DETERMINING THE RELATIVE IMPORTANCE OF QUALITY FACTORS FOR CROWDFUNDING PLATFORMS

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ABSTRACT

A crowdfunding platform provides a facility for anyone with internet access to transmit an idea to a social network with the goal of gathering funding for their works or projects. A quality crowdfunding platform acts as an indicator of the donors' ability to provide funds to the projects. In the existing literature on the quality factors of crowdfunding platforms, no systematic approach has been applied to prioritize these quality factors. The task of identifying the quality factors of a crowdfunding platform has been absent in the existing literature. The aim of this study is to use the Analytic Hierarchy Process (AHP) to identify and rank the relative weights of the quality factors of crowdfunding platforms. The results show that 'functionality' emerged as the most crucial criterion. The research findings also provide insightful information to crowdfunding platform providers so that they may improve the effectiveness and efficiency of their platforms.

Keywords: crowdfunding platform; quality factors; prioritization; Analytic Hierarchy Process

1. Introduction

The revolution of information and communication technology has transformed the world economy from production-based to knowledge-based. People prefer to stay connected and complete tasks efficiently and quickly, and it is in this environment that the internet has emerged. The internet offers new opportunities for soliciting and collecting voluntary contributions, and these opportunities are made available at a lower-cost, and in a wider coverage area and communications network (Yan et al., 2006). Indeed, the emergence of

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the internet has introduced various modes of opportunities to raise funds through online systems, especially crowdfunding platforms.

A crowdfunding platform is an internet-based platform that connects fundraisers to funders with the aim of raising money for a particular campaign or project (Belleflamme et al., 2015). The campaigns or projects have different features and the funders have diverse preferences concerning these campaigns or projects. The crowdfunding platform provides a facility for anyone with internet access to transmit their idea to a social network with the goal of gathering funding to realize their works or projects. These ideas can range across fields and vary in scope such as musician, academician, product designer, doctor, entrepreneur and educator (Babich et al., 2018). The donors can contribute small amounts to specific projects, and in this way the "crowd" collectively contributes to the funding of the project.

The process of raising money from the crowdfunding platform is in contrast to traditional fundraising efforts such as securing funds from banks, venture capitalists, and foundations (Gerber et al., 2012). The creators or project initiators develop a profile on a crowdfunding platform and explain their monetary goals, planned use of the funds, and timeline for reaching their goals. The crowdfunding platform provides dedicated project pages, analytics and project monitoring, and tutorials prior to and throughout the campaign (Gerber & Hui, 2003). Creators also rely on additional social media platforms like Facebook, Twitter and YouTube to publicize their request for funds from supporters or the “crowd”.

Various platforms have emerged that offer entrepreneurs and project owners the possibility of raising money from an undefined group of online users (“crowd”). This shows that a crowdfunding platform involves matching the two sides of a market. A crowdfunding platform does not provide a one-to-one arrangement, but a one-to-many arrangement since many projects require more than one funder to reach the funding target and make it successful (Mollick, 2014). Meanwhile, the incentives provided by fundraisers to funders or donors are different and based on the type of crowdfunding platform.

Crowdfunding platforms can be divided into four categories, namely donation crowdfunding, reward crowdfunding, lending crowdfunding, and equity crowdfunding (The World Bank, 2013). Donation-based crowdfunding involves the collection of funds for a social, artistic, philanthropic or other purpose, and is not in exchange for anything of tangible value (Massolution, 2015). Meanwhile, reward-based crowdfunding is the collection of funds where the investors or donors receive some tangible reward (such as a membership rewards scheme) as a token of appreciation (Massolution, 2015). Lending-based crowdfunding is an online platform that matches lenders or investors with borrowers or issuers to provide loans with a certain interest rate that is set by the platform (Massolution, 2015). Equity-based crowdfunding refers to funds raised online by a business, particularly early-stage funding, by offering equity interests in the business to investors (Massolution, 2015).

