CROWDFUNDING: EXAMINING THE USER MOTIVATION FOR FUNDING AS THE BASIS FOR DESIGNING IMPROVED FUNDING ALLOCATION STRATEGIES

by

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ABSTRACT

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CROWDFUNDING: EXAMINING THE USER MOTIVATION FOR FUNDING AS THE BASIS FOR DESIGNING IMPROVED FUNDING ALLOCATION STRATEGIES

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The emerging crowdsourcing paradigm, the social web and the practices of open innovation are generating many economic and social benefits. Crowdfunding is derived from crowdsourcing, and is driven by “the crowd” of online communities. They engage and interact using socio-technical systems, and help innovators and entrepreneurs create new ventures. Innovation leads to new businesses and stimulates the economy through the increase in jobs, products and services. Crowdfunding systems such as Kickstarter and IndieGogo have helped to increase the available funding for startups; and have played a role in strengthening the economy. Weaknesses in crowdfunding systems have limited the numbers of successfully funded projects due to the suboptimal mechanism design. Rules about “success” of projects means that invested funding is not utilised. The success of crowdfunding projects relies on backers pledging enough money to achieve their funding goal. Using a mixed-methods approach, this research examines user motivation for funding in association with the funding amount. Our findings suggest that there are statistically significant differences among age groups in the amount pledged based on their motivations for funding, in which this research drew a number of positive and negative associations between them. The findings presented tell project creators who (gender and age group) pledge high/low funding amount based on what motivations (e.g. reward, support, social good).
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Declaration Of Authorship

I, Bader Almeer, declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

CROWDFUNDING: Examining the User Motivation for Funding as the Basis for Designing Improved Funding Allocation Strategies

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## ACKNOWLEDGEMENTS

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CHAPTER 1: INTRODUCTION

Innovation models have shifted from “closed innovation” to “open innovation” in leading industries around the world, in which ideas are created, used, re-used and/or extended on within and outside the organisation (Sloane, 2010). That enabled crowdsourcing technologies to evolve, bringing millions of Internet users across the globe to collectively solve problems as well as co-create products and services.

Crowdfunding as an innovative socio-technical system, is an alternative source of funding that made funds available to the public. It is helping a great number of people creating new ventures as well as supporting charitable causes, without the need to borrow money from banks. For most people, borrowing from banks as well as business angels is not an option simply because it is difficult to meet their conditions such as high interest rates and losing intellectual property. However, with a number of features offered by crowdfunding systems, individuals as well as organisations seeking funding on the platform find it challenging to successfully raise the funds. The lack of planning a project as well as lack of information available on users funding those projects are resulting in many projects failing to raise the funds they need.

Underpinning users’ motivations for funding associated with the funding amount leads to improving the funding allocation strategies. Enabling crowdfunding projects securing the funds by connecting them to the right groups of funders, including their gender, age group, their motivations for funding, and the amount they pledge based on these motivations. Unlike investigating the motivations for funding alone, this reveals why people tend to fund crowdfunding projects only, without providing any further insights into the amount these users pledge based on these motivations, including their genders and age groups. For instance, this research reveals that based on the social motives such as connecting with others, in some cases, users pledge a higher funding amount than those interested in the reward. And in some other cases, users interested in the reward pledge a higher funding amount than those with social motives depending on their age group.

This research aims to fill this gap found in the literature, relating crowdfunding to a wider context covering key elements of innovation and crowdsourcing. This chapter starts with an overview of innovation, the World Wide Web, crowdsourcing, crowdfunding, including
its economic value, the motivations for funding as well as the success factors, and the scope
and objectives of this research.

1.1 Innovation

Innovation and small and medium-sized enterprises (SMEs) fuel the economy and create new jobs (Rothwell and Zegveld, 1982). Crowdfunding systems speed up the process for obtaining funds, reducing the barriers to entrepreneurs and innovators creating new ventures (Rothwell and Wenzlaff, 2011). Crowdfunding works as an alternative source of funding, helping individuals and groups who are unable to borrow from banks (such as recent graduates) to obtain funds and form their own ventures (Ramsey, 2012; Younkin and Kashkooli, 2016).

Innovation offers society the promise of increased growth and productivity (Chesbrough, 2003). Bessant, and Möslein (2011) argue that innovation is always better if more people are able to contribute. Web 2.0—also known as the Social Web—connects people, enhancing users’ coordination and enabling them to benefit from a variety of technological tools and resources supporting innovation (von Hippel, 2005; Bessant, and Möslein, 2011). Thus, maximising the use of these resources will help innovators generate greater economic and social value through the practice of “Open Innovation” (Chesbrough et. al, 2006).

1.2 The World Wide Web

According to its inventor Tim Berners-Lee, the World Wide Web (Web) is “the universe of network-accessible information, an embodiment of human knowledge” (W3, 1992). However, the Web can also be thought of as the infrastructure for “Social Machines” (Shadbolt, et al, 2013). Smart and Shadbolt (2014, p.4) refer to Social Machines as:

“Web-based socio-technical systems in which the human and technological elements play the role of participant machinery with respect to the mechanistic realization of system-level processes.”

The Social Web (Web 2.0) allows users form online communities, enabling them to contribute collectively, pooling their resources for increased efficiency and thus maximising the potential for innovation (Bessant, and Möslein, 2011).

1.3 Crowdsourcing

Over the past decade, online crowdsourcing technologies have emerged, enabling the use of new problem-solving and production models (Brabham, 2008). There are growing
numbers of crowdsourcing marketplaces being launched on the Internet, such as InnoCentive, TopCoder, and Kaggle (Gurin, 2014). InnoCentive alone has over 380,000 active problem solvers from 200 countries on the platform (InnoCentive, 2017). According to Brabham (2008) and Gurin (2014), crowdsourcing marketplaces like InnoCentive solve complex problems using prizes that are allocated to the winning solutions. However, crowdsourcing initiatives such as this require skilled individuals to undertake certain tasks (Howe, 2006). InnoCentive for instance, requires researchers and professors to solve complex problems (Estellés-Arolas and González-Ladrón-de-Guevara, 2012). In contrast, Amazon Mechanical Turk (mTurk) does not require such expertise since workers are often asked to complete simple tasks, which usually take only a few minutes (Estellés-Arolas and González-Ladrón-de-Guevara, 2012).

According to Estellés-Arolas and González-Ladrón-de-Guevara (2012), there is not yet a specific definition of crowdsourcing. They conducted a study that analysed 34 definitions of the term from different sources. Based on this research, they were led to define the term “crowd” as a group of individuals and “sourcing” as the supply of those individuals. Prpić et al. (2015) refer to the “crowd” as a group of people who are working together to achieve a certain objective. But according to Howe (2006), the first author that defined crowdsourcing, the term refers to an open call for a large network of sole individuals to undertake certain tasks.

However, Saxton et al. (2013) gives a more restrictive definition of crowdsourcing, specifying that it has to use “advanced internet technologies” for harnessing the energies of “a virtual crowd” for undertaking tasks. According to Saxton et al. (2013), web-based technologies offer the means to both reach out and manage massive crowds. Saxton et al. (2013) compared crowdsourcing to the “wisdom of crowds” (Surowiecki, 2004) and stated that crowdsourcing is different since the wisdom of crowds only taps into the opinions of the crowd, whereas in crowdsourcing it is their skills which are employed.

1.4 Crowdfunding

The innovation behind crowdfunding helps reduces the barriers to raising capital in order to create a new venture (Mollick, 2014; Blether et al., 2011; Visimara, 2015; Röthler and Wenzlaff, 2011; Xu, 2016). Individuals and groups have access to a variety of resources, including finance and information, which support them in the process of transforming their ideas into reality (Buysere, et al., 2012; Mollick, 2014). Through crowdfunding, new talents
now have an alternative source of funding (Ramsey, 2012) which brings with it a number of advantages, such as accessibility, as well as disadvantages, such as increased risk of fraud (Bletcher et al., 2012; Vismara, 2015; Sigar 2012). Unlike traditional financial institutions, in which their main objective is to earn interest on the money they lend to people. However, the success rate on Kickstarter is between 43 – 51.53% (Mitra and Gilbert, 2014), while up to 60% of funds are returned to the users (Wash and Solomon, 2014). These rates could be enhanced if user motivation is examined in depth in respect to the association between that and the amount the user pledges in order to design the basis for improved funding allocation strategies.

Crowdfunding is one type of crowdsourcing that involves the contribution of money towards new projects and new venture creations (Howe, 2008; Steinberg et al., 2012). Belleflamme et al. (2013, p.7) defined crowdfunding as an “open call” in which money is given through the Internet either as a donation or an exchange of value (e.g. rewards or voting rights). Crowdfunding platforms offer two fundraising models: “All-or-Nothing”, in which the campaign must achieve the funding goal (or more) in order to receive the money; and “Keep-What-You-Raise”, where the campaign gets to keep any funds raised without it being conditional on achieving a particular funding goal (Gerber et al., 2014). Furthermore, there are three key elements involved in establishing a crowdfunding campaign: 1) the crowdfunding platform (such as Kickstarter); 2) project creators (fund seekers); and 3) backers (funders) (Hemer, 2011; Haas et al., 2014; Belleflamme et al., 2013:2015).

Entrepreneurs using crowdfunding platforms are generally extremely innovative individuals (Jeffries, 2013) and thus play an important role in dramatically accelerating innovation within society overall. Furthermore, Ordanini et al. (2011, p.455) stated that “all interview respondents agreed that consumers participate in crowdfunding websites because they like engaging in innovative behaviour”, while the executive manager of SellaBand (a crowdfunding platform for music) described crowdfunding participants as “innovators in the way they use technology to interact (cited in Ordanini et al., 2011, p.455). Kuo and Gerber (2012, p. 1601) also stated that “crowdfunding offers a new type of creativity support tool where creators rely on the crowd to collect, create, relate, and donate creative work”.

4
1.4.1 Economic Value of Crowdfunding

The World Bank (2013, p.26) stated that “by leveraging technology, crowdfunding can serve as an enabling mechanism for new venture formation, job creation and inclusive economic growth”. According to Mollick and Kuppuswamy (2014), successful crowdfunding projects continue to operate, with 32% earning sustainable revenue over $100k (£69k) per year (Figure 1). Also, each successful crowdfunding project tends to hire an average of 2.2 employees (Mollick and Kuppuswamy, 2014). Massolutions (2013) indicated that crowdfunding makes an important contribution towards global economic growth, which is estimated by the World Bank (2013) to reach $96 (£66.4) billion per year by 2025 (Figure 3). Accordingly, crowdfunding is clearly playing an effective role in the economic ecosystem, helping entrepreneurs to raise money to form new ventures, which in turn creates new jobs and earns sustainable revenues (World Bank, 2013; Mollick and Kuppuswamy, 2014; Ramos and Gonzalez, 2016).

**Figure 1: Annual Revenue of Crowdfunded Business Start-ups**

![Bar chart showing percentage of projects by revenue]  
- 38.50% of projects earned up to $25k  
- 24.50% earned between $25k and $100k  
- 32% earned over $100k

1.4.2 The Motivation for Funding

According to Deci and Ryan (2002), there are two key motivations for funding: intrinsic and extrinsic. These motivations apply to users taking part in online communities (Füller, 2010; Antikainen et al., 2010), including users funding crowdfunding projects (Gerber et al., 2012; Belleflamme et al., 2014; Mitra and Gilbert, 2014; Gerber and Hui, 2013; Muller et al., 2013; Gierczak et al. 2016; Bretschneider et al., 2014; Argawal et al., 2010; Ordanini et al., 2011; Haas et al, 2014).

Previous studies suggested that the motivations for funding crowdfunding projects vary among users (Belleflamme et al., 2013; Gierczak et al. 2016), as well as the types of crowdfunding, such as reward-based or equity-based (Hemer et al., 2011; Gierczak et al. 2016).
According to Gerber et al. (2012), backers in reward-based crowdfunding are motivated by the reward, supporting creators and causes, strengthening connections, and being part of a community. Argawal et al., (2010) stated that backers in a reward-based crowdfunding platform are emotionally attracted to the projects; often they know the person(s) who created the projects, it is local, and/or they are already familiar with the project.

In contrast, Buysere et al. (2012) suggested that backers in a peer-to-peer lending crowdfunding platform are only motivated by the high financial returns; while in a donation-based platform, backers are motivated by the social return (an intrinsic motive being the social good that will result). Other studies suggested that backers in a reward-based crowdfunding platform are mainly motivated by the reward, alongside an interest in innovation, social contact, and fun (Hemer et al., 2014; Guerzoni et al., 2016).

However, previous studies have suggested that knowledge of the motivations for funding is still limited, hence they call for further research in this area to provide a deeper understanding of the subject (Gerber et al., 2012; Belleflamme et al., 2014; Mitra and Gilbert, 2014; Gerber and Hui, 2013; Muller et al., 2013; Gierczak et al. 2016; Bretschneider et al., 2014; Argawal et al., 2010; Ordanini et al., 2011; Haas et al, 2014). With Kickstarter alone, there are more than 15 million users funding and creating projects. Therefore, this research re-investigates users’ motivations for funding and how they are associated with the funding amount, and analyse how these motivations vary among users (including genders and age groups), to connect the right backer to the right project.

### 1.4.3 The Success Factors

The key factors required for crowdfunding projects to succeed are identified in previous studies. Wash (2013) stated that a successful crowdfunding project has to offer valuable rewards in return for the money pledged. According to Greenberg et al. (2013) and Mitra and Gilbert (2014), in addition to the rewards, to help in raising funds project creators need to have social media connections to promote the project. They also stated that producing a good and informative video about the project is one of the key success factors. Moreover, being a featured project on the crowdfunding platform maximises the chances of success (Greenberg et al., 2013; Mitra and Gilbert, 2014). According to Xu et al. (2014), the project’s updates are a key success factor as they help the project creators to engage with their target audience. According to them, projects are likely to raise the funds they need if they
engage with their target audience effectively, and that this matters more than simply publishing the perfect project description without any engagement.

Moreover, one of the major success factors found in previous studies is that the funding amount needs to be relatively low, combined with a short project duration (Mitra and Gilbert, 2014; Mollick, 2014; Kuppuswamy and Bayus 2015). Aiding future crowdfunding campaigns by better understanding the factors behind the success of previous projects could lead to many economic and social benefits, such as helping entrepreneurs raise the money they need to form new ventures and thus creating new jobs (Howe, 2008; World Bank, 2013; Ramos and Gonzalez, 2016).

1.5 Scope and Objectives

The scope of this research (Figure 2) is to understand the phenomenon of crowdfunding, including its types, characteristics, economics, and fundraising models. Crowdfunding brings a number of benefits to the economy and to society in general. According to Kitchens and Torrence (2012), crowdfunding helps to create a healthy economy by creating new jobs (Mollick and Kuppuswamy, 2014; Ramos and Gonzalez, 2016) and generating a sustainable annual revenue (Mollick and Kuppuswamy, 2014).

This research aims to provide a deeper understanding of the relation between the various motivations for funding and the amount pledged. The findings of previous studies only show the motivations for funding, but the intention here is to provide a greater insight into how these motivations determine the amount that backers pledge towards crowdfunding projects. Moreover, the motivations for funding can also be used to define the characteristics of backers, and by applying factor analysis associations can be drawn between these different motivations. Furthermore, this research is also interested in finding out whether one kind of backer (i.e. new backers and returning backers) contributes more to the success of projects and whether that could be considered as one of the factors behinds a project’s success (Mitra and Gilbert, 2014; Greenberg et al., 2013; Mollick, 2014; Wash, 2013; Kuppuswamy and Bayus, 2015; Xu et al., 2014). Re-investigating users’ motivations for funding, including how much money pledged based on these motivations, as well as how genders and age groups differ in this respect should help project creators reach out their target audience effectively. This should also help in improving the design of crowdfunding systems and funding allocation strategies in future.
1.5.1 Research Questions

This research is centred around five main questions:

1. **In a crowdfunding platform, does the funding amount differ among genders or age groups?**
   
   We gathered information about the funding amount that backers pledge to crowdfunding projects. We compared the means of their funding amounts in order to provide more insight determining the high- and low-paying backers.

2. **In a crowdfunding platform, what are the users’ motivations for funding?**
   
   We gathered data from a number of resources, such as literature and web forums, and conducted an online survey to understand what motivates users to fund crowdfunding projects. This is an essential data set to answer other questions.

3. **Are there any associations between the motivations for funding?**
   
   The associations between the various motivations for funding should draw together a number of components that define the characteristics of users. Each user is driven by a number of motivations rather than just one.

4. **Are there any associations between the users’ motivations for funding and the funding amount?**
   
   Previous studies have only focused on the users’ motivations for funding. This research intends to establish a deeper understanding of how the motivations for funding determine the amount that backers pledge to crowdfunding projects. The participants of the online survey conducted are distinguished by five funding amount ranges, which we analysed in association with the funding amount, starting...
from low to high. This has been applied on three variables: 1) the age groups (e.g. 18 – 24); 2) the funding amount (e.g. low/high); and, 3) the motivation for funding (e.g. reward).

5. How does the kind of backer relate to the success of the project?

There are two kinds of backers: new backers and returning backers. Having previously funded at least one project, the returning backers come within the established user-base of the crowdfunding platform, whereas the new backers, funding a project for the first time, do not. This research collected some data to understand whether one kind of backers contributes more to the success of projects. This data contains a number of variables from each projects’ page in our sample, including the number of new backers and returning backers, and the outcome of the project (i.e. successful/unsuccessful).

1.5.2 Hypotheses

- Hypothesis 1: The means of the funding amount are equal among genders
- Hypothesis 2: The means of the funding amount are equal among age groups
- Hypothesis 3: There is no association between the motivations for funding
- Hypothesis 4: There is no association between the funding amount and the motivation for funding
- Hypothesis 5: Both kinds of backers contribute equally to the success of projects

In this chapter, an overview of this research has been explained. Innovation on the Web interacts with the rise of crowdfunding and the socioeconomics of crowdfunding. As such, users access crowdfunding systems through the Web, they interact, innovate and raise funds. This particular phenomenon has tangible outcomes beyond the financial means. As discussed in this chapter, successful crowdfunding projects create jobs that members of the society as well as the economy benefit from. The contribution of this research is to fill the gap related to the success of projects. Revealing what motivates users to pledge money to crowdfunding projects, and how users’ motivations are associated with the funding amount among genders and age groups, should help project creators reaching out their target audience more effectively, as well as improving crowdfunding systems. In order to achieve the aims and objectives of this research, next chapter discusses innovation, open innovation and crowdfunding and relate them to the context of crowdfunding. A more detailed discussion on the motivations for funding and the success factors in crowdfunding provides the foundation for this research to investigate the motivations for funding in association with the amount pledged, which are analysed among genders and age groups.
CHAPTER 2: LITERATURE REVIEW

In the emerging digital economy that is fuelled by innovation, crowdsourcing paradigm has emerged with the practice of open innovation on the social web. This is generating many social and economic benefits across the globe, in which crowdfunding has evolved. This chapter discusses a number of key elements, including innovation and the emerging era of open innovation, in which a number of definitions and examples provided shaping a wider context of crowdsourcing as well as crowdfunding. Models of crowdsourcing, including examples and impact of crowdsourcing are also discussed in this chapter, which followed by crowdfunding that is discussed in-depth, including its definitions, economics and fundraising models, and users’ motivations for funding.

