activity or project and crowdfunding business model (Limmeng, 2019). Agricultural crowdfunding projects have been a huge success and flourished throughout the worlds. For instance, Kickstarter among the establish Crowdfunding platform in the world, has a special 'Food' section. Since 2007 to 2016 Kickstarter has collected US 93 million for Agri-Food projects and hosted more than 22 thousand of food projects (Kickstarter, 2017). Further, AgFunders was the first equity Crowdfunding platform dedicated to Agri-Food has collected USD 9.3 billion for investments in food sector includes e-commerce, robotics, agricultural inputs, software, food traceability, irrigation, and agricultural production (AgFunders, 2015). In France, the greatest platform in Europe in Agri-Food is Miimosa which hosted 300 projects collecting EU 1.5 million since 2014 (Miimosa, 2016). Another example such as Kiva, which helped financing small holder farmers of low-income countries in agricultural activities of 565,695 farmers, mostly women with a rate of loan of 274\$ lent every minute (Kiva, 2017). It has been proven as the alternative approach to mobilise agriculture activities and business especially on adoption of agriculture technology vis to be modern, efficient, high yields, cost effective yet leveraging the initial, start-up, maintenance cost which originally hinder people/ farmers to venture on them.

Crowdfunding in Malaysia

In Malaysia, commercial investment-based crowdfunding made available on 2015 and 2016 respectively when Security Commissioner of Malaysia regulate its frameworks known as Equity Crowd Funding (ECF) – angle investor type funders and Peer to Peer (P2P) – public funders (Asian Institute of Finance, 2017). As to date there are 10 registered ECF and 11 registered P2P in Malaysia.

The government aware the significance this system can impact the country, on National Budget 2019, the government has allocated additional RM 50 million to My Co-Investment Fund (MyCIF) under Security

Commissioner of Malaysia to leverage crowdfunding platform to help financing underserved SMEs (Budget, 2020). As Malaysia has emerged and legalised crowdfunding as means for acquiring funds, yet there is still minimal participation with regards to ECF and P2P-type crowdfunding by the Malaysian.

Research on Crowdfunding

Natalia (2019) on her research on sustainability of crowdfunding has laid out four factors for sustainability of crowdfunding which motivation to seek fund, the platform, cost of the project and the relationship with the funders. Achsania *et al.* (2019) on their study on developing Islamic crowdfunding platform stated that there is an issue to current crowdfunding relatively to low trust as it relates technology-based of high level of fraud risk. A study on the role of social awareness over the success of crowdfunding platform has reported that technology readiness plays important role and have a strong correlation with the success of a crowdfunding (Wahjono *et al.*, 2019). A study on a proposed integrated zakat-crowdfunding model (IZCM) for effective collection and distribution of zakat fund in MALAYSIA by Mohamed Asmy *et al.* (2019) and a study on crowdfunding-waqf model (CWM) in Malaysia similar with Mohamed Asmy *et al.* (2018) have studied users' behavioural intention toward crowdfunding respective models.

On the other hand, Hui *et al.* (2014) on their research found out that crowdfunding works are too overwhelming and incumbent which, mentorship and adequate support tools are really a saviour. Gerber and Hui (2013) claimed that crowdfunding combines elements of online philanthropic behaviour, online consumer behaviour and online peer-to-peer lending whereby online philanthropic behaviour is about provide financing online out of social responsibility, online consumer behaviour relates to consumers expectation and behaviours regards to online market activity where risk and trust always being the main issue and further online peer-to-peer lending is about the interpersonal intimacy between a creator and his funder which leads to subjective behaviour.

Our work extends prior research by exploring the potentials and challenges of agricultural technology-based crowdfunding. In this study, we will investigate in-depth said possibly potentials and challenges

from potential creators' perspective, potential funders' perspective, and potential investors' perspective. Findings from this research can inform to design related initiatives or new tools or policies amendments to inculcate Agriculture Technology-Based Crowdfunding adoption by the Malaysian thus crowdfunding platforms being the mechanism on supporting the growth of agricultural sector in Malaysia.

METHODOLOGY

Study Design

This interpretive qualitative research of phenomenological study aims to study human action and reaction towards agricultural technology-based crowdfunding base on human knowledge and experiences to obtain in-depth insights on phenomenon of interest (Yin, 2014).

Respondents

Qualitative sampling is concerned on information richness which involve appropriateness and adequacy. In this research, we interviewed seven Malaysian citizens of more than 18 years old including four male and three females, of age ranging from 26 to 50 years old as respondents. All are government employees having educational backgrounds levelling from diploma to Doctorate with the monthly salary range of RM 2500 – RM 10970. This is supported by Creswell (2007) who recommended a sample size of five to 25 respondents and Clarke and Braun (2013) that suggested for 'small' project six to ten sample size are sufficient if reach data saturation in the interviews. All the respondents were selected via random sampling which fulfilment of study setting and the objective of this study which is to explore the public opinions on understanding the potentials and challenges of Agricultural Technology-Based Crowdfunding.