Over the last five years, crowdfunding platforms have achieved tremendous growth. In 2014, crowdfunding platforms in Europe made up around 60% of all CFPs worldwide, while around 20% of all crowdfunding platforms are based in North America (Massolution, 2015). In Europe in 2014, the U.K. had the most crowdfunding platforms

with 70, followed by France with 70 crowdfunding platforms and Germany with 50 crowdfunding platforms (Massolution, 2015).

On the other hand, the majority of campaigns (62%) use donation-based crowdfunding. Only 15% of campaigns use reward-based crowdfunding, followed by 22% who use lending-based. Equity-based campaigns contribute to less than one percent of the total campaigns (Massolution, 2015). Meanwhile, in terms of funding volume of crowdfunding platforms, lending-based crowdfunding and donation-based crowdfunding raised USD$1169.7 million and USD$979.3 million, respectively from 2010 to 2012 (Iizuka, 2014).

Malaysia was the first country in Southeast Asia to give regulatory approval for equity crowdfunding in 2015 and peer-to-peer (P2P) financing in 2016. As of June 2019, there are 21 market-based financing platform operators registered in Malaysia. The Malaysian Securities Commission has approved a total of 10 equity-based crowdfunding platforms and 11 lending-based or P2P crowdfunding platforms. Furthermore, Malaysian equity crowdfunding and P2P financing platforms have collectively raised RM432 million as of June 2019. The funds which have been raised since 2015 have benefitted over 1,200 micro, small, and medium enterprises (MSMEs), and these financing campaigns attracted more than 12,000 investors, 90% of whom are local and retail investors.

Many researchers have started to examine different aspects of crowdfunding as the potential and importance these platforms play in raising funds has become clear. For example, research on crowdfunding focuses on the motivations of sponsors and entrepreneurs (Barabas, 2012; Gerber, Hui, & Kuo, 2012; Ordanini, Miceli, & Parasuraman, 2011), and factors affecting crowdfunding performance in raising capital (Lambert & Schwienbacher, 2010; Mollick, 2014; Zheng et al., 2014). In addition, a few studies have explored the crowdfunding project implementation process to understand sponsors' feelings and experiences (Mollick, 2014). Some researchers have also pointed out that providing a good online platform is increasingly recognized as a critical factor for its successful implementation (Lin, 2012).

Therefore, determining the quality factors of crowdfunding platforms is crucial for the service providers. It helps the service providers identify and focus on the factor with the highest priority and improve their platform effectiveness. Despite the rapid growth of the online community of creators and supporters that are linked with crowdfunding platforms, to the best of the researchers' knowledge, there are no studies that have empirically investigated the quality factors of crowdfunding platforms, particularly in the Malaysian context. The consequence of this dearth of research is that many quality aspects of crowdfunding platforms remain poorly understood. The present study fills this research gap by determining the relative weights of the quality factors of crowdfunding platforms in Malaysia. In order to extend the contribution of the study, the quality factors of mobile and online banking and e-commerce as a proxy for crowdfunding platforms are also used. Consequently, this study attempts to apply the Analytic Hierarchy Process (AHP) approach to determine the relative weights and priority of the quality factors of crowdfunding platforms.

2. Literature review

2.1 Quality factors in online fundraising platforms

The quality factors have a significant role in the successful implementation of any online system or platform. There is a dearth of literature about the effects of the quality factors on crowdfunding platforms. Therefore, the present study contributes significant value to the literature because it intends to expand the research to a different concept like crowdfunding platforms in the Malaysian context. According to DeLone and McLean (2003), the success of information systems (IS) depends on a few quality factors. For instance, the quality of mobile banking is determined by functionality, content, customer service and interface design. Some previous studies that identified the quality factors associated with various mobile and online banking, and e-commerce applications are discussed below.