2.1 Innovation

In order to remain competitive and sustain productivity in a rapidly changing global landscape, organisations have in recent years shifted focus to adopt more collaborative innovation strategies. While innovation itself continues to remain at the centre of society, economy, government and industry (European Commission, 2010), approaches to innovation have shifted dramatically towards collaboration, digitalisation, and globalisation (Curley & Salmelin, 2013; De Backer & Cervantes, 2008; Lenka et al., 2016). Increasingly, the inflow and outflow of knowledge is used to expand and improve the success of various innovations (Chesbrough, 2006). This approach is termed “open innovation” and was originally coined by Chesbrough (2003) to describe the flow of knowledge management to fuel innovations. The definition was later expanded to align the open innovation process with the business goals of an organisation (Chesbrough & Bogers, 2014). The integral characteristics of open innovation is for firms to utilise both internal and external innovations to successfully maximise value from the development and marketing of new products (Grönlund et al., 2010). This section provides an overview of the definitions, key concepts and perspectives emerging in the field of open innovation.

2.1.1 Definitions of Innovation

Although there are several descriptions of innovation in the literature, academic scholars generally agree that traditional innovation can be best described as novel ideas presented as both processes and outcomes (Andreson et al, 2004; Crossan & Apaydin, 2010; Maital &
Seshadri, 2012; Tidd & Bessant, 2014). More specific definitions of innovation encompass the notion that it involves novel products or services being transformed into a successful commercial outcome (Baregheh et al., 2009; Rogers 1995; Van de Ven, 1986; Garud et al., 2013). Therefore, simply put, innovation in the context of organisations can be thought of as new ideas being translated into value through a series of methodical phases. The literature also describes traditional innovation broadly referring to distinct activities, from the development through to marketing of a novel or updated product, service or technology (Leger & Swaminathan, 2007). Innovation may also involve the generation of an improved existing product or process which may be more may nevertheless be more costly than its antecedents (Kline & Rosenberg, 2010).

The domain of innovation is often described as being complex and multi-dimensional (Crossan and Apaydin, 2010). The complexity of innovation was recently demonstrated in a systematic review which presented its findings as a multi-level theoretical construct of innovation related to leadership, managers and business processes (Crossan and Apaydin, 2010) supported by distinct theories (Hambrick and Mason, 1984; Eisenhardt and Martin, 2000; Prahalad and Hamel, 1990).

Alternatively, Rogers (1983, p.11) defines an innovation as “an idea, practice, or object that is perceived as new by individual or other unit of adoption”. Small and medium-sized enterprises (SMEs) drive economic growth through creating new innovations and increasing employability (Rothwell and Zegveld, 1982). Rogers (1983) argues that diffusing an innovation takes time and effort to be adopted by the society, during this process innovators communicate with the potential adopters through certain channels to persuade them. As stated in the diffusion of innovations theory, there are five groups of innovation users: 1) innovators, 2) early adopters, 3) early majority, 4) late majority, and 5) laggards (Rogers, 1983). Also, Rogers (1983) argues that in order for an innovation to be adopted by the society, there are five factors affecting adopters’ decisions: 1) relative advantage, 2) compatibility, 3) complexity, 4) trialability, and 5) observability of that innovation.

2.1.2 Adoption of Innovation Process

Innovation adoption is prevalent across a diverse range of fields, such as economics (Gopalakrishnan, and Damanpour, 1997), marketing (Hurley and Hult, 1998), business (Hazzan, 2016) and education sectors (Mishra, 2015). In organisations, the adoption of
innovations progresses systematically through multiple phases. According to Damanpour et al. (2006), these can be categorised into three distinct overarching stages: initiation (or preadoption), adoption (decision) and implementation. Firstly, the initiation phase requires the organisation to recognise existing innovations, determine suitable new innovations and propose adoption (Gopalakrishnan and Damanpour, 1997). Secondly, the decision phase is driven by high-level executives to strategically evaluate the proposed innovation in order to allocate resources accordingly (Meyer and Goes, 1988). And finally, the last phase involves the implementation of the proposed innovation by running the idea through trials by end users as well as the organisation’s members (Meyer and Goes, 1988; Rogers, 1995).

2.1.3 Types of Innovation

There are several common types of innovation described in the literature, such as product (Wang, 2016), organisational (Oke et al., 2007), technical (Damanpour, 1991), process (Gunday et al., 2011) and incremental (Pisano, 2015). Moreover, innovation has also been categorised depending on its impact on stakeholders using terms such as disruptive (also known as radical or nonlinear) (Hamel, 2000; Pisano 2015) and non-disruptive (sometimes referred to in the literature as incremental or linear) (Hamel 2000; Moore, 2004). In addition, the integration of passive, active or reactive innovation strategies (Dodgson, 2008) with other types of approach that consider the business environment (Prajogo, 2016) may result in the implementation of high-end technology, ultimately leading to improved business performance (Slater and Mohr, 2006).

Although internal research and development (R&D) activities are generally associated with innovations within an organisation, many do not actually generate innovations internally (Santamaria, Nieto, & Barge-Gil, 2009), with most firms tending to participate in activities that lead to the adoption of innovations generated by external businesses (OECD, 2005). It appears that in the current global dynamic landscape, an approach which relies on internal R&D alone for sustaining competitiveness, and thus the organisation’s survival, is not sufficient. Instead, there is a widespread emergence of strategic models maximising collaborations to improve the overall quality of innovation by using, for example, such approaches as the open innovation model (Tidd et al, 2001).

2.1.4 Emergent Era of Open Innovation

During the past few decades, accumulating empirical evidence supports the notion that collaborations with external firms imparts considerable advantages to improve the overall
performance and rapid diffusion of the innovation practices of an organisation (Chesbrough, 2003; Laursen and Salter, 2006; Lichtenthaler and Lichtenthaler, 2009).

Consequently, numerous firms have adopted the open innovation approach (Bianchi et al., 2011; Dodgson et al., 2006; Piller & Walcher, 2006; Wynarczyk, 2013), which also forms one of the key pillars of innovation policies (Christensen et al., 2005; Giannopapa et al., 2010).

The concept of open innovation, as introduced by Chesbrough (2003) the ‘New Era of Open Innovation’, evolved from the realisation that new industries entered the market with innovations acquired externally and without much utilisation of their own resources. Baldwin and von Hippel (2011, p.1400) also introduced ‘open collaborative innovation’ and defined it as “an innovation, which is open in our terminology when all information related to the innovation is a public good – nonrivalrous and nonexcludable”. In recent years, with the advent of highly sophisticated technological platforms that allow for rapid information transfer, many companies have learnt to adapt to this dynamic market by taking advantage of external business models (Kirschbaum, 2005). In broader terms, the open innovation concept not only describes the influence of external knowledge as the driving force for internal growth, but also clearly identifies the internal arrangement required for an organisation to manage an externally-derived innovation process (Gronlund et al, 2010). One of the benefits attributed to open innovation is the leveraging of novel product development on external finances with the continued opportunity to create an innovative culture in a symbiotic relationship with external businesses (Docherty, 2006).

Therefore, in order to benefit to the full extent from such external opportunities and adapt open innovation principles effectively, certain key capabilities need to be developed, beyond technological systems, such as identifying potential opportunities and collaborators, evaluating suitability of each opportunity and recognising commercialisation value (Fetterhoff & Voelkel, 2006).

2.2 The Rise of Crowdsourcing

In the past decade, the ways in which organisations conduct their businesses and operate have changed dramatically, mostly because of technology. Systems of crowdsourcing have supported organisations’ evolution, providing them with new socio-technical systems for acquiring talent and gaining specialised skillsets from a global pool of resources. One of the earliest definitions of the term crowdsourcing was provided by Howe (2006), which
outlined the rise of crowdsourcing as a method for acquiring crowd-based talent by different organisations:

“Simply defined, Crowdsourcing represents the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call. This can take the form of peer-production (when the job is performed collaboratively), but is also often undertaken by sole individuals”

Howe (2008, p.177) also stated that “crowdsourcing harnesses people's creative energies”. Crowdsourcing is a widely used term today in the field of business research, as the potential to apply this idea as a business model has become increasingly interesting for many corporations (Brabham, 2008). Prpić et al. (2015, p.77) refer to the “Crowd” as “the context of people who self-organised around a common purpose, emotion, or experience”.

Estelles-Arolas and Gonzales-Ladron-de-Geuvara (2012) provided an extensive overview of the various definitions of the term ‘crowdsourcing’, in which a comprehensive, integrated definition could emerge from the existing literature. According to Schenk and Guittard (2011), crowdsourcing is a variation of outsourcing by organisations in the sense that a large group of individuals are utilised and mobilised by using open tender or open call through an internet-based platform. The ‘crowd’, in this particular context, refers to a large anonymous and heterogeneous set of individuals from different geographical, racial, cultural, and socio-economic backgrounds, who cannot be formally identified or recognised (Nambissan and Sawnhey, 2007). However, there is a lack of consensus between various researchers with regards to the classification of different examples of crowdsourcing initiatives. For example, Buecheler et al. (2010) referred to Wikipedia as one of the prime examples, in which multiple individuals from different backgrounds come together in gathering information and maintaining one of the largest repositories of online information. Moreover, Huberman et al. (2011) provides use cases of websites and online platforms such as YouTube as examples of crowdsourcing initiatives for the generation of user-based online content. Furthermore, in the context of the taxonomy of crowdsourcing proposed by Geiger et al. (2011), a number of different examples of crowdsourcing (e.g. TripAdvisor, ReCaptcha, Threadless, etc.) have been mentioned. In the past decade, a considerable amount of research has been conducted exploring the utilisation and implications of crowdsourcing, studying the ways in which internet-based crowds are
changing the traditional methods of acquiring talent for resource creation by international organisations. Some of the emerging aspects of this area of research include the examination of crowdfunding (Belleflame et al., 2013), human computation (Ipeirotish and Paritosh, 2011; Michelucci, 2013), peer production (Benkler and Nissenbaum, 2006), micro-management of firm-level tasks (Ipeirotis and Paritosh, 2011; Michelucci, 2013), open collaboration (Prpic et al., 2015) and innovation (Majchrzak and Malhotra, 2013). With regards to the theoretical aspects of the development of crowdsourcing, several researchers have attempted to view crowdsourcing through various existing models, including a resource-based perspective of organisations, culminating in the “Theory of Crowd Capital” (Prpic and Shukla, 2013, 2014), the “Information Model” (Wang and Zhang, 2012), “System Theory” (Geiger et al., 2011), “Commitment Theory” (Bateman et al., 2011), “Transaction Cost Theory” (Horton et al., 2010), “Uncertainty Theory” (Hong and Pavlou, 2012), and the “Theory of Legitimate Peripheral Participation” (Jackson et al., 2015).

2.2.1 Models of Crowdsourcing

In the relevant past literature, a number of different crowdsourcing models have been examined based on their various internal and external characteristics and properties. Howe (2008) categorised four models of crowdsourcing, as shown in Figure 5. However, by examining crowdsourcing as a model for problem-solving, Brabham (2008) emphasised various practical examples of crowdsourcing, such as Threadless (an online competition-based firm, which crowdsources the design of their shirts) and iStockphoto (an online web-based firm, which deals in the sale of royalty-free stock photos, animations and video clips), which are primarily motivated by the problem-solution-based paradigm. Moreover, Shenk and Guittard (2011) emphasised a number of different factors for modelling and characterising different crowdsourcing initiatives, including the cognitive dimension of tasks, the nature of incentive, and the perceived benefits from the crowdsourcing activities. At the same time, the classification of crowdsourcing initiatives has also been modelled in terms of the type of selection criteria used to distinguish between integrative and selective crowdsourcing initiatives. Integrative initiatives are those based on the generation of content and information by different online crowds, allowing organisations to gain access to heterogeneous content in a convenient and cost-effective way. Whereas selective initiatives are used for the fulfilment of a specific need in the client organisations. These organisations look towards the wisdom of crowds in order to formulate a viable solution.
for the given problems, especially in organisations which lack of adequate in-house competencies (Shenk and Guittard, 2011).

According to Saxton et al. (2013), there are three primary elements associated with crowdsourcing which interact to create a crowdsourcing model (Figure 3).

**Figure 3: Crowdsourcing Elements (Saxton et al., 2013, p.3)**

Moreover, Prpić et al. (2015, p.80) illustrated the development of the crowd’s capabilities, as shown in Figure 4. Firstly, the organisation needs to determine the type of crowdsourcing it needs, identify the crowd in terms of who is taking part, and establish how the crowd contributions should be utilised (Prpić et al., 2015). From constructing a crowd to harnessing crowd capital, developing crowd capabilities relies on two key stages: acquisition and assimilation (Prpić et al., 2015). Prpić et al. (2015) refer to crowd acquisition...
as the process of allocating crowd resources mainly for contributing towards creating crowd capital. The second stage is assimilation, which is referred to as an aggregation and filtration process to choose the members that are best suited to contribute to certain tasks (Prpić et al., 2015).

One of the most interesting findings in the discussion around crowdsourcing and online communities is that money is not the key motivating factor that causes individuals to contribute collectively. As Howe (2008, p.15) states, “people typically contribute to crowdsourcing projects for little or no money”. Instead, building a reputation and being involved in dynamic competition are found to be the top motives (Howe, 2008). Shadbolt et al. (2013) argue that participants are intrinsically motivated by either fun, the joy of getting things done, gaining and sharing knowledge, being social, or benefitting from a group of people or society as a whole. However, Saxton et al. (2013) argue that despite the ease of participating in crowdsourcing projects, there are still management issues that require further research. For instance, how to manage the crowd effectively in order to achieve the desired goals. According to Saxton et al. (2013) managerial mechanisms must be designed in order to make improvements to crowdsourcing.

In addition, Saxton et al. (2013) examined different outsourcing initiatives in terms of their different models of operation. In order to classify the various initiatives, some of the models outlined by Saxton et al. (2013) include:

- The Intermediate Model, wherein a virtual workforce is mobilised using different online web portals in order to find, finish and earn through the web after solving R&D-based problems, e.g. Amazon Mechanical Turk.

- The Citizen Media Production Model, in which user generated content, such as news, programmes and commercials, are leveraged for revenue generation.

- The Collaborative Software Development Model, used for the development of software products and applications, in which different crowd-based resources are leveraged for performing a host of different software-development-based processes, ranging from idea generation and conception to software development and its production and sales e.g. CambrianHouse.
− The *Product Design Model*, wherein design information that is outsourced and submitted by the crowd is converted into products e.g. *Zazzle* and *Fluevog*.

− The *Peer-to-Peer Social Financing Model*, which is an alternate method for financing projects using online platforms for revenue generation and collection for various innovative applications and products e.g. *Kiva.org*.

− The *Consumer Report Model*, where crowd-based opinions and reviews on different products and services are used for generating official reports, which are then used by various international organisations and professionals, e.g. *ThisNext.com*, *Zebo.com*.

− The *Digital Goods Sales Model*, where an online crowd is used as a supply chain for the procurement of different crowd-generated information and resources, e.g. *iStockPhoto* and *ShuttersStock*.

− The *Knowledge-based Building Model*, in which domain specific knowledge is constructed using diverse experts and their contributions to specific online platforms e.g. *Wikipedia*.

− The *Collaborative Science Report Model*, which uses crowd input in projects and problems which artificial intelligence is not yet mature enough to tackle, such as analysing numbers and letters from distorted images, e.g. *GWAP.com*.

In the following section of the report some of the most popular and widely utilised crowdsourcing platforms will be discussed, along with the way that crowdsourcing is benefiting and impacting both the business world in particular and society in general. Singth et al., (2009, p. 244-245) highlighted five key elements necessary for crowdsourcing to be utilised:

a) A group of actors  
b) A set of resources available to those actors  
c) A set of actions that the actors take  
d) The collective results of the actions  
e) A way of evaluating the results
2.2.2 Examples of Crowdsourcing

Some of the research in this particular area suggests that the concept of crowdsourcing has been around for some time. Operating systems and software programs such as *Linux* and *Mozilla Firefox*, as well as *Wikipedia*, one of the largest online knowledge repositories, are some of the prime examples given of the utilisation of the knowledge and expertise of the crowd towards the development of a shared platform for collating and disseminating information, as well as collective application development (Libert and Spector, 2007; Barbier et al., 2012). In the past few years, a host of different platforms have successfully emerged as prime examples of the power of masses to generate content for different international firms. One of the most remarkable examples of an online crowdsourcing platform is *Amazon Mechanical Turk*, which utilises the power of the masses to solve problems that computers are not yet mature enough to solve. Some of these tasks include the recognition and identification of items in different photographs, writing product descriptions, examining real estate documents to highlight important information, to name just a few (Howe, 2006; Brabham, 2008).

In the past few years, *Amazon Mechanical Turk* has emerged as one of the most widely utilised online crowdsourcing platforms for both individuals and organisations. Here,
different individuals or organisations with various problems hire other individuals or specialists online for solving their particular problems in return for monetary compensation (Shank, 2016). Threadless is another example of a crowdsourcing platform which leverages the design capabilities of the masses in order to generate ideas regarding t-shirt design, while the opinions of the crowds are also used in order to gather feedback regarding different shirt designs and printing popular designs for sale and delivery to different online buyers (Brabham, 2008; Saxton et al., 2013). Another popular crowdfunding platform is InnoCentive, which is primarily used by individuals and organisations for the purpose of solving high-end scientific problems and issues. This allows international organisations to tap into the collective intelligence of the international scientific community for tackling various R&D-based problems (Brabham, 2008). Apart from the online crowdsourcing platforms mentioned above, some of the other popular platforms include mob4hire, eLance, 99Designs, NakedAndAngry, CambrianHouse, iStockPhotos, FossFactory, Zopa, Kiva, Zazzle, Emporis, and Gwap (Saxton et al., 2013).

2.2.2.1 InnoCentive

The online crowdsourcing marketplace was launched in 2001 and has established a user-base of over 380,000 problem solvers from 200 countries (InnoCentive, 2017). The CEO of InnoCentive, Darren Caroll, stated in an interview that their model is to link solution seekers with problem solvers (Allio, 2014). What is particularly interesting in their model is that InnoCentive posts problems that need solutions anonymously, without revealing the details of the client seeking them (Allio, 2014).

According to Gurin (2014), there are four groups of problem solvers on InnoCentive: students and academics, active researchers, retirees from related fields, and thinkers. Each group is motivated differently. For instance, retirees and experts are only participating in order to earn money, as they believe their expertise and valuable inputs should be paid for. This means that they do not participate in projects that do not pay them for their contributions. However, on the other hand, students and academics often participate in order to gain experience and build connections, and are therefore more likely to participate for free.