Procedures and Protocols

This research applied semi-structured questionnaires with opened questions of interactive approach (Marshall, 1996). This approach

will give the respondents freedom of expression on general and specific topics thus in-depth information shall be acquired. The interviews were semi-structured of open-ended questions which took a range of half an hour to one hour. The interviews were conducted one to one either face to face or via Google Meet sessions. As the interviews to be transcribed into verbatims, thus the medium of communication was in English language. The respondents being told the purpose of the interview and that not to be compensated for their participation. The semi-structured interviews were divided into three sections. The first section is to acquire the demographics and professional background of the respondents and continued with an overview of crowdfunding by the researcher. Later, the respondents were asked with regards to the projects they involved, their introduction to crowdfunding and their current involvement (if any).

On the second section, the researcher asked the respondents to describe their perspective about crowdfunding at large. During the final section, the researcher asked the respondents specific to agricultural technology-based crowdfunding (ATCF), the potentials, challenges and to share any additional views and comments. Below is the checklist of the semi-structured interview questions.

Section 1

1. Demographic profiles
2. Overview of Crowdfunding by the researcher.
3. Have you ever heard about CF/ (Y: when, where, how)?
4. Have you ever experienced/ knew somebody experience CF? (Y: 5W, 1H).

Section 2

1. Your general understanding about CF?
2. Advantages/ Disadvantages of CF?

Section 3

1. Comment on Agriculture Technology-Based Crowdfunding? (Question evolved based on answer)
2. Pro and Cons? (Question evolved based on answer)
3. Potential and Challenges/ Hindrance? (Question evolved based on answer)

4. Motivations or Deterrent? (Question evolved based on answer)
5. SWOT ATCF? (Question evolved based on answer)
6. Any other suggestion for improvements? (Question evolved based on answer)

Data Analysis

As the interest of the study is to know the potentials and challenges of Agricultural Technology-Based Crowdfunding from many perspectives. The researcher engages selective coding and analysis. Within-case analysis (Halinen & Tornroos, 2005) which to identify and list down every instance where respondents communicated pro and cons of ATCF. Furthermore, cross-case analysis were done and the similarities were coded and re-arranged in the specific group of categories. Thematic analytical procedures which include sorting and organising the data to look for patterns and relations between them where the focus is to develop the emerging themes based on the categorise information derived inductively from the data acquired. The categorised emerging themes further summarised in the table form which reflect the objectives of the study.

Table 1: Summary of the Findings

Research Objectives	Emerging themes	Transcribe verbatim/Coded
Potentials of ATCF	High Potential for fund rising	<ol style="list-style-type: none"> 1. Benefit approach to get money for projects. 2. Good approach, as an alternative way to pull fund. 3. CF is a new smart way to gain fund. 4. It's a good solution and fast fund opportunity to small business due to hard-to-get banks' loan. 5. It's a good opportunity to Agri start-up to get fund. 6. Alternative way to get investment for tech savvy, as tech related projects are hard to get loan. 7. No restriction to fun (max/min). 8. Good opportunity for agribusiness. 9. It's a new opportunity to get funders for a new initiative. 10. Young farmers maybe motivated by this approach.
	Helpful for newcomers/ new approach/ unique	<ol style="list-style-type: none"> 1. CF can assist unemployed fresh graduate to embark into agribusiness. 2. Integration of digitisation in pandemic era is a good approach. 3. CF can gain fast response to get funds if show uniqueness. 4. Focus on use of digitisation platform in this time is a good approach. 5. Online which is easy access. 6. Young farmers maybe motivated by this approach. 7. Combine of resources such from small scale farmers, land, money to become big and utilise technology. 8. As a new way for extra income to government employees. 9. New way for retiree to invest on their KWSP.
	Strengthening awareness to increase acceptability	<ol style="list-style-type: none"> 1. Awareness made easy to capture funders. 2. if desirous and well plan Agri Tech based CF can be a good initiative. 3. Potentially done but need awareness.

Challenges of ATCF	Issue of trust (Security)	<ol style="list-style-type: none"> 1. Due to rely on web-base which less physical contact and communication, potential on scam/ fraud. 2. Can lead to fraud as lack of rectification of 100% money gained to be used solely for the projects. 3. Unclear status quo of a project may inculcate risk to the people engaging the ATCF. 4. Trust issue and potential on miss used. 5. Can be not genuine/ abuse thus insecurity if anonymous project. 6. Issue on credibility of project owner exist.
	Issue of trust (Confidence)	<ol style="list-style-type: none"> 1. The success of ATCF maybe on type of tech or purpose of CF project. 2. Need to build up trust among Agri players, farmers, companies and organisations. 3. Need to build up trust ie mass marketing, educate and awareness as current situation, people not believe to ATCF. 4. Hard to get the investor to feel confidence due agricultural output not promising. 5. Lack of exertion to assist ATCF thus hard to get people to get involve. 6. Lack of law enforcement to monitor and control the ATCF activities. 7. Project owner need times, work hard, to proof and persuade potential funders to join. 8. People not confidence to involve due to ambiguous system and output

RESULTS AND DISCUSSION

High Potential for Fund Rising

One of the main findings is that ATCF is a good alternative as it leverage high potential for fund raising. This to be the key information as highlighted by all the respondents. For instance, Respondent 1, 2, 3 and 7 stated that it's a benefit, good approach, and a smart way to get money or pull funds for a project. Accordingly, Respondents 3, 4 and 6 stated that this

approach really a relief for agriculture-based SMEs as mentioned below: Respondent 1 said, “It’s a good solution and fast fund opportunity to small business due to hard-to-get banks’ loan” and “... It’s a good opportunity to Agri start-up to get fund”. Furthermore, Respondents 4 and 5 also confirmed this statement which she mentioned that “...crowdfunding is a good opportunity for agribusiness” and “Young farmers maybe motivated by this approach”.