2.1.1 Functionality

The term functionality means the quality or state of being functional. It varies widely depending on the subject and the surrounding environment. It is a set of functions related to any device, such as computer software and hardware, which satisfy needs under certain conditions. In the case of mobile banking, for instance, service operators used to offer advanced functions for customer satisfaction such as guaranteed secured transactions, and easy cash receipt and transfer. They invest a huge amount of resources to diversify their functions. The scope and nature of the functionality of any device or system, therefore, remains constant over time. A few characteristics and attributes of functionalities, as mentioned by Andreou et al, (2005), are provided here.

i. Interoperability: This includes three items: a) platform independence (can function in different web or mobile platforms), b) operating system independence (can function in different operating systems), and c) hardware compatibility (can operate in various devices).
ii. Suitability: This has three different aspects: a) user satisfaction (meeting the user needs), b) service satisfaction (fulfilling the required services), and c) achievability (rendering more services than expected).
iii. Security: This has mainly two features: a) data encryption (protecting the data), and b) access control (authentication and authorization of the users for accessing the services).
iv. Compliance: This is comprised of two standards: a) network standards (supported in different networks), and b) communication standards (supporting different network standards).
v. Accuracy: This is concerned with correctness. The application must generate correct or accurate results with zero margin of error.

In addition to the above characteristics of functionalities, Hsiu-Fen Lin (2013) considered four similar attributes that include accessibility, response time, mobility, and security.

According to Brüntje and Gajda (2016), the functionality of a crowdfunding platform has a direct impact on the channeling of investors' funds. The crowdfunding platform's functionality consists of the application phase, screening and selection phase, and evaluation phase. All of these phases are essential for the success of the fundraising. The present paper uses the functionality factor to measure its effect on the quality of the crowdfunding platform in the Malaysian context.

2.1.2 Content

The meaning of content depends on where the term is being used. For instance, web content is a type of presentation of ideas and messages in the form of texts, images, sounds, videos, and animations, whereas media content is a collection of information or real facts provided to end-users through various media channels i.e., TV, social network, newspapers etc. In the case of mobile content, there are certain key aspects that need to be emphasized such as mobile phone screen, map, GPS, graphics, multimedia, SMS option, and application for social networks etc. Previous studies have been conducted on the importance of content in website design and mobile phone banking. Chae et al. (2002) recommend that content is an important factor regardless of the nature of the web site i.e., web-based or wireless. Venkatesh and Ramesh (2002) identified subcategories of content and found that its relevance is more effective in the wireless network than in the web context. Chae et al. (2002) named four categories of information quality of mobile internet services which are connection, content, interaction, and context. Only the content category of information quality was found to be significant in affecting users' attitude toward mobile information quality. This finding is similar to Vlachos et al. (2003), Vlachos and Vrechopoulos (2005), and Chan and Ahern (1999) who suggested that the quality of the content plays a key role in determining the quality of mobile entertainment services.

Taylor (1986) introduced the concept of quality in his value-added model. It is mostly used for the evaluation of information systems, information and data. Since the content is more closely related to building a framework or information system, Taylor's recommendations consisted of five characteristics that are required to develop any system or package: a) accuracy is an attribute that adds value to the system by confirming the transfer of error-free data and information, b) comprehensiveness also adds value by providing complete coverage of a definite subject or discipline, c) currency enriches the system by updating the data, d) reliability is an essential element that enhances not only the quality of the system but also the output over a long time, and e) validity which is ensured by the data presented in the system being valid and sound.

Dresner (2014) mentioned that a crowdfunding platform needs to issue a prospectus with specified content including how the capital that is raised will be used, recent financial performance, and projects. The content includes updates, comments, images and video, and results. Yao and Zhang (2014) found that the information or content quality disclosed on the online platform has a positive effect and to be influential on crowdfunding project financing.

2.1.3 Customer service

Customer service provides a set of services to the customers before, during and even after the purchase event. It is a process where customers and service providers can communicate through face to face interaction, phone calls, or self-service systems etc. A successful customer service provider is someone "who can adjust themselves to the personality of the guest" (Buchanan, 2011). It also means that employees must maintain a good relationship with a client to increase their satisfaction level. A number of studies focus on the customer service quality in marketing. It is mandatory for every discipline to adopt proper policies that enhance the quality of customer service. In the case of mobile banking platforms, the service providers have been successful in providing fast and effective services to their customers via phone, email, live chat and online customer care (Ganguli & Roy, 2011).