2.2.3 Impact of Crowdsourcing

There is a large body of work which attempts to examine the impact of crowdsourcing initiatives on different aspects of the economy. With the expansion of different crowd-
based data acquisition and associated applications, a number of different benefits have been reported by the literature (Comber et al., 2016). For example, in the case of land usage and deforestation, citizens of various regions have been involved and mobilised in order to keep track of regional developments in the geographical and environmental issues being faced by the different communities (Comber et al., 2016). A number of different studies have also attempted to explore the potential and perceived benefits of crowdsourcing. In this regard, Sorensen (2012) evaluated the impact of crowdsourcing and outsourcing on the overall funding and distribution of the film industry in the UK. A number of different studies have evaluated the importance of crowds in the various strategies for data labelling and for machine-learning-based applications (Zhou et al., 2012; Zhang et al., 2014; Tian and Zhu, 2015). Wang and Zhou (2016) highlighted the cost benefits of crowdsourcing-related machine-learning-based data acquisition, collection and associated applications. Similarly, Borchert et al. (2017) highlighted the impact of task-based recommendation systems in crowdsourcing platforms. Similar to outsourcing, one of the most widely highlighted impacts and benefits of crowdsourcing initiatives is the overall reduction in costs for the organisations engaging in such initiatives (Lampel et al., 2012; Saxton et al., 2013; Wang and Zhou, 2016). At the same time, the concepts of open innovation and collective intelligence, in the context of crowdsourcing in particular and the field of crowd science in general, have been linked with the leveraging of competitive advantage for organisations relying on crowdsourcing platforms for research and development applications (Malone et al., 2009; Majchrzak and Malhotra, 2013; Prpic et al., 2015). At the same time, crowdsourcing-based platforms provide applications for the gathering and dissemination of time-critical information, which can then be acquired by individuals as well as government and non-government organisations for emergency and contingency planning in the event of emergencies and disasters (Barbier et al., 2012).

2.3 Crowdfunding

Crowdfunding is one type of crowdsourcing that involves the contribution of money towards new projects and new venture creations (Howe, 2008). Crowdfunding differs from traditional financing resources such as banks, business angels and venture capitalists, which charge high interest fees on the amount invested (Lambert and Schwienbacher, 2010). Crowdfunding projects, however, can be categorised as having three essential elements (Figure 6): 1) the crowdfunding platform, 2) project creators (capital seekers), and 3) backers (funders or capital-giving agents) (Haas et al., 2014; Belleflamme et al., 2015).
Crowdfunding has achieved substantial growth from a global total of $500 (£345.9) million in 2009 to $16.2 (£11.2) billion in 2014 (Massolution, 2013; 2015) and is expected to reach $93 (£64.3) billion by 2025 (World Bank, 2013). According to a recent study, Xu (2016) stated that there are 1,250 crowdfunding platforms running in over 50 countries. Gierczak et al. (2016) stated that over 600 crowdfunding platforms are under development, which are expected to drive a greater economic growth. Belleflamme et al. (2015) stated that crowdfunding platforms are growing rapidly in numbers, including the amounts of money being funded, as well as in terms of the economic value being created.

Figure 6: all-or-nothing intermediaries (Haas et al., 2014, p.6)

Steinberg et al. (2012, p.58) stated that “crowdfunding is one of the most exciting things to happen to entrepreneurs and start-ups in decades, and offers considerable upsides.” Crowdfunding is a new way for entrepreneurs to attract funds for their projects (Lasrado and Lumgayr, 2013). Entrepreneurship is “a dynamic process created and managed by an individual, which strives to exploit economic innovation to create new value in the market, who has entrepreneurial mind with a strong need for achievement” (Murphy, 1987, p.15). Kuo and Gerber (2012) refer to crowdfunding as a “creativity support tool” in which the crowd help project creators with their creative work.

Crowdfunding platforms differ in many ways, such as in their fundraising models, fees, types (e.g. pledge, equity, retail, or debt), function (e.g. for artists, musicians, start-ups etc.), and where one operates (globally or locally), yet project creators follow similar phases when launching their campaign, no matter which platform they use. Moreover,
crowdfunding platforms integrate a variety of web-based payment systems such as PayPal and Amazon to enable the transaction of funds (Hui et al., 2014).

2.3.1 Definitions of Crowdfunding

Steinberg et al. (2012, p.2) define crowdfunding as “the process of asking the general public for donations that provide startup capital for new ventures”. Another definition is given by (Belleflamme et al., 2013, p.7), stating that “crowdfunding involves an open call, mostly through the Internet, for the provision of financial resources either in the form of donation or in exchange for some form of reward and/or voting rights”. More definitions can be found in Table 1.

Table 1: Definitions of Crowdfunding

<table>
<thead>
<tr>
<th>Source</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordanini (2009) cited in Ordanini et al. (2011, p.444)</td>
<td>An initiative undertaken to raise money for a newly proposed project, by collecting small to medium-size investments from several other people (i.e. a crowd).</td>
</tr>
<tr>
<td>Rubinton (2011, p.3)</td>
<td>“The process of one party financing a project by requesting and receiving small contributions from many parties in exchange for a form of value to those parties.”</td>
</tr>
<tr>
<td>Griffin (2012, p.377)</td>
<td>“Is used to describe a form of capital raising whereby groups of people pool money, typically comprised of very small individual contributions, to support an effort by others to accomplish a specific goal.”</td>
</tr>
<tr>
<td>Lehner (2013, p.289)</td>
<td>“tapping a large dispersed audience, dubbed as ‘the crowd’, for small sums of money to fund a project or a venture.”</td>
</tr>
<tr>
<td>Mollick (2014, p.2)</td>
<td>“the efforts by entrepreneurial individuals and groups – cultural, social, and for-profit – to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries”</td>
</tr>
</tbody>
</table>

2.3.2 Types of Crowdfunding

Crowdfunding comes in several forms, each serving different purposes. Buyse et al. (2012) categorised them as: 1) Donations, 2) Rewards, 3) Pre-sales, 4) Lending (social lending, peer-to-peer lending, peer-to-business lending), and 5) Equity. Moreover, according to Hemer (2011), crowdfunding funds can be in a form of: 1) Donations, 2) Sponsoring, 3) Pre-selling, 4) Lending, and 5) Equity/Investment (Figure 7). Furthermore,
Griffin (2012) categorised crowdfunding into: 1) Donations, 2) Rewards, 3) Pre-purchase, 4) Lending, and 5) Equity. Descriptions for each type in can be found in Table 2.

**Figure 7: Types of Crowdfunding (Hemer et al., 201 cited in Hemer, 2011, p.9)**

<table>
<thead>
<tr>
<th>Crowdfunding Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donations</td>
<td>In this type of crowdfunding, contributors support projects without anything in return (Griffin, 2012; Buysere et al., 2012; Hemer, 2011).</td>
</tr>
<tr>
<td>Rewards (sponsoring)</td>
<td>Contributors receive rewards in return for the funds they pledge (Griffin, 2012; Buysere et al., 2012; Hemer, 2011).</td>
</tr>
<tr>
<td>Pre-order (Pre-selling/Pre-purchase)</td>
<td>Project creators receive orders prior to producing the final products and/or offering the services, which they then deliver after the funding goal is reached (Griffin, 2012; Buysere et al., 2012; Hemer, 2011).</td>
</tr>
<tr>
<td>Lending</td>
<td>Lending money in return for profit (Griffin, 2012; Buysere et al., 2012; Hemer, 2011).</td>
</tr>
<tr>
<td>Equity</td>
<td>Contributors get shares or dividends in the company, in which they share profits/losses, or they get money when the company is sold, based on exit strategy (Griffin, 2012; Buysere et al., 2012; Hemer, 2011).</td>
</tr>
</tbody>
</table>

2.3.3 Characteristics of Crowdfunding

From a theoretical perspective, Haas et al. (2014) studied 13 different crowdfunding platforms and distinguished three main overarching characteristics: hedonism, altruism, and for-profit (Figure 8). Other researchers such as Hemer (2012) distinguished seven characteristics (donation, sponsoring, pre-ordering, membership, crediting, lending, and profit-sharing), while Belleflamme et al. (2014) identified only two (pre-ordering and profit-sharing).
2.3.3.1 **Hedonistic Crowdfunding**

This characteristic of crowdfunding is mainly focused on innovative projects in which backers pledge products and services and receive them in return for their money (Haas et al., 2014). This applies to reward-based platforms such as Kickstarter, RocketHub, and Indiegogo.

2.3.3.2 **Altruistic Crowdfunding**

Donation-based platforms are the ones that promote altruism. They accept donations from the crowd in order to create something of social value (Haas et al., 2014), such as building shelters for homeless people. In this kind of crowdfunding backers pledge money to support causes with which they are sympathetic and do not expect anything in return. Examples of Donation-based platforms are Crowdrise and Justgiving.

2.3.3.3 **For-profit Crowdfunding**

Equity-based crowdfunding platforms attract investors to fund start-ups in return for shares (Haas et al., 2014). Investors get access to business plans and other business documentation in order to decide whether or not to make a pledge. Start-ups, on the other hand, also often offer additional rewards, such as discounts and subscriptions. Examples of equity-based platforms are Crowdcube and FundedByMe.

Peer-to-peer lending also comes under this category. In peer-to-peer lending investors lend money to those who need it and get their money back plus interest in return. An example of peer-to-peer lending is LendingCrowd.
2.3.4 Economics of Crowdfunding

According to Kitchens and Torrence (2012), crowdfunding allows people to invest in their own communities, which in turn helps in creating a sustainable economy. Moreover, the money invested in crowdfunding projects helps to create new jobs when the funding goals are achieved (Ramos and Gonzalez, 2016).

2.3.4.1 Promoting Innovations

Kitchens and Torrence (2012) state that one of the major benefits of crowdfunding is that it promotes innovations, which create a healthy economy. According to Rothwell and Zegveld (1982), innovation and SMEs help to create a sustainable economy as well as new jobs. Gerber et al. (2012) state that users of crowdfunding platforms innovate and that helps in generating both economic and social values. Crowdfunding provides a sustainable foundation for users to participate in the innovation process, which is greatly influencing the economy and society.

2.3.4.2 Generating Revenue

In a study conducted by Mollick and Kuppuswamy (2014) on the outcomes of crowdfunding after the campaign, they found that over 90% of successful projects continued to generate revenue. As such, their study suggested that the benefits of crowdfunding extend beyond the initial money-raising aspect of the platform, with 32% generating over $100,000 per year, 38.5% of successful projects generating up to $25,000 per year, and 24.5% generate between $25,000–$100,000 per year. However, Mollick and Kuppuswamy (2014) found that successful projects have also raised additional funds from other sources such as government, business angels, bank loans and relatives/friends.

2.3.4.3 Creating New Jobs

According to Mollick and Kuppuswamy (2014), crowdfunded projects tend to hire 2.2 employees on average. Ramos and Gonzalez (2016) conducted a study in Spain on crowdfunding and employment, and they found that in 2012, crowdfunded projects have created around 3,000 new jobs (3 – 5 employees per project).

2.3.5 Advantages of Crowdfunding

Crowdfunding has become an alternative source of funding to support new ventures, which is offering a number of advantages compared to ordinary sources of funding such as banks and venture capitalists.
2.3.5.1 Accessible Source of Funding for Everyone

According to Vismara (2015), crowdfunding is widely accessible for everyone wishing to raise funds to create a new venture. That is, irrespective of their credit history or growth potential, including profitability and loss (Vismara, 2015), anyone can pitch their idea for a chance to be supported by a large number of micro-investments made by backers. Crowdfunding systems today are operating on a global scale, making these socio-technical systems widely available and accessible; Kickstarter alone allows millions of users worldwide to invest in projects, but currently only allows project creators from 22 countries, such as the US, UK, Canada, Australia, and New Zealand (Kickstarter, 2014). According to Bletcher et al. (2011), the new technologies allow money to move globally, reducing geographical barriers to entrepreneurs. For instance, online crowdfunding systems enable backers from the UK to fund projects created in Canada and vice versa.

2.3.5.2 Faster to Raise Capital

According to Röthler and Wenzlaff (2011) and Xu (2016), crowdfunding systems speed up the process of obtaining funds and enable entrepreneurs to create new ventures (Hemer et al., 2013; Meinshausen et al., 2012 cited in Mortiz and Block, 2016). In contrast, Gierczak et al. (2016) and Griffen (2012) state that obtaining funds from banks is made more and more difficult due to the financial crisis, thus making crowdfunding more appealing. For example, Younkin and Kashkooli (2016, p.38) stated that “crowdfunding means that a recent college graduate does not have to pay high interest rates simply because they lack a credit history”. Therefore, crowdfunding works as an invaluable alternative source of funding for people like recent graduates, meaning they do not have to find unrelated jobs and save for many years, or deal with the obstacles presented by banks, venture capitalists and business angels in order to obtain the funds they need to create their new ventures. Instead, they connect with their potential customers directly through crowdfunding platforms and aim to gain their support and validation in order to bring their ideas to life.

2.3.5.3 Maintain Decision-making Rights

Unlike ordinary investors, such as venture capitalists and business angels, crowdfunding investors do not gain the right to make any business decisions, with the entrepreneurs making decisions irrespective of what the investors want (Valanciene & Jegeleviciute, 2013). However, according to the collaborative nature of crowdfunding, investors give invaluable feedback to the entrepreneurs, helping to improve their products. Moreover,
investors in an equity-based crowdfunding system (such as crowdcube) often gain this voting right if they invest a certain amount of money (Vismara, 2015).

2.3.5.4 Marketing and Collaboration

The large user-base of online crowdfunding platforms makes them very useful for promoting new ventures, as well as engaging with the target audience in such a way that entrepreneurs gain their support either as an investment and/or contribution towards developing/improving the product (Vismara, 2015). According to Mitra and Gilbert (2014) and Gerber and Hui (2013), crowdfunding systems allow project creators to receive validation for their ideas, as well as contributions to help improve them. Users of crowdfunding platforms are an invaluable source for knowledge and expertise that help project creators succeed (Kuo and Gerber, 2012; Muller et al., 2013). According to Buysere et al. (2012), project creators often use crowdfunding platforms to increase awareness, gather market information, and obtain feedback in addition to fund raising.

2.3.6 Disadvantages of Crowdfunding

Crowdfunding has drawbacks in a number of areas, including management, intellectual property, fraud, and the reliability of the projects created.

2.3.6.1 Management Challenges

Crowdfunding projects are often created by a small number of individuals and in some cases by one person, so they generally lack in personnel resources (Kuppuswamy and Bayus, 2015). In a reward-based crowdfunding platform such as Kickstarter, project creators often face a number of management challenges such as communicating with the target audience as well as producing and shipping the rewards to each of their backers on time (Kuppuswamy and Bayus, 2015; Visamara, 2015). Pebble—a Kickstarter project—found themselves extremely overfunded, meaning that producing and delivering the larger-than-anticipated number of products was delayed significantly (Kickstarter, 2012). According to Kuppuswamy and Bayus (2015), overfunded projects often struggle with producing and shipping more rewards than originally planned, since they cannot stop receiving more funds once they achieve their funding goal.

2.3.6.2 Intellectual Property

Project creators publish their ideas in order to seek funding, but by doing so they risk them being stolen by anyone who already has the necessary funds, like wealthy investors or even companies that are constantly looking for fresh ideas (Bechter et al., 2011). Visamara
(2015) raises real concerns over the lack of the required knowledge and experience that project creators might need in order to protect their ideas, including their business plans. According to Visamara (2015), crowdfunding systems are lacking in this respect.

2.3.6.3 Fraud
According to Sigar (2012), there are concerns about fraud being conducted on crowdfunding systems. It is possible for project creators to raise funds and then just disappear without pursuing their projects (Visamara, 2015). For instance, a team based in Sweden created a crowdfunding project on Indiegogo to raise money for a device that promised to help divers breathe underwater (Loria, 2016). The team raised over $800,000 but Indiegogo subsequently received evidence that the device was fake and cancelled the project, returning the money to backers (Loria, 2016).

According to Mollick (2014), nearly one-in-ten projects fails to deliver the promised rewards for various reasons, including this kind of fraud in which the project creators run away with the funds raised. Mollick (2014) also found that 7% of Kickstarter backers have never received their rewards. On the other hand, however, 65% of Kickstarter backers reported that they received their rewards on time (Mollick, 2014). According to Sigar (2012) some businesses also used crowdfunding to hide their financial means. This raises real concerns about the potential for fraud associated with crowdfunding systems.

2.3.6.4 Reliability
In order to stop fraud, crowdfunding platforms need to implement a mechanism that ensures the projects’ reliability. According to Sigar (2012), it is hard to determine which projects are legitimate and trustworthy, and that problem affects both project creators and backers. However, potential backers can do their own research, such as checking the project creators’ profiles, which are often interconnected across various other online platforms such as LinkedIn, giving them a better idea about whether they can be trusted or not.

2.3.7 Fundraising Models
Crowdfunding platforms are socio-technical systems that allow users on the Web to learn, innovate, collaborate and coordinate in order to fund projects (Gerber et al., 2014). Backers may prefer to fund a project over others for three main reasons: explicit reward, personal relevance, and the positive feeling resulting from altruism (Wash and Solomon, 2014).
There are two main fundraising models used by crowdfunding platforms: “All-or-Nothing” and “Keep-What-You-Raise” (Gerber et al., 2014; Wash and Solomon, 2014). Kickstarter, for instance, uses the “All-or-Nothing” fundraising model in which the backers get their money back if the project fails to achieve its fundraising goal (KickStarter, 2014). In contrast, RocketHub uses the “Keep-What-You-Raise” model that allows project creators to keep the funds they raise even if they do not achieve the fundraising goal (RocketHub, 2014).

In addition, Indiegogo is a unique crowdfunding platform. They offer both models for project creators, who can then choose between Fixed Funding (“All-or-Nothing”) and Flexible Funding (“Keep-What-You-Raise”) (Indiegogo, 2014). Both models have their own advantages and disadvantages (Table 3).

Table 3: Fundraising Models

<table>
<thead>
<tr>
<th>All-or-Nothing</th>
<th>Keep-What-You-Raise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash and Solomon (2014) found that in this fundraising model backers tend to spread their funds evenly among projects, which is caused by lack of coordination between users. However, the problem is that lack of coordination leaves 60% of funds being returned to backers as projects fail to achieve their fundraising goal.</td>
<td>RocketHub (2014) believe that some money could help project creators as with that they might manage to cover some expenses and seek more money as required. Therefore, they offer this fundraising model, in which project creators keep the money they raise whether it is less, exact, or more than the amount they asked for.</td>
</tr>
</tbody>
</table>

2.3.8 Phases of Project Creation

Hui et al., (2014) conducted semi-structured interviews with 47 project creators crowdfunding using only the most popular crowdfunding platforms (Kickstarter, Indiegogo, and RocketHub). The study was undertaken using snowball sampling, which helps identifying appropriate participants. Hui et al. (2014) identified five primary tasks involved in creating crowdfunding projects (Figure 9).

However, there are two approaches to creating a crowdfunding project on the Internet (Steinberg et al., 2012). One is to create the project on one of the crowdfunding platforms
such as Kickstarter, RocketHub, or Indiegogo. And the other is to develop a unique website to run the campaign and receive public funds. Using one of the established crowdfunding platforms has a key advantage: project creators can access much larger numbers of community members that are willing to support them. Creating a unique website does not offer that. However, what it does offer is giving project creators full control over the campaign and the final outcomes (e.g. collecting data and selling a product). Accordingly, this option only works for project creators with a well-established supporters-base.