Helpful for Newcomers/ New Approach/ Unique

Another key finding is that ATCF or Crowdfunding is a relief for new start-up/ new business/ new technology adoption. This can be verified from the statement of Respondents 1-3 which mentioned that crowdfunding can assist unemployed fresh graduate to embark into agribusiness, digitisation in pandemic era is necessitate and motivation to a young farmer, respectively. Moreover, Respondent 2 also mentioned that “...crowdfunding is an alternative way to get investment for tech savvy, as tech related projects are hard to get loan”. As for funders perspective, Respondents 3 and 6 mentioned that crowdfunding or ATCF may be new way for earning extra income for government employees and retirees.

Strengthening Awareness to Increase Acceptability

As there is empirical study that crowdfunding in general is still anonymous by Malaysia, thus mass campaign and awareness shall be perpetrated to the public at large to educate, inform, and propose the potentials and the advantages of crowdfunding and further educate the ready and availability of law and legislation to confer the crowdfunding activities especially for equity and peer-to-peer type of crowdfunding. The success for an Agri-food crowdfunding is fundamentally based on the campaign itself (Andrea & Elena, 2018). This has been asserted for example from the respond of Respondents 4 – 5 respectively: Respondent 4, “Awareness made easy to capture funders”, meanwhile Respondent 5 stated if desirous and well plan Agri Tech based CF can be a good initiative and further ATCF is potentially done but need awareness.

Issue of Trust (Security)

Nevertheless, there still challenges and hindrance for ATCF which on the issue of trust of security and confidence on the system. For instance, as mentioned by Respondent 2 that “Due to rely on web-base which less physical contact and communication, potential on scam/ fraud”. Another reason as described by Respondent 3, whereby a project owner tends to mis-used the fund for other purposes than the project as lack of rectification of 100% money gained to be used solely for the projects. Further, the issue of unclear status quo of a project may inculcate risk to the people engaging the ATCF (Respondent 3). This is similar finding as stated by (Achsania *et al.*, 2019) on their study on developing Islamic crowdfunding platform that low trust to crowdfunding as it relates technology-based of high level of fraud risk.

Issue of Trust (Confidence)

Lastly, based on the interview sessions, another discouraging finding was the issue of confidence level towards the system. As Respondent 4 stated “Lack of law enforcement to monitor and control the ATCF activities”. This may be due to lack of knowledge/ not aware on the system, the establishment of the law and legislation and might be true in some extend. Another reason may be due to unfamiliar/ lack of confidence to the type of technology or purposes of a crowdfunding project which asserted by Respondent 6 whereby she stated that when regards to ATCF, “People not confidence to involve due to ambiguous system and output”. Further Respondent 5 has informed that “Need to build up trust among Agri players, farmers, companies and organisations, which include built up trust in mass marketing, educate and awareness as current situation, people do not believe to ATCF”.

FUTURE RESEARCH

Our findings present many new questions for future research. For instance, on the issues of risk of either security or confidence, once shall embark to study on said subject either, there really an issue of risk due to lack or any loophole in the system, law, and legislation or merely due to lack of understanding and awareness of how the system fully operated.

Further, the study can be extended to get in-depth information and perspectives from people who experienced crowdfunding themselves either from the project owners' perspective, funders' perspective and/or investors' perspective. Another potential study expansion towards a focus group of experts in the fields of i.e., Agriculture entrepreneurs, System providers, Ministry of Agriculture's representative and Food, MARDI's representative and/or Malaysian Security Commissioner's representative.

We hope by understanding the potentials and challenges of ATCF, thus local authorities, policy makers, ministry of agriculture and food and all other relevant bodies shall together to establish viable strategies to immaculate agriculture industry assisted by crowdfunding or Agriculture Technology-based Crowdfunding which public feel confidence off.

CONCLUSION

Agriculture Technology-Based Crowdfunding seems to have a promising future in Malaysia. Nevertheless, there are few points to ponder such as need to strengthening awareness of the existence of crowdfunding availability in Malaysia as current situation in Malaysian crowdfunding in general still anonymous and to promote ATCF as platform for promoting and strengthening digital economy, the need to educate and make aware on the establishment of law legislation of crowdfunding in Malaysia, maybe to strengthen them to eradicate insecurity conception by the public at large and build people's trust and last but not least the alignment among Ggovernment, industries, and farmers to work hand in hand to sync resources to make ATCF popular (from the potential project owners' perspective and potential funders' perspective) and may look to improve tools and expand initiative of collaboration among stakeholder i.e. farmers, growers, SMEs to up-take any ATCF.

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