Online banking services are mostly provided using high-tech communication channels (Dean, 2004; Rafaeli et al., 2008). According to Bitner (1992), "in self-service organizations where very few if any employees are present and customer activity is very high, service support or remote service enhances customer satisfaction and attraction". The factor "customer service quality" was first developed by Parasuraman (1988) and was comprised of ten items including reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding the customer and tangibles (Kazi, 2011). Since then, these dimensions have been reduced to five, namely tangibility, reliability, responsiveness, trust and empathy (Che Wel, 2003).

In addition, Brüntje & Gajda (2016) stated that having good customer service on a crowdfunding platform can increase investors' loyalty and attraction. Similarly, Martin (2012) highlighted that better access to customer services would legitimize a crowdfunding platform and make it successful. Furthermore, Belleflamme et al. (2010) found that raising money, getting public attention and obtaining feedback on products/services are all relevant factors in determining the success of a crowdfunding platform. The present study adopts some of these customer service quality dimensions and observes their effect on crowdfunding platform quality. As discussed, the quality of the customer service remains the focal point for achieving success in any business, and its proper implementation, particularly in a new platform like crowdfunding, will add value to the existing literature.

2.1.4 Interface design

An interface refers to a common boundary that connects systems, equipment, concepts and most importantly, human beings (Mayrath, Nihalani & Robinsons, 2011). It is designed to make communication effective between devices, programs and users. Interface design is one of the key qualitative factors that determine the quality of products and services. This is to ensure that the end users are ultimately comfortable. For instance, interface design should include various aspects of usability, like easy accessibility and understanding of the whole action because it makes links between interaction and visual design, and information architecture (Elalfy, 2005).

There are certain guidelines for interface design that enhance the quality of products and services. Several different user interface design guidelines were introduced in the 1990's which are visibility of system status, match between system and the real world, user control and freedom, consistency and standards, error prevention, recognition rather than recall, flexibility and efficiency of use, aesthetic and minimalist design, helping users recognize, diagnose and recover from errors, and help and documentation (Wong, 2017). These are essential qualities for any successful interface design.

Interface design has become a subject of growing interest in online banking and particularly in the mobile banking services where different banks' clients make various transactions and inquiries such as account balance, transaction history, transfer of funds, pay bills, trade stock and manage asset portfolios, and finding the location of the nearest banks' ATM (Matilla, 2004; Crossman, 2011). There are few studies that focus on interface design in the context of a crowdfunding platform. Shi and Guan (2016) found that appealing web-pages, promotional videos and photos of projects become the factors that determine the interface design of a crowdfunding platform.

Brüntje & Gajda (2016) also mentioned that the interface design of a crowdfunding platform includes interaction orientation, user added value, customization and personalization. A good interface design for a crowdfunding platform provides an opportunity for investors or users to re-configure platform websites and products or services according to their specific needs. This factor is becoming increasingly vital for Web 2.0 applications and the quality of the crowdfunding platform can be enhanced by adopting a user-friendly interface design like mobile banking (Wirtz et al. 2010).

3. Research method

From the literature, the following research framework was developed for this study**.** The quality factors of the crowdfunding platform are dependent on four factors: (i) functionality (accessibility, response time, mobility and security); (ii) content (accuracy, currency, relevance, completeness); (iii) customer service (reliability, responsiveness, trust, and empathy), and (iv) interface design (multimedia capability, format, understandability, navigability).

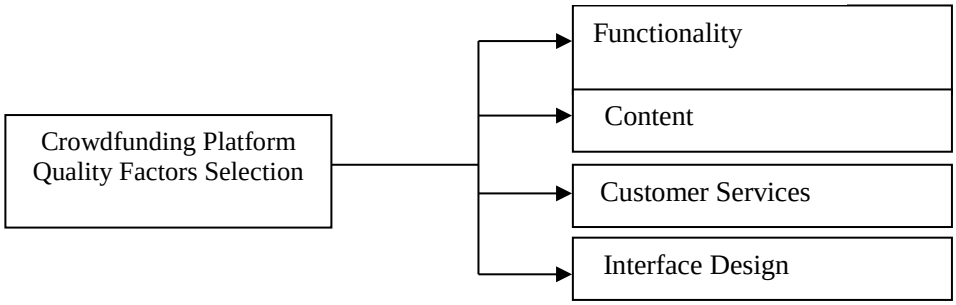

Figure 1 Research framework

3.1 Research area and sampling method

This research uses a quantitative method in the form of a survey to carry out the analysis. The Klang Valley area (Kuala Lumpur and Selangor) was selected for this study. This area was chosen to represent an urban area and consists of various ethnic groups or communities. Jjudgemental sampling was applied after considering the purpose of the study.