**Figure 9: Creating a Crowdfunding Project**

- **Prepare**: A project creator builds a project profile that contains essential information such as a project title, the funds required and how they will be used, the duration of the campaign, rewards category, and the option of having a video (Gerber and Hui, 2013).
- **Test**: Project creators test the project materials by involving users of the community, who usually give helpful feedback and advice to support them in achieving their funding goal (Gerber and Hui, 2013).
- **Publicise**: Publicising involves reaching out to potential supporters to request support. Creators use a variety of means to reach potential supporters, including the crowdfunding platform itself, email, and online social media, as well as offline communication technologies and in-person requests.
- **Follow Through**: Follow through with project goals and send rewards. Creators in this stage work on achieving the project goals and deliver the rewards to contributors (Hui et al., 2014).
- **Reciprocate**: Reciprocity is "the tendency to return a favor after receiving one" (Cialdini, 2001 cited in Mitra and Gilbert, 2014). Hui et al. (2014) stated that "Reciprocate resources back to the crowdfunding community", which is typically knowledge (giving feedback and advice) and funds to support other projects.

Project creators “follow through” with their projects and “reciprocate” only if their campaigns were successful. If the campaign fails to receive the required funds, under the “All-or-Nothing” model project creators only have the option of whether to try repeating the campaign in order to attract sufficient backers. However, under the “Keep-What-You-Raise” model, project creators may follow through even if the campaign was unsuccessful, depending on how much they managed to raise.
2.3.9 Success and Failure

Success rates on Kickstarter vary between 43–51.53% (Mitra and Gilbert, 2014; Mollick, 2014; Etter et al., 2013; Wash, 2013). There is no public data available about the success rates on RocketHub and Indiegogo (Gerber and Hui, 2013), so no authors have yet been able to make any claims regarding that.

There have been many suggestions made by researchers of ways to improve the success rate of crowdfunding projects, which are explained in more detail in Table 4. They include:

1. A predicting engine tool to support novice users launch a successful campaign (Greenberg et al., 2013).
2. A probability of campaign success prediction (Etter et al., 2013).
4. Suggested a tool to create updates effectively (Xu et al., 2014).

<table>
<thead>
<tr>
<th>Tool</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success Predicting Engine</td>
<td>Greenberg et al. (2013) developed a predicting engine tool to assist novice crowdfunding users with project creation. They claim that the tool gives 68% accurate results regarding whether the project will succeed or not. This tool provides crowdfunding users with instant feedback on the material submitted so they can modify the material prior the launch of the campaign.</td>
</tr>
<tr>
<td>Probability of Success</td>
<td>Etter et al. (2013) developed a tool to predict the probability of a campaign’s success. They found that predictions based on the money pledged within the first 15% of the campaign’s duration had an accuracy of 85%. Combining this with a predictor based on social attributes lead to getting accurate results within as soon as the first 4% of the campaign’s duration. (Social Attributes: based on twitter [number of tweets, replies, and retweets] [number of users who retweeted] = [estimated number of backers] (Etter et al., 2013)).</td>
</tr>
<tr>
<td>Success Phrases</td>
<td>Mitra and Gilbert (2014) suggested a tool to help project creators make use of success phrases in order to help them succeed.</td>
</tr>
<tr>
<td>CrowdPower 2.0</td>
<td>This tool is designed to increase the quality of projects before they are submitted to crowdfunding platforms in order to increase their chances of success. CrowdPower 2.0 involves the crowd in the ideation and evaluation stage of a project. Then it is taken to a group of potential investors for further evaluation, and then the project is launched in a crowdfunding platform for funding (Willfort and Weber, 2016).</td>
</tr>
</tbody>
</table>

Achieving the fundraising goal is not as easy as simply making a public request for funds, followed by the public readily throwing money into the project creator’s pocket. In fact, it is very challenging. It requires careful planning, which usually takes 3–6 months, as well as
hard work, skill and commitment (Hui et al., 2014). The factors determining success and failure vary between projects. However, Mitra and Gilbert (2014) and Greenberg et al. (2013) argue that, in general, the funding goal, project duration, project category, exclusive rewards, the presence of a video being featured on the platform, and social media connections are the main overall factors involved in success.

Furthermore, Mollick (2014) conducted an exploratory study to understand the dynamics of crowdfunding and gathered a total of 48,526 Kickstarter projects’ data (worth $237 million), of which 48.1% succeeded and 51.9% failed. Mollick (2014, p.6) stated that “projects that fail tend to fail by large margins”, with the mean of failed projects final amounts raised being only 10.3% of the funding goal, and only 3% of failed projects raising 50% of their funding goal (Mollick, 2014).

Mitra and Gilbert (2014), Kuppuswamy and Bayus (2015) and Mollick (2014) argue that in order to have a better chance of success in a crowdfunding campaign, project creators need to lower the funding goal and shorten the duration of the project. Moreover, a video must be presented in the project pitch. Wash (2013) argues that offering a reward is also essential for the success of the project. Kuppuswamy and Bayus (2015) also found that successful projects receive larger contributions in the first week (achieving 30% of their funding goal) and in the last week of the funding cycle.

Additionally, Xu et al. (2014) argue that creating regular project updates, if implemented effectively, is more critical in increasing the chances of the campaign’s success than the project description. They found that a campaign with project updates has a success rate of 58.7%, which drops to 32.6% if there are no updates.

**Taxonomy of the Types of Project Updates (Xu et al., 2014)**

1. Social Promotion (using social media to spread the word, i.e. via tweets, likes, and shares)
2. Progress Report (updating supporters with what is being accomplished)
3. New Content (anything related to the project such as news, pictures, and videos)
4. Reminders (increasing awareness of how much time is left for the campaign)
5. Answering Questions (answering supporters’ enquiries about the project)
6. New Rewards (informing the audience of any reward changes)
7. Appreciation (thanking supporters for their donations)
2.3.10 Users of Crowdfunding

According to the literature, there are three key participants in online crowdfunding communities: the crowdfunding platform (website), fund-seekers (project creators), and funders (backers) (Hemer, 2011). This is demonstrated visually in Figure 10.

**Figure 10: Crowdfunding Actors (Hemer et al., 2011 cited in Hemer, 2011, p.9)**

The nature of crowdfunding platforms allows many participants with different motives to engage and interact. Crowdfunding platforms also have some geographical restrictions that prevent participants from creating projects, and thus only take part in funding projects. For instance, Kickstarter FAQs (2016) state the following:

“Project creation is currently available to individuals in the US, UK, Canada, Australia, New Zealand, the Netherlands, Denmark, Ireland, Norway, Sweden, Germany, France, Spain, Italy, Austria, Belgium, Switzerland, and Luxembourg.”

There are also other restrictions on project creators, such as a minimum age of 18, but there is no information available about restrictions on backers, so we can only assume there are none. Other crowdfunding platforms have different restrictions. Indiegogo, for instance, allows project creators to be anywhere in the world as long as they have a bank account (including IBAN number) (Indiegogo, 2016).

2.4 Motivation

Bretschneider et al. (2014, p.3) describe motivation as “the process of how an individual’s motives become activated”. What motivates human behaviour has always been an
interesting field of study. Based on self-determination theory, many scholars divide human motives into either intrinsic or extrinsic motives (Deci and Ryan, 2000; Deci and Ryan, 2002), and the participation of consumers in online communities is no exception (Füller, 2010; Antikainen et al., 2010; Antikainen, 2011). Bretschneider et al. (2014) demonstrated the motivation model shown in Figure 11.

**Figure 11: Motivation Model**

Deci and Ryan (2002, p.10) state that in order to distinguish intrinsic motives from extrinsic motives we need to understand “how extrinsic rewards would affect people’s intrinsic motivation for an interesting activity”. Deci and Ryan (2002) place an emphasis on examining what happens if an extrinsic reward is offered to someone who is intrinsically interested in the activity and, based on many studies, they found that extrinsic rewards decrease intrinsic motivations.

However, Füller (2010) and Antikainen et al. (2010) examined the various motivations behind participation in online innovation communities in which new products are co-created. Conducting cluster analysis from the data collected (727 survey respondents), Füller (2010) identified four groups of participants (based on motives) that drive them to participate: 1) reward-oriented, 2) intrinsically-interested, 3) curiosity-driven, and 4) need-driven participants. According to self-determination theory, Deci and Ryan (2002, p.4) stated that it is important to recognise “the intrinsic propensities of people to engage in active, curiosity-based exploration and to integrate new experiences to the self”. On the other hand, Antikainen et al. (2010) and Antikainen (2011) collated 16 separate motives identified in previous studies and examined each of them. Antikainen (2011) found that the top motive for participating in online communities is ‘intellectual challenges’, while the
least motivating factor is when participation is ‘part of job’. What is interesting in Antikainen’s (2011) results is that the motives second and third from the top are ‘fun’ and ‘interest towards innovation’ respectively, which is clear evidence that participants in online communities have a direct interest in innovation. Accordingly, this shows how innovation is extremely relevant to online communities, including those in crowdsourcing and crowdfunding.

2.4.1 Motivations in Crowdfunding

Despite the growing interest in crowdfunding, recent studies indicate that our understanding of the motivations behind participation in crowdfunding projects (either as project creator or backer) is still limited (Gerber et al., 2012; Belleflamme et al., 2014; Mitra and Gilbert, 2014; Gerber and Hui, 2013; Muller et al., 2013; Gierczak et al. 2016; Bretschneider et al., 2014 Ordanini et al., 2011; Haas et al, 2014). The motivations behind crowdfunding participants vary amongst individuals (Gerber et al., 2012; Ordanini et al., 2011; Bretschneider et al., 2014; Gierczak et al., 2016). Harms (2007) made the first attempt to discover participants’ motives to engage in crowdfunding with the question “What Drives Motivation to Participate Financially in a Crowdfunding Community?”. Using convenience sampling for a survey, the data was collected from 359 respondents, from which 196 responses were valid. This was sufficient to meet the requirement for a minimum ratio of observations to variables (5:3:1) (Harms, 2007). With this study, Harms (2007) identified several values that create the motivation to invest, including financial, functional, social, and emotional values.

However, Gerber et al. (2012) used an inductive approach to identify these motives, conducting semi-structured interviews with 11 participants, of which 3 created projects, 2 created and funded projects, and 3 were representatives of crowdfunding platforms. They found that backers are mainly motivated by 1) seeking rewards, 2) supporting creators and causes, 3) strengthening connections, and 4) being part of a community; while project creators are motivated by 1) raising funds, 2) establishing relationships, 3) receiving validations, 4) replicating the successful experience to others, and 5) expanding awareness.

However, Gerber et al, (2012) are still undertaking further research in this area. Moreover, Gerber and Hui (2013) studied motivations for participation as well as deterrents, as part of a larger study (the role of crowdsourcing in innovation). Gerber and Hui (2013) conducted interviews with 83 participants from the United States, of which 2 created projects, 10 funded projects, and 48 created and funded projects. They also interviewed 20
participants that had intentions to contribute in crowdfunding, in which any deterrents had been identified. In contrast with Gerber et al.’s (2012) findings, Gerber and Hui (2013) highlighted the same list of motivations for project creators, with the addition of connecting with others, maintaining control, and learning. While for backers, Gerber and Hui (2013) stated that they are motivated “to help others”. Gerber and Hui (2013) concluded that understanding participants’ motivation should allow for better computer interactions between users to be designed.

Furthermore, Ordanini et al. (2011) conducted a study (based on grounded theory) to understand the characteristics of crowdfunding participants and what motivates them to participate. Ordanini et al. (2011) collected data (using observational techniques) from multiple sources in order to perform a qualitative analysis. In addition, Ordanini et al. (2011) conducted semi-structured interviews with their participants to enrich the discussion and identify new patterns (findings in Table 6).

However, Argawal et al. (2010) argued that backers’ motives for funding a project are similar to investors’ (see Table 6). The main similarity between backers and investors is that they both fund a project while expecting a return (either a reward or profit). But this might not be the case with other kinds of motivations, because even backers that fund the same project may differ in their motives, with some being interested in the project regardless of whether there is a reward being offered or not. Argawal et al., (2011) also argued that some investors are motivated simply by supporting artists to achieve their goals, and this is similar to supporting certain creators and causes in crowdfunding (Gerber et al., 2012).

Finally, according to the literature on motivations for participating in crowdfunding, an in-depth understanding of participants’ motives is still lacking, and therefore, further studies should be conducted in this area. Also, the motivations for participation are not the same across all crowdfunding platforms, thus investigating motivations for each type of crowdfunding will provide a greater insight in this field (Gierczak et al. 2016; Bretschneider et al., 2014; Ordanini et al., 2011; Belleflamme et al., 2013, Buysere et al., 2012).

2.4.1.1 Creating a Project

Creating a crowdfunding project can be beneficial in many ways. According to Belleflamme et al. (2014), project creators can benefit from promoting their products and utilising user-based innovation to co-create them, or by improving ideas related to products and services by obtaining feedback. Moreover, participating in crowdfunding can significantly expand
awareness and help project creators receive validations as well as establish relationships in the market (Gerber et al., 2012). Mitra and Gilbert (2014) linked these motives with theories of self-efficacy (Bandura, 1986), in which public recognition improves people’s perception of their ability. Furthermore, Buysere et al. (2012) indicated that project creators can get access to market information such as the demographics of potential customers using crowdfunding. However, this is not the case in reward-based crowdfunding where project creators collect funds as a way of pre-ordering the product in the early stages (i.e. before the final product is manufactured) (Hemer, 2011; Belleflamme et al., 2014).

Furthermore, according to Gierczak et al. (2016, p.17), although project creators primarily use crowdfunding to raise funds, it is not the only reason. In order to get a greater insight into this, project creator’s motives in are listed in Table 5.

**Table 5: Project Creators’ Motives**

<table>
<thead>
<tr>
<th>Source</th>
<th>Crowdfunding Type</th>
<th>Motivations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belleflamme et al. (2013)</td>
<td>Reward-based</td>
<td>Seeking Funds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increasing awareness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Obtaining Feedback</td>
</tr>
<tr>
<td>Gerber et al. (2012)</td>
<td>Reward-based</td>
<td>Raise Funds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Establish relationships</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Receive validations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Replicate the success of others</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expand Awareness</td>
</tr>
<tr>
<td>Gerber and Hui (2013)</td>
<td>Reward-based</td>
<td>Raise funds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expand awareness of work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Connect with others</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gain Approval</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintain Control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learn</td>
</tr>
<tr>
<td>Lasrado and Lumgayr (2013)</td>
<td>Reward-based</td>
<td>Raise funds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Direct Interactions with customers</td>
</tr>
</tbody>
</table>
2.4.1.2 Funding a Project

There are large numbers of individuals and organisations participating in various crowdfunding platforms. For instance, the total number of backers using Kickstarter alone is almost 11 million (Kickstarter Statistics, 2016). The motivating factors for funding crowdfunding projects have been studied by a number of researchers (such as Gerber et al., 2012; Ordanini et al., 2011; Belleflamme et al., 2014; Bretschneider et al., 2014). They identified a number of different motives, including “Seek Rewards, Support Creators and Causes, Engage and Contribute to a Trusted Creative Community (Gerber et al., 2012).” More motives are listed in Table 6.

According to Gierczak et al. (2016) and Bretschneider et al. (2014), motivations for participating in crowdfunding can be categorised into four groups (Figure 12). Backers mostly support projects that are created by someone they know (relatives and friends), which is known as the direct-identification motive. Backers also tend to support local projects such as those in the same city or region, and this is known as the regional-identification motive. Whilst the return motive, according to Bretschneider et al. (2014), is based on the return on investment in equity and lending-based platforms, and is also perceived as the reward in reward-based platforms (Gierczak et al., 2016; Guerzoni et al., 2016).
Moreover, the recognition-motive is based on contributions and support being recognised by others. However, Guerzoni et al. (2016) found that the majority of backers support their friends’ projects as well as local projects from the same town. According to these findings, despite reward being the top motive in reward-based platforms, the direct-identification motive and the regional-motive also seem to play a large part in driving the majority of backers into supporting crowdfunding projects.

Table 6: Backers’ Motivations for Funding

<table>
<thead>
<tr>
<th>Source</th>
<th>Crowdfunding Type</th>
<th>Motivations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerber et al. (2012)</td>
<td>Reward-based</td>
<td>Seek reward, Support creators and causes, Strengthen connections, Be part of a community</td>
</tr>
<tr>
<td>Ordanini et al. (2011)</td>
<td>Reward-based</td>
<td>Patronage, Social participation, Reward (monetary and non-monetary) (profit)</td>
</tr>
<tr>
<td>Argawal et al. (2010)</td>
<td>Reward-based</td>
<td>They are emotionally attracted to the project, They know the person(s) who created the project, They are familiar with the project, Local project</td>
</tr>
<tr>
<td>Gerber and Hui (2013)</td>
<td>Reward-based</td>
<td>Collect rewards, Help others, Support causes, Be part of a community</td>
</tr>
<tr>
<td>Author(s) (Year)</td>
<td>Type</td>
<td>Equity</td>
</tr>
<tr>
<td>-----------------</td>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>Bretschneider et al. (2014)</td>
<td>Equity</td>
<td>Curiosity about crowdfunding</td>
</tr>
<tr>
<td>Ordanini et al. (2011)</td>
<td>Equity</td>
<td>Innovation-oriented</td>
</tr>
<tr>
<td>Buysere et al. (2012)</td>
<td>Peer-to-Peer Lending</td>
<td>Higher financial return</td>
</tr>
<tr>
<td></td>
<td>Donation-based</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reward-based</td>
<td>Material Return (reward such as the final product or service e.g. copy of the film)</td>
</tr>
<tr>
<td></td>
<td>Equity-based</td>
<td>Financial return (equity of the company e.g. 100 shares)</td>
</tr>
<tr>
<td>Hemer et al. (2014)</td>
<td>Reward-based</td>
<td>Interested in the product or service</td>
</tr>
<tr>
<td>Guerzoni et al. (2016)</td>
<td>Reward-based</td>
<td>Social contact</td>
</tr>
</tbody>
</table>

2.5 Summary
In this chapter, we covered three main areas: innovation, crowdsourcing, and crowdfunding.

Firstly, in Section 2.1, we covered innovation literature that include definitions of innovation, the adoption of innovation process, types of innovation and the emergent era of open innovation as defined by Chesbrough et al. (2006), as well as open collaborative
innovation as defined by Baldwin and von Hippel (2011), and related them to crowdsourcing.

Secondly, in Section 2.2, we covered the definitions of crowdsourcing, discussed various models of crowdsourcing, including examples, and the impact of crowdsourcing.

Thirdly, in Section 2.3, we covered a large number of crowdfunding definitions, and discussed the different types of crowdfunding systems and their characteristics. We then discussed the economics of crowdfunding and how crowdfunding projects promote innovations, generate revenue and create new jobs. After that, we discussed the advantages of crowdfunding, including accessibility, raising capital quickly, preserving the decision-making, and the combination of both marketing and collaboration that they offer to project creators. However, the disadvantages were also discussed, including management challenges, risks to intellectual property, fraud, and the reliability of crowdfunding projects.

Moreover, we discussed the different types of fundraising models and the phases of project creation. Furthermore, we also discussed the factors involved in the success or failure of crowdfunding projects and covered the recommended tools for improving the success rate. Previous studies suggested that there are a number of factors involved in the success of crowdfunding projects, such as the reward offered in return for funds, the social media connections, the project funding goal and the project duration. Finally, we covered the users of crowdfunding, including project creators, the intermediaries (i.e. the crowdfunding platform), and the backers.