Unlike other models, the AHP has no general rule about an appropriate sample size, and even works after the first interview. Since this method does not require many interviews, the results appeared to be stable after only a few experts were interviewed. Peterson, Silsbee and Schmoldt (1994) and Al-Harbi (2001) implemented this method with only 5 respondents, Armacost, Componation, Mullens, Swart (1994) considered 7 respondents, Mawapanga and Debertin (1996) chose 18 respondents and Huang and Yeh (2011) used 25 participants for their studies. The present study interviewed 31 respondents and ranked their opinions regarding the proposed model.

The survey questionnaire was distributed manually and self-administered by the respondents. The first part of the questionnaire focuses on the demographic profile of the respondents such as gender, age, marital status, race, education level, income,

employment level, occupation, number of family and religion. In order to measure the level of awareness about crowdfunding platforms, questions measuring the individual's thoughts, feelings and actions were incorporated in the survey. For example, a typical question could be, "Have you heard about crowdfunding platforms?" The fundamental objective of this study was to determine the relative importance of the quality factors of crowdfunding platforms. Therefore, to meet the research objective, this study applied the fuzzy approach known as the Analytical Hierarchy Process (AHP). The survey questions are strictly based on AHP protocols. Table 1 shows the AHP matrix that was designed for this study. This matrix must be completed by the respondents. The scale used with the AHP is different from the normal Likert scale, in that a range from '1' for 'equally important' to '9' for 'extremely important" is used, as indicated at Table 2.

Table 1
Analytic Hierarchy Process AHP matrix

Crowdfunding Platform Quality Factors Selection	Functionality	Content	Customer Services	Interface Design
Functionality				
Content				
Customer service				
Interface design				

Table 2
Analytical Hierarchy Process scales

Scales	The verbal judgement of importance	Description of verbal Judgement
1	Both are equally important	Both elements contribute equally
3	Moderately important	Judgement favours one element over another
5	Strongly important	An element is strongly preferable
7	Very strongly important	An element is very strongly prevailing
9	Extremely important	An element is preferred by at least an order of magnitude
2,4,6,8	Intermediate values	Normally used to compromise between two verbal judgements
Reciprocals	When an activity *I* compared to *j* is assigned one of the above numbers, then activity *j* compared to *i* is assigned its reciprocal	

3.2 The Analytical Hierarchy Process (AHP)

AHP is widely popular for analyzing complex decisions and is used in various research related to knowledge, experience and individual perceptions (Saaty, 2008). AHP is based on the segregation of a decision into specific elements following individual characteristics. AHP uses aggregate individual priorities (AIP) to obtain the ranking criteria from the respondents. To calculate the priorities for every element, the judgemental matrix below is used where $a_{1,2}$ shows the pairwise comparison between element 1 and 2 with regard to the upper level. The entries of $a_{1,2}$ are controlled by the rule of; $a_{12} > 0$; $a_{12} = 1/a_{21,}\ a_{11} = 1 \forall\ i$

	C_1	C_2	C_n	
		a_{12}	……	a_{12}
A=	a_{12}	a_{22}	…….	a_{22}
……	……	……	…….	a_{nn}
C_n	a_{n1}	a_{n2}	……..	

In addition, this paper uses the geometric mean as suggested by Forman and Peniwati (1998) because in the context of this paper the aggregate individual priorities (AIP) structure is used due to the focus on the individual's priorities, and the most suitable method to deal with individual aggregate priorities is the geometric mean. In this paper, a group of respondents is not considered a new individual, which is another justification for the use of the geometric mean.

Zahedi (1986) suggested several protocols for implementing the AIP prioritization as below:

i) Break down the decision problem into a hierarchy of interrelated decision elements such as criteria, alternative decision, sub-criteria alternatives.
ii) Gather the input data postulated by the pairwise matrices of the elements.

iii) Determine the proportion or weight of the decision by using the eigenvalue analysis.
iv) Finally, take the collective data of all of the respondents of relative proportion or weights to derive the ranking for the decision elements.

Saaty (1980) also mentioned that there must be some reasonable consistency in deriving the priorities from the paired comparison, in which the number of factors being considered should be less than or equal to 9. The consistency judgement is calculated using the following formula:

$$CR = \frac{CI}{RI}$$

where the CR is the consistency index and RI is the random index. On the other hand, the consistency index (CI) can be derived based on this formula:

$$CI = \frac{\lambda \max - \mathrm{n}}{n-1}$$

where,

λ max = largest Eigenvalue
n = size of the comparison matrix

According to Saaty, an acceptable consistency index should be less than 0.10. If it is greater than .10, the result is inconsistent, which may be due to the respondents not understanding the questions that they were asked. Therefore, the judgement may not be accurate. The analysis of the consistency index can be performed using Expert Choice software. After an acceptable consistency index is obtained, the next process is to derive the weights, or normalized scores, for the criteria

4. Research findings, discussion and conclusion

Table 3 shows the demographic information of the respondents involved in this research. 25.8% of the respondents were male, and 74.2% were female. Most of the respondents were between 31 and 40 years old (61.3%). This percentage seems to be consistent with a previous study conducted by Metawa and Almossawi (1998), where the perception of people or customers between 20 to 50 years of age had the most impact on policies. Thus, this finding may contribute to obtaining the objective of this study.

The majority of the respondents were Malays (68.1%), followed by Chinese, Indian and others at 18.1%, 9.4% and 4.4%, respectively. In terms of education level, the majority of the respondents (80.7%) held a Bachelor`s degree and postgraduate degree, with 9.7% having a diploma degree, followed by 6.5% with a secondary level and 3.2% with non-formal education. In addition, the employment status of the respondents showed that the majority of respondents were from the public sector (45.2%), 35.5% were from the private sector, and both self-employed and students shared 3.2%. In terms of income level of the respondents, majority (74.3%) of them were having income above RM3000 and 25.8% were having income less than RM3000.

Table 3
Descriptive statistics

		(%)
Marital status	Single	19.4
	Married	80.6
Ethnicity	Malay	68.1
	Chinese	18.1
	Indian	9.4
	Other	4.4
Education level	Non-Formal Education	3.2
	Secondary Level	6.5
	Diploma	9.7
	Bachelor Degree	58.1
	Postgraduate	22.6
Employment status	Public	45.2
	Private	35.5
	Self-employed	3.2
	Housewife	12.9
	Student	3.2
Number of family members	One	9.7
	Two	19.4
	Three	29.0
	Four	22.6
	>Four	19.4
Monthly income	RM1001-RM2000	12.9
	RM2001-RM3000	12.9
	RM3001-RM4000	32.3
	RM4001-RM5000	22.6
	>RM5000	19.4

n = 31 respondents

Table 4
Malaysian awareness about crowdfunding platforms

Level Of Awareness		Percentage (%)	
		Yes	No
1. Have you ever aware of crowdfunding platform?		54.8	45.2
2. Have you ever aware of websites such as *kick-starter, pitch in, mystartr* and crowdonomic media?		45.2	54.8
3. Are you interested to invest your money through a crowdfunding platform to fund a project, a business or personal loan, and other needs?		80.6	19.4
4. What are the factors that influence you to invest your money through a crowdfunding platform? (You may tick more than one).	i. Functionality	77.4	22.6
	ii. Content	64.5	35.5
	Customer Service	58.1	41.9
	. Interface Design	35.5	64.5

Table 4 shows the results of the awareness level of respondents about crowdfunding platforms. There are four questions; the first question was about awareness of crowdfunding platforms and shows that more than half (54.8%) were aware of crowdfunding platforms. Since crowdfunding is considered a new platform in Malaysia, this level of awareness was a good indicator that the respondents were aware of the existence of crowdfunding platforms. Next, the present study also provided several examples of online or website crowdfunding platforms such as Kickstarter, Pitch-in, Mystartr and crowdonomic. The results show that 45.2% of the respondents were aware of the existence of these crowdfunding platforms. This shows that the respondents are either looking for a new avenue to invest their surplus funds or are simply looking to obtain information about the crowdfunding platforms.