And lastly, in Section 2.4, we presented a detailed discussion of users’ motivations for funding projects. We presented findings from previous studies covering various user groups as well as types of crowdfunding platform. From this review of the relevant literature, it became clear that previous studies have focused solely on the motivations for funding, whereas this research intends to establish a deeper understanding of how these motivations for funding actually determine the funding amount. Next chapter presents the research methodology, including the research overview of how this research is being undertaken. Using a mixed-methods approach, this research applies online observation techniques to gather data, which is analysed using qualitative and quantitative methods, followed by an online survey to gather more data.
CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This research starts by observing data from a variety of sources (including literature, websites, forums, and online communities). After the completion of the observations, the data is coded to identify patterns, which will provide insights to the researcher. Then begins the gathering of primary data (using surveys and/or interviews) based on the directions decided upon by the researcher.

Since the population is unique, an exploratory approach is appropriate, as it allows the researcher to be sensitive and adaptive to the trends that emerge in the data. An overview of the plan in Figure 13 below, showing how this research will be undertaken.

Figure 13: Research Overview

This research uses a mixed-methods approach employed by a number of crowdfunding studies (such as Greenberg and Gerber, 2014). Greenberg and Gerber (2014) scraped data from Kickstarter (around 16,000 projects) and then conducted interviews with unsuccessful crowdfunding projects’ creators (11 participants) to ask them about what they had learned during their crowdfunding campaigns. Finally, there are many terms being used in a specific sense in this study which are defined in Table 7 below.
Table 7: Terms and Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Successful Project</strong></td>
<td>In crowdfunding, a successful project is a project that achieves 100% of its funding goal or more in order to receive the funds based on an “all-or-nothing” fundraising model.</td>
</tr>
<tr>
<td><strong>Unsuccessful Project</strong></td>
<td>An Unsuccessful project is a project that fails to achieve 100% or more of its funding goal. According to an “all-or-nothing” fundraising model, these projects do not receive the funds.</td>
</tr>
<tr>
<td><strong>Funding Goal</strong></td>
<td>The amount a crowdfunding project requests from the public—“the crowd”.</td>
</tr>
<tr>
<td><strong>Backers</strong></td>
<td>Backers refer to funders, i.e. people who pay money to crowdfunding projects. This also applies in the same sense in terms such as “to back” and “backed”, meaning to “to fund” and “funded”.</td>
</tr>
</tbody>
</table>

3.2 Methodology

This research employs a mixed-methods triangulation design, as prescribed by Creswell and Plano Clark (2007). It calls for the combined analysis of both qualitative and quantitative data in order to draw conclusions from it. This method is preferable to using qualitative or quantitative data alone, as it enables the researcher to gain a deeper understanding of the phenomena being studied. Moreover, Creswell and Plano Clark (2007) explain that the methodology allows for interplay between qualitative and quantitative data collection, since they occur side by side. A diagram of this methodology can be found in (Figure 13).

Also, according to Creswell (2013) and Creswell and Plano Clark (2007), there are other benefits of this methodology, including reducing the bias that would come as a result of using one method or the other, and developing a more accurate solution than with a single method. However, the term triangulation is drawn from military strategy, and denotes the use of information from several locations to determine the location of an unseen object (Jick, 1979). A well-designed mixed-method research has clearly defined roles for the quantitative and qualitative components (Denscomb, 2008). It is not simply a random combination of qualitative and quantitative approaches. Since the data collected so far is
drawn from a small snowball sample, inferential statistics are not yet appropriate for the data. Accordingly, only descriptive statistics are reported for the data.

**Figure 14: Mixed-methods diagram (Creswell and Plano Clark 2007, p.64). Triangulation Design: Convergence Model Design.**

3.3 Philosophical Underpinnings

This method reflects a combination of quantitative and qualitative methods which have post-positivist and constructivist philosophical approaches, respectively (Creswell, 2013; Creswell and Plano Clark, 2007; Sandelowski, 2000). Quantitative methods tend to be viewed as post-positivist due to the concrete nature of the data, striving for objectivity in a way that is related to the hard sciences and the absolute nature of statistical hypothesis testing (Creswell, 2013; Creswell and Plano Clark, 2007; Sandelowski, 2000). Qualitative methodology is more subjective in nature and the interpretation of it varies according to the perspective of the researcher or reader (Creswell, 2013; Creswell and Clark, 2007; Sandelowski, 2000). Thomas (2006) describes the inductive method of qualitative research as a process of exploration whereby the researcher allows the data to determine the important themes being discussed, rather than having fixed themes for which the researcher is looking. This involves attending to the most important themes in the data with respect to the frequency of occurrence and the relevance of those themes (Figure 14 shows a descriptive diagram). This is contrasted with a deductive approach, which is guided by specific hypotheses. It seeks to describe a phenomenon in context, rather than make the kinds of generalisations that are the aim of quantitative analysis. Figure 15 shows a descriptive diagram for the deductive approach.
The inductive research approach begins with gathering information and ends in posing generalisation or theories, as indicated in Figure 2. According to Creswell (2013), this approach begins with a specific point and ends with a general idea; while in the deductive approach, the researcher begins with the general idea first and finishes with something specific.

**Figure 15: The Inductive Approach in Qualitative Research (Creswell, 2013, p.66)**

- Researcher gathers information (e.g. interviews, observations)
- Researcher asks open-ended questions of participants or records fieldnotes
- Researcher analyses data to form themes or categories
- Researcher looks for broad patterns, generalisations, or theories from themes or categories
- Researcher poses generalisations or theories from past experiences and literature

**Figure 16: The Deductive Approach in Quantitative Research (Creswell, 2013, p.59)**

- Researcher measures or observes variables using an instrument to obtain scores
- Researcher defines and operationalises variables derived from the theory
- Researcher tests hypotheses or research questions from the theory
- Researcher tests or verifies a theory
Furthermore, there is a definite difference between the positivist and constructivist philosophies, and therefore the ways in which qualitative and quantitative researchers make sense of data. Mixed methodology takes a pragmatic philosophical view. The pragmatic school of thought states that a given notion should be measured by its value in facilitating the practical understanding of phenomena (Johnson & Onwuegbuzie, 2004).

3.4 Sampling Method

A snowball sampling approach was taken to gather the samples for this research. Snowball sampling typically involves an initial participant referring others to be interviewed for a study (Gall et al., 2007). It is particularly useful in studying unique communities (such as online communities) for which knowledge may be difficult for a researcher to obtain (Noy, 2008). This is in contrast with convenience sampling, wherein a sample is simply drawn based on the availability and willingness of subjects. A snowball sample, on the other hand, includes only participants who have been deemed interesting or valuable sources of information by others who have met the criteria for study.

In addition, some qualitative researchers insist that the sampling process itself provides useful information about the social networks and dynamics of the subjects of interest (Creswell, 2013). In studies that focus heavily on the world views and experiences of the subjects, knowledge of social structures can be invaluable (Noy, 2008). Participant recommendations develop a kind of social map, indicating who is connected to whom, and some researchers gauge the completeness of their sample on the number of times a given subject’s name comes up in discussions with others (Gall et al., 2007).

However, this sampling method has typically been used in research of small subgroups with interpersonal connections, but its potential for understanding the online world should not be underestimated. Internet forums are communities, and the users who occupy them should be considered valuable sources of information on matters related to that community, and therefore help deepen our understanding of crowdfunding and its participants. Consequently, although the use of online communities in snowball sampling is relatively new in the existing research, it has potential for increasing access to important subjects that may not otherwise be reached (Baltar & Brunet, 2012).

3.5 Observational Techniques

This research uses observational techniques (Hewson et al., 2002) in order to understand crowdfunding participants’ behaviour (i.e. their motivations to fund projects). As such, the
researcher does not present himself, does not interact with others, and observes data without being identified (Hewson et al., 2002; Nørskov and Rask, 2011). The research observations were unstructured, and quantitative and qualitative data was collected and analysed in order to identify patterns and compare them to established theories concerning, for example, such things as participants’ motives (Haas et al., 2014; Hemer, 2012; Belleflamme et al., 2014; Mollick, 2014; Gilbert and Mitra, 2014; Gerber and Hui, 2013; Muller et al., 2013; Ordanini et al., 2011; Bretschneider et al., 2014).

The research observations were undertaken on the Internet, from crowdfunding-related forums and online communities (such as crowdfundingforum.com). These sources contain so much information for a greater depth of understanding of the behaviour of crowdfunding participants—both project creators and backers. For instance, the users of these forums ask questions and share useful information such as feedback and advice, and some offer promoting projects, in order to share the value over the participants. In this report, a number of threads are followed in order to gather and observe more data, thus generating more crowdfunding insights to help us gain and in-depth understanding of the behaviour of crowdfunding participants, as well as some of the implications of crowdfunding.

Once the observations are completed, primary data will be gathered using a survey (which will be designed to ask participants questions based on the results of these observations). This will help significantly with validating the results and ensuring their reliability.

3.6 Online Survey

A questionnaire has been designed for conducting an online survey for examining backers based around their motivation for funding and the amount they pledge (Appendix 7). The survey has reached a total of 1,864 participants using Amazon Mechanical Turk and online communities such as Reddit and Kickstarterforum. The survey starts by asking the participants if they have contributed to crowdfunding projects, and by answering ‘yes’ they undertake the survey. Answering ‘no’ disqualifies them and they automatically exit the survey. However, the initial results show that 886 of the total participants were disqualified, with a further 758 having incomplete answers. As a result, only 269 complete responses were attained.

To ensure the reliability of the data, participants had to give details of the crowdfunding platforms they use, including the categories and their overall motivations to fund
crowdfunding projects. At the end, participants also had to give details of the most recent crowdfunding project that they had contributed to, including the project name, the category and project link, the amount pledged, and their motives for funding that project. This ensured that the results were valid and participants had genuinely contributed to crowdfunding projects. The survey also included open-ended questions encouraging participants to state their reasons for funding, and so qualitative data analysis is required in order to identify patterns and display the results.

The initial statistics also show that the data sets are valid and reliable, including significant correlations between the amount pledged and the motives for funding crowdfunding projects.

The following section addresses concerns around the reliability of the data collected from Amazon Mechanical Turk, intending to validate the reliability of this approach based on the existing literature.

3.6.1 Reliability of Crowdsourcing: Solutions from the Literature

There is an understandable need to attend to the reliability of crowdsourcing for research purposes. Encouragingly, past research on the reliability of the data obtained through crowdsourcing websites such as Amazon Mechanical Turk has shown that it is possible to obtain a degree of reliability, comparable to expert work, with respect to accuracy. For instance, researchers have compared video annotations provided by crowdsourcing employees to those of the confirmed experts’ ratings. They were able to obtain a high level of agreement within certain guidelines for managing the process of crowdsourcing work (Burmania et al., 2015).

Many researchers have developed quality assurance procedures that have been shown to be effective, such as pre-screening the workers on the basis of quality ratings and by using multiple raters to ensure accuracy (Burmania et al., 2015). Some have devised advanced algorithms to determine the level of reliability and cost-effectiveness of individual workers and groups (Karger et al., 2014). However, it is possible to draw general principals from these approaches that do not require the use of advanced calculations. For instance, results appear to support the concept that assessing workers by looking at past performance and by assigning multiple workers to the same task to determine accurate information by majority vote is a common feature of the most reliable approaches (Karger, Oh & Shah,
Providing instructions in advance to the workers is another key feature necessary to increase reliability (Burmania et al., 2015).

For the present project, the categories to be used in coding will be predefined for the workers. Additionally, reliability can be assured through the hiring of multiple raters to code the same sets of participant data, and agreement figures can be calculated. Lastly, the researchers may also test workers’ reliability against a pre-rated sample survey to determine the inter-rater reliability of individual workers.

3.7 Research Questions and Hypotheses

3.7.1 Research Questions

1. **In a crowdfunding platform, does the funding amount differ among genders or age groups?**
   
   We gathered information about the funding amount that backers pledge to crowdfunding projects. We will compare the means of their funding amounts in order to provide more insight determining the high- and low-paying backers.

2. **In a crowdfunding platform, what are the users’ motivations for funding?**
   
   We gathered data from a number of resources, such as literature and web forums, and conducted an online survey to understand what motivates users to fund crowdfunding projects. It is an essential data set that should help the researcher to answer the other questions in this research.

3. **Are there any associations between the motivations for funding?**
   
   The associations between the motivations for funding should draw together a number of components that define the characteristics of users. Each user is driven by a number of motivations rather than just one.

4. **Are there any associations between the users’ motivations for funding and the funding amount?**
   
   Previous studies have only focused on the users’ motivations for funding. This research intends to establish a deeper understanding of how the motivations for funding determines the funding amount that backers pledge to crowdfunding projects. The participants of the online survey conducted are distinguished by five
funding amount ranges, which we analysed in association with the funding amount, starting from low to high. This has been applied on three variables: 1) the age groups (e.g. 18 – 24); 2) the funding amount (e.g. low/high); and, 3) the motivation for funding (e.g. reward).

5. How does the kind of backer relate to the success of the project?
There are two kinds of backers: 1) new backers, and 2) returning backers. Having previously funded at least one project, the returning backers come within the established user-base of the crowdfunding platform, whereas the new backers, funding a project for the first time, do not. This research collected some data to understand whether one kind of backers contributes more to the success of projects. This data includes a number of variables from each projects’ page from our sample, which are the number of new backers and returning backers, and the outcome of the project (i.e. successful/unsuccessful).

3.7.2 Hypotheses
- Hypothesis 1: The means of the funding amount are equal among genders
- Hypothesis 2: The means of the funding amount are equal among age groups
- Hypothesis 3: There is no association between the motivations for funding
- Hypothesis 4: There is no association between the funding amount and the motivation for funding
- Hypothesis 5: Both kinds of backers contribute equally to the success of projects

3.8 Data Analysis
3.8.1 Quantitative Analysis
Quantitative analyses were performed with SPSS statistical software. The analyses included descriptive statistics on the scale and nominal variables. Mean values, frequency counts, and percentages are included in the results.

3.8.2 Qualitative Analysis
The respondents’ answers were analysed according to word frequency. Nvivo qualitative analysis software was used to create word frequency trees that provided information regarding the most frequently occurring words in users’ responses, along with the words that were adjacent to them.

The analysis of the observations also involved the use of an open coding method to summarise the key themes in users’ responses. Each response was coded according to the
main motives expressed by the writer. A cluster analysis was performed in order to group participants by their motives.

3.8.3 Triangulation

In order to use triangulation properly as a research approach, it is important to clearly define the subject of triangulation and to explain how the data-gathering methods work together to provide an accurate picture of the subject. In this research, the subject of interest is crowdfunding platforms (mainly Kickstarter). The methods focused on two key aspects of these platforms: project funding amounts (and therefore also overall success), and user contribution patterns. One of these was approached with a quantitative focus and the other was approached with a qualitative focus.

While the qualitative and quantitative data sets address different aspects of the crowdfunding platforms, they come together to provide a better insight into how these communities operate. Thus, a larger picture of crowdfunding emerges, including crowdfunding projects themselves as well as the backers that play a major role in the success or failure of those projects.

3.8.4 Factor Analysis

There are two types of Factor Analysis (FA): 1) Exploratory Factor Analysis (EFA), and 2) Confirmatory Factor Analysis (CFA) (Costello & Osborne, 2011; Fabrigar et al., 1999; Preacher & MacCallum, 2003). Fabrigar et al. (1999) stated that the initial development of Factor Analysis (FA) was made by Spearman (1904, 1927), but according to Preacher and MacCallum (2003), Thurstone (1935) was first to introduce this term for recognising the rotation method for structuring the data. The main purpose of FA is to reduce the number of variables and classify them, and the classification of these variables is determined by finding the correlations between them (Costello & Osborne, 2011; Fabrigar et al., 1999; Muca et al., 2003; Preacher & MacCallum, 2003). However, FA is a statistical technique that is widely used in the social sciences because it helps the researcher to build clear classifications of the variables found in their data (Costello & Osborne, 2011), and thus form new theories as well as building on existing theories.

According to Costello and Osborne (2011), the results of FA can be generalised across samples. However, the researcher needs to apply CFA to confirm the results generated by EFA.
3.8.4.1 Extraction Methods

There are a number of extraction methods for applying FA, such as Principal Components Analysis (PCA), Maximum Likelihood (ML), Principal Axis Factoring (PAF), among others (Costello & Osborne, 2011; Fabrigar et al., 1999; Muca et al., 2003; Preacher & MacCallum, 2003). They extract variables in a number of components (i.e. factors), but they have different approaches to doing this, as explained in Table 8.

Table 8: Extraction Methods (IBM Knowledge Center, 2017)

<table>
<thead>
<tr>
<th>Extraction Method</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Component Analysis</td>
<td>A factor extraction method used to form uncorrelated linear combinations of the observed variables. The first component has maximum variance. Successive components explain progressively smaller portions of the variance and are all uncorrelated with each other. Principal components analysis is used to obtain the initial factor solution. It can be used when a correlation matrix is singular.</td>
</tr>
<tr>
<td>Maximum Likelihood</td>
<td>A factor extraction method that produces parameter estimates that are most likely to have produced the observed correlation matrix if the sample is from a multivariate normal distribution. The correlations are weighted by the inverse of the uniqueness of the variables, and an iterative algorithm is employed.</td>
</tr>
<tr>
<td>Principal Axis Factoring</td>
<td>A method of extracting factors from the original correlation matrix, with squared multiple correlation coefficients placed in the diagonal as initial estimates of the communalities. These factor loadings are used to estimate new communalities that replace the old communality estimates in the diagonal. Iterations continue until the changes in the communalities from one iteration to the next satisfy the convergence criterion for extraction.</td>
</tr>
</tbody>
</table>

PCA is the most-used, default extraction method in statistical software such as SPSS, SAS and MiniTab (Costello & Osborne, 2011). However, some authors, such as Velicer and Jackson (1990), disagree with the PCA approach, and Costello and Osborne (2011) strongly
recommend ML and PAF over PCA in the social sciences because they provide results with a greater degree of accuracy.

### 3.8.4.2 Rotation Methods

The application of rotation methods helps the researcher to structure the data (Costello & Osborne, 2011; Preacher & MacCallum, 2003). The rotation methods are classified as either orthogonal or oblique (Costello & Osborne, 2011; Fabrigar et al., 1999; Muca et al., 2003; Preacher & MacCallum, 2003). Varimax (orthogonal) is the most-used rotation method in academic papers because it shows uncorrelated factors (Costello & Osborne, 2011; Preacher & MacCallum, 2003). However, in order to find the correlation between factors, Costello and Osborne (2011) strongly recommends the oblique rotation method (Direct Oblimin) to be used in the social sciences because it allows the researcher to get accurate results from their data. Using an orthogonal rotation method (e.g., Varimax) could lead the researcher to lose valuable information because this approach focuses on uncorrelated factors (Costello & Osborne, 2011; Fabrigar et al., 1999).

### 3.8.4.3 Factor Loading

The factor loadings reflect to what extent the variables are correlated within one component (Costello & Osborne, 2011; Fabrigar et al., 1999; Muca et al., 2003; Preacher & MacCallum, 2003). A high-factor loading is considered (.80 or higher) (Fabrigar et al., 1999), but Fabrigar et al. (1999) and Costello and Osborne (2011) argued that this is very rare, and results in the social sciences are likely to be between .40 and .70, and considered strong if each factor contains at least three items (Costello & Osborne, 2011). However, achieving five items or more within one component is considered very strong, and less than three is considered weak (Costello & Osborne, 2011; Fabrigar et al., 1999).