Furthermore, they were willing to contribute and invest in projects that use a crowdfunding platform to raise capital. The results indicated that 80.6%, or a majority of the respondents, are interested in investing in a crowdfunding platform. This is important because it indicates the level of trust the respondents have in online crowdfunding platforms and also shows that their investment behavior has been transformed to a new avenue when compared to the traditional financial intermediaries. This result may be influenced by the movement of the Malaysia Central Bank to support the expansion of crowdfunding platforms in Malaysia. This will boost the confidence of investors to invest in crowdfunding platforms.

The final question in the survey attempted to identify the factors that influence the experts' investment in a crowdfunding platform. There are four factors listed on the questionnaire which include functionality, content, customer service and interface design. The results showed more than 50% of the respondents agreed that functionality, content

and customer service are important factors that influence their investment in a crowdfunding platform. Only 64.5% of the respondents reported being influenced by interface design.

Table 5
Combined priority vectors for all of the criteria of the decision hierarchy

Crowdfunding Platform Quality Factors Selection	Value	Ranking
Functionality	0.2850	1
Content	0.2600	2
Interface design	0.2340	3
Customer Service	0.2200	4
Consistency Index (CI)	*0.0100*	Accepted

n = 31 respondents

Table 5 shows the output generated based on the Analytic Hierarchy Process (AHP). This analysis examined the ranking of the factors and prioritized the factors according to the respondents' preference. As mentioned previously, we used Expert Choice (EC) to generate a priority vector as presented in Table 6. EC combined the judgments geometrically for each cell of the pairwise comparison matrix and postulated a single pairwise comparison matrix where the system indicated a priority vector.

The questionnaires completed by the respondents are shown in Appendix 1. We collected demographic information, degree of awareness about crowdfunding and the pairwise comparison judgments.

There are four factors, namely (i) functionality, (ii) content, (iii) interface design and (iv) customer service. In order to validate the output of the rankings, a consistency index (CI) was calculated. Based on the result, the CI was 0.0100, which is less than the threshold of 0.10. Therefore, the CI result was valid and within the acceptable threshold.

The highest priority of the criteria for crowdfunding is functionality, followed by content, interface design and customer service, respectively. This means that functionality is the most influential factor for crowd funders. This finding is consistent with Andreou et al. (2005) and Hsiu-Fen Lin (2013) who identified that the components of functionality such as interoperability, suitability, security, compliance and accuracy are the most important for the investor who invests in a crowdfunding platform.

Besides functionality, crowd funders are looking for quality content on the platform, which should deliver the message clearly and be friendly to the investors. Chan and Alern (1999), Venkatesh and Ramesh (2002) and Vrechopoulos and Doukidis (2003) found that the content of an online platform, especially for investment purposes, is important to attract and give confidence to an investor using this platform. Therefore, crowdfunding online intermediaries should emphasize the content, which will determine the participation of the investor in their investment online platform.

Next is interface design, followed by customer service. These two factors are also important because the validity of the results show that all of the factors tested in this

study are important. Therefore, based on this result, crowdfunding platform providers should emphasize the following ranked priorities based on the study output and in order to attract more investors who are looking for a new avenue of investment, especially in the online platforms.

5. Limitations and future research

This paper has some limitations. First, this study is limited to respondents in the Klang Valley of Malaysia and cannot be generalized to other states of Malaysia. Therefore, this study can be enhanced by expanding the coverage area. Furthermore, the variables used in this study are limited, and other variables can be incorporated in future research.

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APPENDIX

Appendix 1

DETERMINING THE RELATIVE IMPORTANCE OF CROWDFUNDING PLATFORM QUALITY FACTORS

This appendix shows the message we sent to potential respondents. Part A was for collecting demographic information. Part B was used to collect information about the awareness the participants had about crowdfunding. Part C were the questionnaires used to collect the pairwise comparison matrix judgments.

Dear Madam/Sir,

This questionnaire aims to understand the quality factors of crowdfunding platforms. A crowdfunding platform is defined as an '*online web-based platform that raises a small amounts of money from a large number of individuals or organisations to fund a project, a business or personal loan, and other needs*'. Your support is the most important factor for the success of this research. The information you provide will be held **confidentially** and **totally anonymously.** Furthermore, the results will be shown only in an aggregate form, so that it is impossible to trace this information back to you individually. The data collected through this study will only be used for academic research purposes. If you want to get additional information and feedback about the purpose and results of the study please get in touch with us.

Thank you for your time.

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Part A:

Gender	[ ] Male [ ] Female
Age	[ ] 20-30 Years [ ] 31-40 Years [ ] 41-50 Years [ ] > 50 Years
Marital Status	[ ] Single [ ] Married [ ] Divorced
Educational Level	[ ] No education [ ] Secondary (SPM) [ ] Diploma [ ]Degree [ ] Postgraduate (Master/PhD)
Occupation	[ ] Public Sector [ ] Private Sector [ ] Self Employed [ ] Housewife [ ] Retired [ ] Student
Number of family members	[ ] One [ ] Two [ ] Three [ ] Four [ ] More Than Four
Monthly Income	[ ] ≤ RM1000 [ ] RM1001 – RM2000 [ ] RM2,001- RM3000 [ ] RM3,001- RM4000 [ ] RM4,001- RM5000 [ ] > RM5000
Religion	[ ] Islam [ ] Christian [ ]Buddhist [ ]Hindu [ ]Others (_____)

Part B. Crowdfunding Platform Awareness

CROWDFUNDING PLATFORM is defined as an *'online web-based platform that raises small amounts of money from a large number of individuals or organisations to fund a project, a business or personal loan, and other needs'*.

Have you ever heard of crowdfunding platform?	[ ] Yes [ ] No
Have you ever heard of websites such as *kick-starter, pitch in, mystartr* or crowdonomic media?	[ ] Yes [ ] No
Are you interested to donate your money through crowdfunding platform to fund a project, a business or personal loan, and other needs?	[ ] Yes [ ] No
What are the factors that influencing you to donate your money through crowdfunding platform? (you may tick **more** than one)	] Functionality] Content] Customer Service Interface Design Others (_____)

Part C. Crowdfunding Platform Quality Factors Selection

Note: For each statement below, Please COMPARE the relative IMPORTANCE factors with respect to crowdfunding platform quality. CHOOSE and CIRCLE ONLY ONE NUMBER per row by using the following scale:

Verbal judgment of preference	Rating
Equally preferred	1
Equally to moderately preferred	2
Moderately preferred	3
Moderately to strongly preferred	4
Strongly preferred	5
Strongly to very strongly preferred	6
Very strongly preferred	7
Very strongly to extremely preferred	8
Extremely preferred	9

Crowdfunding Platform Quality Factors Selection Criteria

1.	Functionality	9	8	7	6	5	4	3	2	**1**	2	3	4	5	6	7	8	9	Content
2.	Functionality	9	8	7	6	5	4	3	2	**1**	2	3	4	5	6	7	8	9	Customer Service
3.	Functionality	9	8	7	6	5	4	3	2	**1**	2	3	4	5	6	7	8	9	Interface Design
4.	Content	9	8	7	6	5	4	3	2	**1**	2	3	4	5	6	7	8	9	Customer Service
5.	Content	9	8	7	6	5	4	3	2	**1**	2	3	4	5	6	7	8	9	Interface Design
6.	Customer Service	9	8	7	6	5	4	3	2	**1**	2	3	4	5	6	7	8	9	Interface Design

(i) Functionality: Accessibility, response time, mobility, security ; (ii) Content: Accuracy, currency, relevance, completeness ; (iii) Customer Service: Reliability, responsiveness, trust, empathy ; (iv) Interface Design: Multimedia capability, format, understandability, navigability

#Thanks for your participation#