In addition, FA can produce correlated variables in more than one component. This is called “crossloading” (Tabachnick and Fidell, 2007; Costello & Osborne, 2011) or, as Fabrigar et al. (1999) also described it, “cross-factor loading”. Crossloading occurs when one variable has a minimum loading of .40 in one component and .32 or higher in another component (Fabrigar et al., 1999; Costello & Osborne, 2011). Crossloading example in Table 9.
Table 9: Crossloading example.

<table>
<thead>
<tr>
<th>Extraction Method</th>
<th>PAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotation Method</td>
<td>Varimax</td>
</tr>
<tr>
<td>Factors</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Be part of a community</td>
<td>.652 .323 .126</td>
</tr>
<tr>
<td>You know the person who created the project</td>
<td>.539 -.030 .045</td>
</tr>
</tbody>
</table>

3.8.5 MANOVA

The one-way multivariate analysis of variance (MANOVA) is a statistical method to determine whether there are differences among a number of dependant and independent groups (Norušis, 2006). MANOVA differs from ANOVA in being able to analyse more groups, as ANOVA is limited to only two (Norušis, 2006).

The data set analysed contains a number of groups: 1) successful projects; 2) unsuccessful projects; 3) new backers; and 4) returning backers. MANOVA is used to determine whether or not both kinds of backers (i.e. new backers and returning backers) contribute equally to the success of projects. That could be achieved by analysing the means of the number of both types of backers associated with each project and the project outcome (successful or unsuccessful).

3.8.5.1 Kickstarter Backers

Two methods have been used to collect the number of backers and the outcome of Kickstarter projects since the gathering of URLs in 2015. In the first method, the data gathering was able to show the number of new backers and returning backers but without the outcome of the project as the project webpage did not include all the necessary information, meaning we were unable to collect all the data needed to run the analysis. However, we successfully gathered the data we need via a second method, but 3,707 of the URLs were broken (58%). Therefore, the analysis was only conducted on 1637 successful projects (18%) and 990 unsuccessful projects (15%), while 109 projects were cancelled (2%) (Figure 17).
The numbers of new and returning backers are only found on a subpage of the project webpage, called “Community”. However, there is a reason for such a high number for broken URLs. The community subpage was launched sometime in 2015 (the exact date is not available), thus any project started before the launch of the community subpage does not have it, which returns as a broken URL (Figure 18).

Figure 18: Kickstarter Project Page Without the Community Subpage

KICKSTARTER PROJECT WEBPAGE
https://www.kickstarter.com/projects/37403014/yoko-oh-notes/

KICKSTARTER COMMUNITY SUBPAGE (BROKEN)
https://www.kickstarter.com/projects/37403014/yoko-oh-notes/community
3.8.6 ANOVA

ANOVA is a statistical method for testing the hypotheses based on the means, and then summarising the results (Cohen and Cohen, 2013; Ostertagová and Ostertag, 2013). ANOVA and MANOVA analyses are commonly used in analysing customers’ spending (Fox et al., 2004; Netemeyer et al., 2012), thus, by using them to analyse the users’ funding amount in crowdfunding is appropriate as both are of the same nature.

T-test and F-test are two statistical methods for testing the hypotheses. The T-test is only limited to test two groups compared to the F-Test, which can be applied for more than two (Cohen, 1988). This research used the two methods wherever appropriate.

3.8.6.1 Normality Test

The data fails to reject the null hypothesis of normality test, which suggests that the data is not normally distributed (Ostertagová and Ostertag, 2013). In the case of violation, the data analysis should be performed using appropriate methods such as a nonparametric (distribution-free) test, Levene test, Spearman’s Rank-Order, and Kruskal-Wallis test (Siegal, 1956; Hauke and Kossowski, 2011; Puth et al., 2015). This is to prevent underestimating or overestimating the significance level (Ostertagová and Ostertag, 2013).

3.8.6.2 Test of Homogeneity of Variance

Prior to the ANOVA test, a test has been applied to determine whether or not homogeneity of variance exists in the data, and provides further directions regarding what kind of analysis to apply (Ostertagová and Ostertag, 2013). As a result, the test shows that the data represents an unbalanced sample, which means the number of participants of each group analysed are not equal (e.g. 100 Males and 80 Females) (Cohen and Cohen, 2008). In this case, the Levene test is used as it is the one most suitable for unbalanced samples when compared to either Cochran’s or Harley’s tests, which both assume the number of participants is equally distributed among the groups analysed (Ostertagová and Ostertag, 2013).

3.8.7 Correlation Coefficient

3.8.7.1 Spearman’s Rank-Order

This type of correlation analysis is known as nonparametric (distribution-free) and measures the strength of association between two variables (Hauke and Kossowski, 2011). Nonparametric statistics fit the data analysed for two reasons: 1) the type of data is ordinal, and 2) the distribution of responses are not equal among groups (Siegal, 1956). The results
of a nonparametric analysis are generated based on the ranking scores rather than the numerical values (Siegal, 1956). As such, Spearman’s Rank-Order is used for ordinal data instead of Pearson’s, which is used for either interval or ratio data to determine the linear association between two variables (Hauke and Kossowski, 2011; Puth et al., 2015). Performing Spearman rho correlation coefficient on ordinal data should determine the strength of association between the funding amount and the motivation for funding.

3.8.7.2 Monotonic Association

The monotonic association can be either positive or negative (Somers, 1962). Positive monotonic correlation occurs when the value of two variables increases or decreases; while the negative monotonic correlation occurs when the value of one variable increases, and the value of the other variable decreases (Somers, 1962).

Spearman’s correlation coefficient allows the researcher to determine whether or not the association between the funding amount and the motivation for funding is monotonic. That is to say, in our case, to find out whether crowdfunding users pledge a higher or lower amount of money based on the motivation for funding.

3.9 Conclusion

This chapter presented the methodology employed to conduct this research, starting from the grounded theory, and flowed by the sampling method and then the observational techniques used in order to guide the conducting of an online survey. The participants of the online survey have been reached using crowdsourcing techniques, including the members of online communities, in order to gather data examining their motivations for funding crowdfunding projects. Only those who funded at least one crowdfunding project were able to complete the survey, ensuring that we gathered the data from genuine backers on crowdfunding platforms.

This research employs a mixed-methods approach, including both quantitative and qualitative data and analyses, as well as triangulation. The data analysis, however, applied a number of statistical techniques, such as factor analysis, using a number of different rotation methods, MANOVA, ANOVA, and correlation coefficient in order to answer the research questions.
CHAPTER 4: DATA GATHERING AND ANALYSIS

4.1 Introduction
This section presents the data gathered from our online observations and online survey. A number of statistical analyses will also be applied in order to examine the backers’ motivations for funding crowdfunding projects.

4.2 Kickstarter
This research first observed certain details of projects on Kickstarter such as their titles, status (successful/unsuccessful), funding goal, funding raised, and number of backers. Gathering this data was challenging because Kickstarter does not keep all the data publicly available. Unsuccessful projects are removed from the browse area and search results on Kickstarter, including any links from search engines. Users can only browse live projects (ongoing campaigns) as well as successful projects (funded campaigns). Kickstarter stated the following on their FAQs page (Kickstarter FAQs, 2015):

1. “Kickstarter doesn’t have a browse area for projects whose funding was unsuccessful.”
2. “Kickstarter de-indexes projects (from external search engines) whose funding was unsuccessful. This means that unsuccessfully funded projects don’t show up in those search results.”

In order to overcome these challenges, URLs of live projects from each category (e.g. Arts, Technology, Games) were obtained, then 60 days later the project details were gathered (after the campaigns have been concluded), which revealed successful, unsuccessful and cancelled projects. Having the projects’ URLs while the campaigns are ongoing enabled the webpages of unsuccessful projects to be accessed, as Kickstarter only removes these URLs from the browse area and search results, as well as from search engines but do not delete the data.

After successfully gathering the data needed, we concluded that the majority of successful projects do not strive to succeed. Based on a sample of 6443 Kickstarter projects, 97.3% of successful projects (2102 from 2162) raised more than 100% of their funding goals. However, based on these results we also found that unsuccessful projects are increasingly leaving the crowdfunding platform based on an “all-or-nothing” fundraising model. This
suggests that creating tools to utilise those funds could increasingly help some projects raise the funds they need to pursue their projects and thus create economic and social value (i.e. products/services and jobs) as well as promoting innovation.

4.3 Observations I

The data observed from crowdfundingforum.com (title: Kickstarter vs. Indiegogo) has 125 participants comparing both crowdfunding platforms. The analysis of this data was made using NVvivo (qualitative data analysis software). The first step was to run a query to generate the most frequent words, and the second step was creating the Word Tree in order to capture a general insight into the data (Sample in Appendix 1). The analysis reveals the following:

- Participants prefer Kickstarter over Indiegogo for its reputation, the strong sense of community, and for the success rate it generates because a larger audience is reached via Kickstarter than Indiegogo.

- Participants who use Indiegogo state that they do not achieve much success in Indiegogo, and they wish they could launch their campaigns on Kickstarter instead. However, participants pointed out that Kickstarter is sometimes not available to them to create projects, depending on where they live (outside the US, UK, and Canada), meaning they can only back projects not raise funds.

The key insight derived from these observations is that raising funds via Kickstarter is currently limited to specific regions, and they may need to consider extending the platform to operate on a wider scale. This may significantly increase the value of the platform and help gain a larger audience in order to raise funds even more effectively.

Another insight is derived from published research; Ramos and Gonzalez (2016) suggest that crowdfunding platforms need to consider offering their platforms in different languages in order to improve accessibility and to be used by a larger audience (particularly non-English-speaking users).

Based on these observations and the recommendations of published research, we can strongly suggest Kickstarter expands to operate with a global scale in order to increase their user-base (with the observations showing that a number of potential participants already exist who are waiting for Kickstarter to be available for them). Also, in order to successfully extend to a global scale, they should offer the platform in different languages, attracting non-English-speaking users to participate.
4.4 Observations II

Question: “How many projects have you backed thus far and why did you decide to back them? (kickstarterforum.org, 2014)”

In order to analyse the data observed from the forums and online communities, it was essential to code the participants’ statements in order to identify these statements using the NVivo query tool. This does not make any significant changes to their meaning. Rather, this just ensures that all statements are in the same format so no relevant information is missed. Table 10 represents a sample of this data (including original and coded statements). Samples (Word Tree in Appendix 2 and Responses in Appendix 3)

Table 10: Original and Coded Statements

<table>
<thead>
<tr>
<th>Original Statement</th>
<th>Coded Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Only 12”</td>
<td>I backed 12 projects</td>
</tr>
<tr>
<td>“Around 30”</td>
<td>I backed 30 projects</td>
</tr>
<tr>
<td>“Two”</td>
<td>I backed 2 projects</td>
</tr>
</tbody>
</table>

4.4.1 The Number of Projects

Analysing the first quantitative part of the question “How many projects have you backed?”, the data reveals the following results in (Figure 19) according to 130 respondents from a total of 162. As the data is taken from a forum, some replies are not direct answers to the questions; some are just interactions between the users of the forum, and some do not state how many projects they backed, meaning that they are excluded from the data.

Figure 19: Number of Projects Backed
Table 11: Number of Projects Backed

<table>
<thead>
<tr>
<th>Description</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average/backer</td>
<td>16.60</td>
</tr>
<tr>
<td>Highest</td>
<td>261</td>
</tr>
<tr>
<td>Lowest</td>
<td>1</td>
</tr>
</tbody>
</table>

Analysing the number of projects backed based on the motivation for funding, Figure 20 shows backers motivated by owning something unique have backed 68 crowdfunding projects in average, compared backers who found it “the project” interesting backed 39 projects in average, and backers motivated by be part of something backed 32 projects in average.

**Figure 20 The Average Number of Projects Backed Based on the Motivation for Funding**

These findings can then be organised according to Kuppuswamy and Bayus (2015), who identified three types of backers (immediate, delayed, and serial backers). Serial Backers are “individuals who have backed more than one Kickstarter project (Kuppuswamy and Bayus, 2015, p.16)”. Therefore, according these findings, the majority of backers are serial backers.
4.4.2 Backers’ Motives

Analysing the second qualitative part of the question “why did you decide to back them?” revealed interesting motives. Not surprisingly, the top motive for backers is the reward, as these questions were asked of participants in a reward-based crowdfunding platform (Kickstarter). Therefore, these results only apply to this particular platform. We do not claim that these results can be generalised to apply to other types of crowdfunding platforms.

The use of grounded theory in this respect is based on the fact that we did not design the questions in order to get specific answers. Therefore, we observed the data as it was available and then used the established theories about backers’ motives in our findings for potential elaborations, as stated previously in this chapter.

In order to generate these results, the qualitative data was imported into NVivo. Each response had its own source (i.e. A1, A2, A3 etc.). The first step was using the Query Wizard, which generated a list of the most frequent words. Based on that, a Word Tree was created in order to get an overview of the data before starting the analysis (sample in Appendix: 1).

4.4.3 Backers’ Motives Analysis

After completing the first part of the analysis, all responses were read carefully in order to identify patterns, and which were then added to Nodes. These Nodes represent the number of patterns found (including the number of times each pattern is identified), and according to the purpose of this research, the patterns identified the backers’ motives to back projects. This is similar approach used by Gerber et al. (2012), Gerber and Hui (2013) and Ordanini et al. (2011). Moreover, other patterns were identified such as “intentions to back more projects” as well as “backers promoting projects they are backing”, hoping that they succeed in order to get their rewards.

As stated previously, there were 162 responses to these questions. A total of 153 (94.4%) responses were valid with regards to why the decision was made to back them (i.e. Kickstarter projects). The top motive “Seek Rewards” is found 71 times from a total of 68 responses, as some respondents repeated the motive more than once. For instance, one of the 162 responses states “I usually back for a copy of whatever thing they’re creating” and “I just want the book/album/piece of tech”. Both statements were identified as a “Seek Rewards” motive. However, the final results show that 68 (44.4%) out of 153 respondents backed projects because they wanted the reward, e.g. a copy of the album, film, or for a
product pre-order. The second largest group 62 (40.5%) responses backed projects in order to “Support Creators and Causes”. This motive is identified from a variety of statements such as “It’s a great way to help people achieve something”, “What prompts me to support a project is the story behind the project as well as the passion of the creator”, “someone has put in a lot of time and effort and is very genuine about their project”. The list of backers’ motives is presented in (Figure 21).

Figure 21: The User Motivations for Funding

4.4.4 Clustered Motives

The purpose of applying cluster analysis to the results is “to classify units (whether persons or objects) so that there is a greater similarity between units within groups than between units in different groups (Klastorin, 1983). This means that by applying cluster analysis to the motives of backers it helps in developing motivations groups, and greatly helps in understanding the characteristics of participants in crowdfunding platforms.

A cluster analysis for the backer’s motives (Figure 22) reveals a number of motivation groups. For instance, the “Seek Rewards” motive is significantly clustered with the project
being “interesting” and “creative”. While “connecting with people with similar interests” is significantly clustered with “Social Good”, “be part of something” and “support creators and causes”. Another cluster analysis was applied on the responses, which reveals how the majority of backers share word similarity (Figure 23).

**Figure 22: Cluster Analysis for the Motivations for Funding**

Moreover, one of the key findings the data reveals is concerning the “emotions” motive. Although it is only found in 10 responses from 153, this motive seems to be a great driver to back a project. One of the respondents stated that “It reminded me of the games I played when I was a kid with my mom, and then the bonus of it having dogs on it. My family and I always enjoyed game time”, and another respondent explained their a similarly emotional reasons for backing a project: “The docs I have funded were about people or things I felt strongly about, and hoped other people would get to see the films and feel the same”. 
Based on these responses, creating crowdfunding projects that cause potential backers to have an emotional response could improve their likelihood of success.

**Figure 23: Cluster Analysis on the Respondents**

Furthermore, the data shows a number of other interesting patterns, identified as “Promoting the projects they are backing”, and “Intention to back more projects”. The former is found in 20 responses from 153, while the latter in 11. Statements in Table 12.

**Table 12: Descriptive Patterns**

<table>
<thead>
<tr>
<th>Promoting the projects they are backing</th>
<th>Intention to back more projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I wanted this project to be successful and to help others like I knew that it could.”</td>
<td>“And I plan to back a lot more.”</td>
</tr>
<tr>
<td>“I hope this gets funded! If anyone is interested, it can be found at[...]”</td>
<td>“I will definitely be backing more in the future.”</td>
</tr>
<tr>
<td>“I don’t know if they’ll reach their goal in time but I hope they do.”</td>
<td>“In the future, I really look forward to backing awesome campaigns.”</td>
</tr>
</tbody>
</table>

Based on our understanding of these two patterns, individuals may promote the projects they are backing either if they are created by someone they know, or if they are really interested in getting a reward and therefore try to help it succeed. According to Ordanini
et al. (2011), participants in crowdfunding platforms often take part in promoting the project to help it get funded. Moreover, the intention to back more projects could also be a positive indication that crowdfunding is growing and backers are keen to help project creators.

4.5 Factor Analysis

In order to produce as accurate results as possible, this study has applied EFA using a number of extraction methods: 1) PCA, 2) ML, and 3) PAF, including two different rotation methods: Varimax (orthogonal) and Direct Oblimin (oblique). The results in Table 13 only compare PAF using both Varimax and Direct Oblimin, (other results in Appendix 4,5,6).

There are only 13 of the 16 items correlated within a number of four factors (components). However, three low loading items (below .40) have been removed due to their negative impact on the analysis outcome (Costello & Osborne, 2011). Moreover, as shown in Table 13, with Varimax, there are three items with a crossloading of .32 and higher. Costello and Osborne (2011) suggest that the researcher in this case should drop out low loading and crossloading items and then reapply the analysis, which could possibly solve the problems and produce better results.

Table 13: Principal Axis Factoring with 3 factors and 13 items

|                      | Extraction Method | PAF          |               |               |               |               |               |
|----------------------|-------------------|--------------|---------------|---------------|---------------|---------------|
|                      | Rotation Method   | Varimax      | Direct Oblimin|
| Factors              |                   | 1            | 2            | 3            | 1            | 2            | 3            |
| Seek rewards         |                   | -.281        | .800         | .094         | -.306        | .836         | .097         |
| Support creators     |                   | .312         | -.103        | .535         | .250         | -.187        | .519         |
| and causes           |                   | .757         | .235         | .124         | .767         | .122         | .024         |
| Strengthen connections|                 | .652         | .323         | .126         | .658         | .225         | .036         |
| Be part of a         |                   | .539         | -.030        | .045         | .553         | -.109        | -.019        |
| community            |                   | .586         | -.092        | -.039        | .612         | .014         | -.116        |
| You know the person  |                   | .536         | .019         | .105         | .541         | -.063        | .041         |
| who created the      |                   | .271         | .501         | .063         | .271         | .462         | .010         |
| project              |                   | -.029        | .040         | .455         | -.093        | .009         | .472         |
| Because it's a local |                   | .559         | .290         | .276         | .541         | .193         | .204         |
| project              |                   | .275         | .440         | .034         | .279         | .401         | -.018        |
| Interested in        |                   | .135         | .228         | .528         | .066         | .171         | .519         |
| interacting with     |                   | .575         | -.006        | .194         | .569         | -.101        | .130         |
| others               | Indicates correlated item | Indicates crossloading |
According to the results in Table 13, the issue with crossloading has been resolved using PAF under Direct Oblimin, while Varimax produced one crossloading item. The number of factors (components) were also reduced from four to three. The result of PAF Direct Oblimin (13 items) is illustrated in Figure 24.

**Figure 24: Association Between the Motivations for Funding**

<table>
<thead>
<tr>
<th>Social</th>
<th>Rewards</th>
<th>leisure</th>
</tr>
</thead>
</table>
| • Strengthen connections  
• Be part of a community  
• Know the person who created the project  
• Local project  
• Altruism  
• Interested in interacting with others  
• Generosity | • Seek rewards  
• Reciprocity  
• Interested in financial results | • Support creators and causes  
• Project is creative/innovative  
• Fun |

**Table 14: Maximum Likelihood with 3 factors and 13 items**

<table>
<thead>
<tr>
<th>Extraction Method</th>
<th>ML</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotation Method</td>
<td>Varimax</td>
</tr>
<tr>
<td>Factors</td>
<td>1</td>
</tr>
<tr>
<td>Seek rewards</td>
<td>-.283</td>
</tr>
<tr>
<td>Support creators and causes</td>
<td>.304</td>
</tr>
<tr>
<td>Strengthen connections</td>
<td>.792</td>
</tr>
<tr>
<td>Be part of a community</td>
<td>.680</td>
</tr>
<tr>
<td>You know the person who created the project</td>
<td>.524</td>
</tr>
<tr>
<td>Because it’s a local project</td>
<td>.545</td>
</tr>
<tr>
<td>Altruism</td>
<td>.506</td>
</tr>
<tr>
<td>Reciprocity</td>
<td>.278</td>
</tr>
<tr>
<td>Project is creative/innovative</td>
<td>-.037</td>
</tr>
<tr>
<td>Interested in interacting with others</td>
<td>.619</td>
</tr>
<tr>
<td>Interested in the financial result</td>
<td>.281</td>
</tr>
<tr>
<td>Fun</td>
<td>.161</td>
</tr>
<tr>
<td>Generosity</td>
<td>.531</td>
</tr>
</tbody>
</table>

*Indicates correlated item  
*Indicates crossloading
In contrast, ML with 13 items (Table 14) also produced good results. Unlike other methods, both rotation methods appear to have no crossloadings, but one item is slightly lower than .40 in Direct Oblimin. Accordingly, ML could be a better consideration if the factor loading (.394) is sufficient, because it is able to produce the results without a crossloading using both Varimax and Direct Oblimin. Nevertheless, ML Varimax can still be taken into consideration alongside PAF Direct Oblimin.

Finally, Costello and Osborne (2011) strongly recommend Oblique (Direct Oblimin) for the social sciences studies. PAF Direct Oblimin produced the best results when compared with PCA and ML, as well as PAF Varimax. There were no crossloading items on both occasions (16 and 13 items), with a minimum of three items in each factor (.40 and higher), and therefore it is deemed worthy of consideration in this study.

As a result, the factor analysis rejects the null hypothesis as it is evident that there is a relationship between the motivations for funding.

4.6 Kickstarter Backers

Using SPSS Computing Variables, the analysis was able to draw upon how many successful projects have more new backers than returning backers and vice versa. The results are in Table 15.

| Table 15: Descriptive Statistics on Successful Projects |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                | N               | Minimum | Maximum | Sum            | Mean            | Std. Deviation  |
| New            | 773             | 6       | 2393    | 57035          | 73.78           | 140.177         |
| Returning      | 851             | 6       | 34874   | 385233         | 452.68          | 1969.563        |
| Equal          | 13              | 5       | 142     | 428            | 32.92           | 40.020          |
| Valid N (listwise) | 0        |          |          |                |                 |                 |

Based on a sample of 1,637 successful projects, the table shows that 773 projects succeeded with more new backers than returning backers; compared with 851 projects, which had more returning backers than new backers; and 13 projects that had equal numbers of new and returning backers.
Figure 25 demonstrates that 52% of successful projects were supported by more returning backers than new backers ($M = 452.68$), compared with 47% that were supported by more new backers than restoring backers ($M = 73.78$). As a result, these numbers show that both types of backers may have an equal influence on the outcome of Kickstarter projects, despite the fact that returning backers have a larger mean than new backers. However, according to the descriptive statistics in Table 15, the vast majority of backers in all successful projects are returning backers, with 385,233 compared to 57,035 for new backers. Putting that in a wider context, we can also compare these numbers of unsuccessful projects in order to evaluate this phenomenon. Applying the same computing variables in SPSS, the results in Table 16 clearly shows that returning backers are less involved in unsuccessful projects ($M = 46.31$).
4.6.1 MANOVA

MANOVA was applied in order to measure the contributions of Kickstarter backers (i.e. new backers and returning backers) to the projects. This has been applied on a combined sample of 1,637 successful and 990 unsuccessful projects (2,627 in total).

4.6.2 Results

There was a significant difference in the contribution of Kickstarter backers on the outcome of the projects: Wilk’s Λ = .990, $F(2, 2624) = 13.22$, $p = .001$, partial $\eta^2 = .01$. Furthermore, MANOVA was applied for each dependent variable, with each MANOVA evaluated at an alpha level of .025. There was a significant difference in the contribution measured between new backers and returning backers on the outcome of the projects, with new backers $F(1, 2625) = 9.31$, $p = .002$, partial $\eta^2 = .004$, ($M = 119.608$) on successful projects and ($M = 21.297$) on unsuccessful projects, while returning backers had $F(11, 2625) = 23.86$, $p = .001$, partial $\eta^2 = .03$. Percentage Comparison

<table>
<thead>
<tr>
<th></th>
<th>New Backers</th>
<th>Returning Backers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>68%</td>
<td>32%</td>
</tr>
</tbody>
</table>

Table 16: Descriptive Statistics on Unsuccessful Projects

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Sum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>473</td>
<td>6.00</td>
<td>523.00</td>
<td>13765.00</td>
<td>29.1015</td>
<td>40.25831</td>
</tr>
<tr>
<td>Return</td>
<td>502</td>
<td>6.00</td>
<td>891.00</td>
<td>23252.00</td>
<td>46.3187</td>
<td>77.19404</td>
</tr>
<tr>
<td>Equal</td>
<td>15</td>
<td>5.00</td>
<td>74.00</td>
<td>432.00</td>
<td>28.8000</td>
<td>27.40751</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
\( p = .001, \text{ partial } \eta^2 = .009, (M = 252.266) \) on successful projects and \((M = 29.130)\) on unsuccessful projects.

4.7 The User Motivation and the Funding Amount

Crowdfunding users vary in their motivations for funding and the amount they pledge. It is evident that male users pledge a higher funding amount than female users (Figure 27). Moreover, the funding amount varies over the age groups (Table 17). The means of the funding amount are also different among age groups (Figure 28). The descriptive statistics table below reveals the funding amount range based on all age groups across all participants.

**Table 17: Descriptive Statistics: age groups and the funding amount**

<table>
<thead>
<tr>
<th>Age</th>
<th>18 to 24</th>
<th>25 to 34</th>
<th>35 to 44</th>
<th>45 to 54</th>
<th>55 to 64</th>
<th>65 to 74</th>
<th>75 or older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding Amount</td>
<td>Count</td>
<td>Count</td>
<td>Count</td>
<td>Count</td>
<td>Count</td>
<td>Count</td>
<td>Count</td>
</tr>
<tr>
<td>$1 - $25</td>
<td>9</td>
<td>20</td>
<td>5</td>
<td>3</td>
<td>20</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>$26 - $50</td>
<td>11</td>
<td>14</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>$51 - $75</td>
<td>4</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>$76 - $100</td>
<td>5</td>
<td>11</td>
<td>3</td>
<td>1</td>
<td>9</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>$101 - $150</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>$151 - $200</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>$201 - $250</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>$251 or over</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>9</td>
</tr>
</tbody>
</table>

**Figure 27: Means of the Funding Amount Among Genders**
4.7.1 Correlation Coefficient

The results of Spearman’s rho correlation coefficient show that according to age group, users pledge a higher amount of money based on different motivations. Table 18 below shows each age group and all the motivations correlated with a higher funding amount. According to this, it is evident that there is a monotonic association between the funding amount and the motivation for funding, rejecting the null hypothesis.

Table 18: Spearman’s rho correlation coefficient results

<table>
<thead>
<tr>
<th>AGE GROUP</th>
<th>POSITIVE ASSOCIATION</th>
<th>NEGATIVE ASSOCIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 – 24</td>
<td>None</td>
<td>Project is creative (-.359) (.04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Emotional attraction (-.43) (.012)</td>
</tr>
<tr>
<td>25 – 34</td>
<td>Reward (.23) (.064)</td>
<td>None</td>
</tr>
<tr>
<td>35 – 44</td>
<td>Strengthen connections (.596) (.009)</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Curiosity about crowdfunding (.48) (.044)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Altruism (.492) (.038)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Project is creative (.44) (.067)</td>
<td></td>
</tr>
<tr>
<td>45 – 54</td>
<td>Strengthen connections (.742) (.091)</td>
<td>Project is creative (-.787) (.063)</td>
</tr>
<tr>
<td></td>
<td>Altruism (-.907) (.031)</td>
<td></td>
</tr>
<tr>
<td>Backers' Age Group</td>
<td>Motivations for Funding</td>
<td>Correlation Coefficients</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>55 – 64</td>
<td>Support Creators and Causes (.283) (.095)</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Be part of a community (.34) (.043)</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Strengthen connections (.323) (.055)</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Interested in interaction with others (.352) (.035)</td>
<td>None</td>
</tr>
<tr>
<td>65 – 74</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>75 AND OLDER</td>
<td>Reward (.429) (.002)</td>
<td>Interested in interacting with others (-.298) (.034)</td>
</tr>
</tbody>
</table>

A Spearman's rank-order correlation was run to determine the association between the backers’ motivations for funding and the funding amount they pledge to crowdfunding projects. The results reveal a number of key findings, which are: 1) Significant Positive Association; 2) Significant Negative Association; and 3) Trending Associations, both positive and negative. The positive association means that backers fund a higher amount of money based on their motivation for funding, whilst the negative association means that backers fund a lower amount of money based on their motivation for funding. In the social sciences, correlations are measured as following: large (0.5), medium (0.3), and small (0.1) (Cohen, 1988).

4.7.2 Significant Positive Association

There was a statistical significant positive correlation between the funding amount and “strengthen connections”: $r_s = .596, p < .009$; “curiosity about crowdfunding”: $r_s = .48, p < .04$; and “altruism”: $r_s = .492, p < .03$ in backers’ age group 35 – 44.

There was a significant positive correlation between the funding amount and “be part of a community”: $r_s = .34, p < .04$; “strengthen connections”: $r_s = .323, p < .05$; and “interested in interacting with others”: $r_s = .352, p < .03$ in backers’ age group 55 – 64; and “seek rewards”: $r_s = .429, p < .002$ in backers’ age group 75 and older.

4.7.3 Significant Negative Association

There was a statistical significant negative correlation between the funding amount and “project is creative”: $r_s = .359, p < .04$; and “emotional attraction”: $r_s = .43, p < .01$ in backers’ age group 18 – 24.
There was a statistical significant negative correlation between the funding amount and "altruism" $r_s = .9, p < .03$ in backers’ age group 45 – 54. And "interested in interaction with others": $r_s = .298, p < .03$ in backers’ age group 75 and older.

4.7.4 Trending Associations
The findings reveal a number of positive and negative associations that are nearly significant.

4.7.4.1 Trending Positive Associations
There was a trending positive correlation between the funding amount and “seek rewards”: $r_s = .23, p < .06$ in backers’ age group 18 – 24; “project is creative”: $r_s = .44, p < .06$ in backers’ age group 35 – 44; “strengthen connections”: $r_s = .742, p < .09$ in age groups 45 – 54; “support creators and causes”: $r_s = .283, p < .09$ in backers’ age group 55 – 64.

4.7.4.2 Trending Negative Associations
There was a trending negative correlation between the funding amount and “project is creative”: $r_s = .787, p < .06$ in backers’ age 45 – 54.

4.8 Hypothesis Results
This section presents the results in order to decide whether to reject or fail to reject the null hypotheses.

4.8.1 Hypothesis 1: The means of the funding amount are equal among genders
The group means were statistically significantly different ($p < .001$) and, therefore, we can reject the null hypothesis and accept that alternative hypothesis: The means of the funding amount are not equal among genders.

4.8.2 Hypothesis 2: The means of the funding amount are equal among age groups
The group means were statistically significantly different ($p < .001$) and, therefore, we can reject the null hypothesis and accept the alternative hypothesis: The means of the funding amount are not equal among age groups.

4.8.3 Hypothesis 3: There is no association between the motivations for funding
There were statistically significant strong associations ($p < .001$) between the users’ motivations for funding, therefore, we can reject the null hypothesis and accept the alternative hypothesis: There is a strong association between the motivations for funding.
4.8.4 Hypothesis 4: There is no association between the funding amount and the motivation for funding

There was a statistically significant positive association ($p < .05$) between the funding amount and the motivation for funding. Also, there was a statistically significant negative association ($p < .03$) between the funding amount and the motivation for funding. Therefore, we can reject the null hypothesis and accept the alternative hypothesis: There is a strong association between the funding amount and the motivation for funding.

4.8.5 Hypothesis 5: Both kinds of backers equally contribute to the success of projects

There was a statistically significant difference ($p = .001$) in the mean of backers’ contributions to the projects. Therefore, we can reject the null hypothesis and accept the alternative hypothesis: The returning backers contribute more to the success of projects.

4.9 Conclusion

This chapter has presented the process of gathering the data, the analysis of the data and the results. It is evident that the means of the funding amount differ among genders and age groups; that there are associations between the backers’ motivations for funding; that there are associations between the backers’ motivations for funding and the funding amount; and that the returning backers contribute more to the success of crowdfunding projects.

To conclude, the associations between the backers’ motivations for funding and the funding amount differ among age groups; some have proven to have a statistically-significant positive association, and some have proven to be negative, while some remain non-significant among all age groups. What is particularly interesting is that the same motive found to be positively associated in one age group could be found to be negative in another age group. For instance, the altruism motive is positively associated with the funding amount in age group 34–44, yet negatively associated in the age group 45–54.

The success of Kickstarter projects relies significantly on the established members of the community, which we have classified as the returning backers. In conclusion, project creators need to create interest within the existing community to help secure the funds they need in order to succeed, as opposed to attempting to capture public interest (i.e. users who are not on Kickstarter), since they are unlikely to sign up on the platform and fund the project. It is Kickstarter’s returning backers that do that, and do that well.
CHAPTER 5: DISCUSSION AND INTERPRETATION

5.1 Introduction

This research examines the users’ motivation for participation in crowdfunding as well as the success factors for raising funds. We built on the theory of user motivation and found a number of associations between the motivation for funding crowdfunding projects and the funding amount, suggesting a new success factor that contributes to the body of knowledge in this area. For example, it is evident that there is a strong positive association between the “strengthen connections” motive and the funding amount, hence it is likely that the backer who is driven by this motive funds the project with a higher amount.

We built a theoretical model that examined both the user motivations for funding and the amount they pledged based on their motivations. Therefore, this study offers a deeper understanding of the crowdfunding backers, contributing to improving the design of the crowdfunding systems that, ultimately, should help project creators raise the funds they need. These key findings should help connecting the right backer to the right project.

5.2 The User Motivations for Funding

According to Deci and Ryan (2002), individuals have intrinsic and extrinsic motivations, and one decreases the level of the other i.e. extrinsic motivations decreases the intrinsic motivations an individual would have. When it comes to the backers’ motivations to fund crowdfunding projects, previous studies identified a number of motives in reward-based crowdfunding systems. Gerber et al. (2012) suggested that backers are motivated by such factors as “seek reward”, “support projects and causes”, “strengthen connections”, and “be part of a community”. Our findings have validated those motives and revealed a number of positive associations between them and the funding amount. These motives are found to have statistically significant associations with the funding amount, which vary among backers age groups.

Argawal et al. (2010) suggested that backers are “emotionally attracted to the project”, “they know the person who created the project”, “they are familiar with the project”, “local project”, but they did not clarify how they are associated with the funding amount. Our findings suggest that “emotionally attracted with the project” has a statistically significant association with the funding amount in backers age group 18 – 24, and there is neither a
positive or negative association found in other age groups. Also, both “they are familiar with the project” and “local project” motives have no significant association with the funding amount.

Ordanini et al. (2011) suggested that backers in reward-based and equity-based crowdfunding systems are motivated by “innovation”, “interested in interacting with others”, “identify themselves with the company or the product”, and “interested in the financial results”. However, our findings suggest that innovation and project creativity has a statistically-significant negative association with the funding amount in backers age group 18 – 24 and 45 – 54 trending, but also a trending positive association in backers age group 35 – 44, and a non-significant association among other age groups. The “interested in interacting with others” has a statistically significant positive association with the funding amount in backers age group 55 – 64, and a statistically-significant negative association in backers age group 75 and older. The other motives in our findings have a non-significant association.

Hemer et al. (2014) suggested that backers in a reward-based crowdfunding system are motivated by three key motives: “interested in the product or service”, “attainment of self-affirmation”, and “fun”. However, our findings show that these motives have a non-significant association with the funding amount.

Guerzoni et al. (2016) suggested that backers fund crowdfunding projects due to “reward”, “connection”, “innovation”, and “generosity”. With “reward”, “innovation”, and “knowing the person” (“connection”) covered earlier, our findings suggest that generosity has a non-significant association with the funding amount among all backers.

Bretschneider et al. (2014) suggested that in an equity-based crowdfunding system, backers are motivated by “curiosity about crowdfunding”, “altruism”, “reciprocity”, and “return”. Our findings suggest that there is a statistically significant positive association between “curiosity about crowdfunding” and “altruism”, and the funding amount in backers age group 35 – 44. Also, there is a statistically-significant negative association between “altruism” and the funding amount in backers age group 45 – 54.
5.3 The Funding Association

A positive association means that the backer pledges a higher funding amount based on the motivation for funding, while the negative association means that the backer pledges a lower funding amount.

5.3.1 Reward

Bretschneider and Leimeister (2017) suggest that in a reward-based crowdfunding platform there is a positive association between the funding amount and the “reward” motive. However, our findings suggest that the positive associations differ among motivations and age groups. As for the reward, it is only positively associated with the funding amount in two age groups (“25 – 35” and “75 and older”), and not among all crowdfunding backers.

5.3.2 Altruism

Our findings suggest that there is only one negative association between the altruism motive and the funding amount, which is found to be statistically-significant in backers’ age group 45 – 54; as well as one statistically-significant positive association in backers’ age group 34 – 44. The rest of the age groups showed no significant association. This contrasts with Bretschneider and Leimeister (2017), whose findings suggest that the altruism motive association is negative and non-significant among all crowdfunding backers.

5.3.3 Personal Connections

There are several motives that come under the category “personal connections” because of their nature, for example, “strengthen connections”, “support projects and causes”, “be part of a community”, and “interacting with others”. According to Bretschneider and Leimeister (2017) personal connections include altruism, supporting the project and causes, and supporting local projects, with which the backer shares cultural values, including supporting a friend or family member.

Our findings suggest that the “strengthen connection” motive is positively associated with the funding amount in backers’ age groups 35 – 44 and 55 – 64, and is statistically significant. However, the significance level is trending in backers’ age group 45 – 54. Moreover, the “be part of a community” motive is positively associated with the funding amount in backers’ age group 55 – 64 and it is also statistically significant. Furthermore, “interacting with others” is positively associated with the funding amount in backers’ age groups.
group 55 – 64, which is also statistically significant. It also has a statistically-significant negative association with the funding amount in backers’ age group 75 and older.

In contrast, Bretschneider and Leimeister (2017) suggest that there is a positive association between the “recognition” motive and “image” motives with the funding amount, and found that they are statistically significant.

5.3.4 Emotion

According to Bretschneider and Leimeister (2017), backers have a liking motive that is triggered when they feel that they like a project, which we refer to as the “emotion” motive. Bretschneider and Leimeister (2017) suggest that there is a positive association between the “liking” motive and the funding amount, but our findings suggest that there is a non-significant association among all backers’ age groups, except a statistically-significant negative association with the backers’ age group 18 – 24.

5.4 Success Factors

Previous studies on the success factors of crowdfunding projects revealed a number of factors that helped those projects succeed. Mitra and Gilbert (2014) and Greenberg et al. (2013) suggested that funding goal, project duration, project category, exclusive rewards, presence of video, being featured on the platform, and social media connections were the factors associated with success. Moreover, Mitra and Gilbert (2014) Kuppuswamy and Bayus (2015) and Mollick (2014) suggested that project creators should lower their funding goal and shorten the duration of the project in order to improve their chances of succeeding. Furthermore, Xu et al. (2014) stated that posting updates on a regular basis is a very effective way to raise the required funds, as the backers would be more engaged and informed during the campaign. However, our findings suggest that project creators need to be aware of the contribution differences between certain groups of crowdfunding backers. Our findings revealed that returning backers contribute more to crowdfunding projects than new backers. Returning backers contribute more because, unlike new backers, they are already registered on the platform and know how to use the crowdfunding system. Therefore, this research suggests that project creators should target potential returning backers and gain their support, which should be sufficient—in addition to the other success factors stated in previous studies—to help projects raise the funds they need, compared to projects predominantly targeting new backers.
5.5 Contribution

The primary aim of this research is to examine users’ motivations for funding in association with the funding amount. Previous studies have only revealed why users pledge money to crowdfunding projects (motivations such as rewards, support, social good etc...), but only one study has examined the association between some motivations and the funding amount pledged as covered in Section 5.3.

Project success rate improves once project creators start targeting the right audience. The contribution made in this research helps project creators with targeting the kind of user-base that is most beneficial for them in order to succeed and raise the funds they need. Unlike targeting users randomly, where project creators would struggle as well as waste time and resources securing the funds needed to pursue their projects.

Individuals, groups or organisations seeking funding using a crowdfunding platform like Kickstarter, should be aware of the differences in motivations as well as the funding amount pledged. Our findings suggest that crowdfunding platforms are social platforms, in which most users are willing to pledge a higher funding amount based on social motives such as strengthen connections, interacting with others and be part of a community. A crowdfunding campaign designed on these social elements are likely to get funded. Each age group examined in this research has shown that users pledge high/low funding amount based on different motives explained in table 19 below.

Table 19 Examining Users Age Groups

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Motivation for Funding</th>
<th>Funding Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 – 24</td>
<td>Creative Project</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Emotional Attraction</td>
<td>Low</td>
</tr>
<tr>
<td>24 – 34</td>
<td>Reward</td>
<td>High</td>
</tr>
<tr>
<td>35 – 44</td>
<td>Strengthen Connections</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Curiosity About Crowdfunding</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Altruism</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Creative Project</td>
<td>High</td>
</tr>
<tr>
<td>45 – 54</td>
<td>Strengthen Connections</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Creative Project</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Altruism</td>
<td>Low</td>
</tr>
</tbody>
</table>
Designing a project that users find creative as well as initiate an emotional attraction could lead users of the age group 18 – 24 to pledge a low funding amount, which means that these projects are unlikely to achieve their funding goal. But users of age group 45 – 54 react differently to this, as our findings suggest that they pledge a high funding amount to projects they find creative, and targeting this age group while offering them a creative project increases the chance of getting funded.

Finally, in order to improve the success rate of a crowdfunding campaign, project creators are likely to get funded by reaching out users who previously funded projects on the platform, rather than focusing on bringing new users who have never used the platform before. While according to Kickstarter, there are two kinds of backers (new backers and returning backers). The contribution of returning backers deemed to be the most beneficial for project creators to achieve their funding goal. Project creators need to determine which group of users are most beneficial to them when preparing their crowdfunding campaign, and these key findings are essential in order to improve the likelihood of projects getting funded.

5.6 Conclusion
This chapter has discussed the main findings of this research and made interpretations alongside the relevant literature, including the motivations for funding, the association with the funding amount, and the success factors.

We conclude that our findings suggest that motivation is a complex subject to study and that it differs greatly among participants. The key motivations for funding vary among crowdfunding backers and the associations between those motivations and the funding amount vary significantly as well. Our findings presented both statistically-significant
strong positive and negative associations. There are also non-significant associations, meaning that backers pledged neither a high nor low amount based on their motivation for funding. These findings should contribute to the existing body of knowledge in order to help improve the design and implementation of future crowdfunding systems, as well as helping project creators raise the funds they need to pursue their projects.
CHAPTER 6: CONCLUSIONS AND FUTURE WORK

6.1 Conclusions

To summarise and conclude, the economic value of crowdfunding goes far beyond the finances involved in the initial funding bid. Successfully crowdfunded projects create new jobs (Ramos and Gonzalez, 2016) and lead to sustainable sources of revenue (Mollick and Kuppuswamy, 2014). Furthermore, the positive implications of crowdfunding are set to evolve, and as researchers’ collaboration on this particular topic continues to develop, crowdfunding systems should also continue improve as mechanisms to raise funds and promote innovation.

Moreover, users’ motivations for participating in crowdfunding vary among the types of crowdfunding systems, even between users on the same type of crowdfunding system (Gerber et al., 2012; Belleflamme et al., 2014; Mitra and Gilbert, 2014; Gerber and Hui, 2013; Muller et al., 2013; Gierczak et al., 2016; Bretschneider et al., 2014; Ordanini et al., 2011; Haas et al., 2014). For instance, the top motive for funding projects on reward-based platforms is to “seek reward”, but some users also reported that their decision to fund was mainly based on knowing the project creators (relatives or friends), and/or because they are local projects (Guerzoni et al., 2016).

However, this report reveals a number of interesting findings about crowdfunding platforms (particularly Kickstarter). In summary, the data reveals that successful projects on Kickstarter do not necessarily have to strive in order to succeed, as 97% of successful projects are overfunded, on average achieving 515% of their funding goal. According to Kuppuswamy and Bayus (2015), overfunding a project puts strain on business start-up’s, suggesting that they do not have sufficient capabilities and resources to serve such a large customer-base. Therefore, Kuppuswamy and Bayus (2015) recommended that overfunding a project by new backers should be restricted by placing some limits on overfunding, meaning that new business start-ups do not have to deal with a lot more orders than expected. For example, Pebble (the most successful Kickstarter project) experienced a very large delay in delivering the products to their 69,000 backers because it was so overfunded (Kickstarter, 2012). Although, digital incentives could be an exception, as overfunding these kinds of projects does not present the same obstacles to efficient supply when compared to physical incentives. Furthermore, restricting overfunding will also potentially enable
funds to be distributed on a larger scale, which should help other projects raise the money they need.

The data collected also revealed a number of interesting findings regarding backers’ motivations to fund projects, with a total of 18 different motives being identified. Unsurprisingly, based on the analysis of qualitative data, the top motive is the seeking of a reward, followed by “supporting creators and causes”, “being part of something”, “something creative”, and “social good”. For the complete list of motives identified, refer to Figure 21 in Section 4.4.3. By performing a cluster analysis on backers’ motives, they were subsequently divided into 6 main groups (Figure 22 in Section 4.4.4).

Furthermore, the findings revealed that some backers tend to promote the projects they are backing in order to help the project succeed and for them to get their rewards. Another interesting finding is that it is common for backers to show an enthusiastic intention to back more projects, displaying a high level of commitment to crowdfunding.

6.2 Summary of Results

6.2.1 Male backers pledge more money than female backers

Our findings suggest that male backers pledge more money to crowdfunding projects than female backers. The data analysis shows that the funding amount means of both males and females were statistically significantly different ($p < .001$). The mean of the funding amount pledged by males ($M = 3.31$) is higher than females ($M = 2.57$).

6.2.2 The funding amount varies among backers’ age groups

Our findings suggest that the funding amount pledged by backers varies among age groups. The data analysis shows that the means of the funding amount pledged by backers were statistically significantly different ($p < .001$) for the different age groups: 18–24 ($M = 2.58$), 25–34 ($M = 2.94$), 35–44 ($M = 3.11$), 45–54 ($M = 2.5$), 55–64 ($M = 2.36$), 65–74 ($M = 2.97$), and 75 and older ($M = 3.9$).

6.2.3 The contribution of returning backers is critical for the success of crowdfunding projects

Our findings suggest that the contribution of returning backers increases the chances of success on Kickstarter. The data analysis shows that there was a statistically significant difference in the contribution of Kickstarter backers on the outcome of projects:
Wilk’s $\Lambda = .990$, $F(2, 2624) = 13.22$, $p = .001$, partial $\eta^2 = .01$. New backers ($p = .002$) ($M = 119.608$), and returning backers ($p = .001$) ($M = 252.266$).

6.2.4 Strong associations between the motivations for funding

Factor analysis was applied using a variety of extraction and rotation methods. Our findings suggest that, based on Principal Axis Factoring (direct oblimin), the users’ motivations for funding formed 3 components that contain only 13 motivations (3 motivations were excluded for cross-loading). This suggests that there was a statistically-significant strong association ($p < .001$) between the users’ motivations for funding.

6.2.5 Backers pledge a higher funding amount based on certain motivations

Our findings suggest that there was a statistically-significant positive correlation between the funding amount and “strengthen connections” ($r_s = .596$, $p < .009$), “curiosity about crowdfunding” ($r_s = .48$, $p < .04$), and “altruism” ($r_s = .492$, $p < .03$) found in backers’ age group 33–44. Moreover, there was a statistically-significant positive correlation between the funding amount and “be part of a community” ($r_s = .34$, $p < .04$), “strengthen connections” ($r_s = .323$, $p < .05$), and “interested in interacting with others” ($r_s = .352$, $p < .03$) in backers’ age group 55–64, and “seek rewards” ($r_s = .429$, $p < .002$) in backers’ age group 75 and older.

6.2.6 Backers pledge a lower funding amount based on certain motivations

Our findings suggest that there was a statistically-significant negative correlation between the funding amount and “project is creative” ($r_s = .359$, $p < .04$), and “emotional attraction” ($r_s = .43$, $p < .01$) in backers’ age group 18–24. Moreover, there was a statistically-significant negative correlation between the funding amount and “altruism” ($r_s = .9$, $p < .03$) in backers’ age group 45–54. And “interested in interaction with others” ($r_s = .298$, $p < .03$) in backers’ age group 75 and older.

However, our findings suggest that there were trending associations between the funding amount and several motivations presented in Section 4.7.4.

6.3 Contribution and Impact

The aim of this research was to contribute to the body of knowledge concerning crowdfunding by providing useful insights into the relation between users’ motivations for funding and the amount they pledge. Previous studies have only focused on the user motivations for funding (Gerber et al., 2012; Belleflamme et al., 2014; Mitra and Gilbert,
but how these motivations determine the funding amount has only been covered by one previous study (Bretschneider and Leimeister, 2017). Moreover, previous studies concluded that more research on users’ motivations for funding was needed in order to improve the design of crowdfunding systems.

This research has made a contribution by providing useful insights into how the users’ motivations determine the funding amount. The motivations with age groups and the funding amount analyses come useful when project creators target their audience. Since the success of crowdfunding projects depends on the amount of money pledged to achieve the funding goal, these findings presented in this research help project creators to target their audience more effectively, and thus raise the funds they need. The findings presented tell project creators who (gender and age group) pledge high/low funding amount based on what motivations (e.g. reward, support, social good), refer to Table 19 in Section 5.5. This should connect project creators with the right funding group. It is evident that users pledge a higher or lower funding amount to crowdfunding projects based on their motivations for funding. Our findings suggest that there are trending associations that are nearly statistically significant (both positive and negative) and can potentially lead to statistically significant associations in the future. Moreover, there are several motivations that show neither statistically-significant positive or negative associations with the funding amount.

Our findings suggest that users are predominantly funding crowdfunding projects in order to build connections and interact with others, which explains the positive associations between these motives and the funding amount. In contrast, previous studies have indicated that the seeking of rewards is the top motive for funding crowdfunding projects (Gerber et al., 2012; Ordanini et al., 2011; Buysere et al., 2012; Hemer et al., 2014; Guerzoni et al., 2016), but our findings suggest that there is only one statistically-significant positive association between that and the funding amount, and that was in the backers’ age group 75 and older. Instead, building connections and interacting with others are more important motives, with both showing more significant associations than the reward across several backers’ age groups.
Finally, we found that returning backers on Kickstarter are more critical for the success of projects than new backers. This suggests that project creators need to promote their projects within the established user-base of Kickstarter in order to increase their chances of success.

6.4 The Limitations

6.4.1 Sample Source

A snowball sampling approach was taken in order to gather the samples for this research, which has previously proven useful in the study of online communities. Participants in the online survey came from two main sources: either mTurk or online communities such as Reddit and Kickstarterforum, where users of Kickstarter share useful information.

One of the limitations of this research was that the sample source, with over 1,800 participants to the online survey, had only 269 responses which were acceptable; 886 were disqualified for not funding any crowdfunding project and 758 were incomplete responses. The data gathering could have been improved if it was conducted directly on the crowdfunding platform to avoid losing so much valuable data. Taking into account the fact that the topic is rather unique, an mTurk sample would work very well for certain generic areas, such as giving an opinion about a product. Accordingly, this leads us to another limitation to be addressed regarding the sample size.

6.4.2 Sample Size

The sample size of this research is relatively small. Having gathered only 269 qualified responses, we believe that a larger sample size would have improved the data analysis. The population size is estimated around 15 million users, a sample size of 385 is needed to achieve 95% confidence level as well as 5% margin of errors according to the power calculation made. Addressing this issue would potentially help in finding more significant associations between the motivations for funding and the funding amount, and would establish more associations between the motivations for funding. This could lead to providing more useful insights and drawing more comprehensive conclusions.

6.5 Future Work

According to the research limitations addressed above, we suggest that future studies on crowdfunding should target the participants on crowdfunding platforms directly. Reaching the users via their profiles on the crowdfunding platform would ensure that the data gathering would be more valid and reliable.
However, besides refinements in data collection, we also identified two areas suitable for future research:

6.5.1 Do successful projects continue operating as a business after raising the funds? According to the data gathered in this research, some projects do show that they are operating even after delivering the rewards to their backers. The study conducted by Mollick and Kuppuswamy in 2014 suggested that 90% of successful crowdfunding projects continued to generate a sustainable annual revenue, but with the rise of crowdfunding, it is unclear whether this rate remains accurate. Further research is needed to provide useful insights into whether such a high percentage of successful crowdfunding projects still continue to operate after raising the necessary funds. This is also essential to better understanding crowdfunding’s impact on the wider economy.

6.5.2 Anti-fraud mechanisms to support crowdfunding systems

There are many reported cases of fraudulent crowdfunding projects that successfully raised funds but then deliberately failed to deliver any rewards. In order to improve the design of crowdfunding systems in future, effective anti-fraud mechanisms need to be researched and developed in order to protect crowdfunding backers, ensuring that project creators are reliable and only use the funds raised for their stated project purposes. This would also potentially help to improve the overall perception of crowdfunding, helping it become even more widespread and consequently increasing its associated benefits in promoting innovation, job creation and economic growth in general.
References


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idea that they allow such projects. While reading the pros and cons for people who back Kickstarters, I experienced that indiegogo & amp; campaigns are fully funded, while 42% of people had to use indiegogo. I think old you recommended for me? indiegogo/ /I wanted to promote our project through a few tweets. There is also a massive crowd from UK and just started a project via this subject, the first time we have used works well for us, organized feel, so I like thanks for the info. It seems think of gofundme? I quite
"title="Smile" class="inlineimg"/>
1. Peace & amp; God Bless, ade the mistake of canceling p it clean. When I launched put my buddy swears by indiegogo. Since ever backed only done f my current campaign last failed Amazon Payment Verification on approve me after 2 months... Yo approved me today after a 3 week are prohibited from offering mult at first, but got rejected... That's based on a few people that were campaign to self - publish my fin can get your project seen by more certainly has a larger audience, l community, more groups, more comparisons aside, I think that t could not match my hardware at crowd seems more interested and definitely has the reputation, but due to me living in Belgi regulations and re either. I put up a description; sh first. It's tough, and I do have so for our project sure. I had trouble it frw for me anyway. Although I gets more international now. I w getting a lot more attention, I op big platform a bigger > more org
backed
<table>
<thead>
<tr>
<th>Respondent</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>A25</td>
<td>I have backed 7 projects. The reason for my backings were creations I liked and wanted, and creators with a clear vision and good presentation.</td>
</tr>
<tr>
<td>A30</td>
<td>I've backed 30 projects so far of all different types. I usually back projects that I'd like to use myself but I find that giving rewards as gifts is fun. Most people haven't seen or heard of the items and they are usually unique. I don't always back for rewards though, sometimes I just like participating in the community and want to see progress of updates and if I want to comment.</td>
</tr>
<tr>
<td>A32</td>
<td>I have only backed 1 project so far. I love fun campaigns that make me laugh.</td>
</tr>
<tr>
<td>A60</td>
<td>I backed 4 projects so far because I like the project and the creator's style.</td>
</tr>
<tr>
<td>A70</td>
<td>I've backed several projects now and all were art or music related. I think crowdfunding is a great way to give power to artists and creators and give them a chance to get their artist endeavour out to the world.</td>
</tr>
<tr>
<td>A74</td>
<td>I've backed 47 projects, but a couple were reboots. Generally I back game projects that I am interested in.</td>
</tr>
<tr>
<td>A95</td>
<td>I like community orientated projects - so I can see the results happen.</td>
</tr>
<tr>
<td>A96</td>
<td>I have backed 5 projects and have found the 6th project I am going to back. I enjoy helping people out and finding new products that should be available for everyone.</td>
</tr>
<tr>
<td>A111</td>
<td>1. We backed 2 projects so far. 2. The quality of the product looked great! and we wanted to support small makers that devote a lot of passion to their work.</td>
</tr>
<tr>
<td>A121</td>
<td>I have backed 15 projects, mostly when I feel that this is something that I have never seen before and that solves a problem in my life or that could potentially give a boost to my life. Mostly tech stuff but sometimes other stuff to.</td>
</tr>
</tbody>
</table>
PCA: Varimax and Direct Oblimin (16 items)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Extraction Method</th>
<th>PCA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rotation Method</td>
<td>Varimax</td>
</tr>
<tr>
<td></td>
<td>Factors</td>
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</tr>
<tr>
<td>Seek rewards</td>
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<td>.007</td>
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<tr>
<td>Support creators and causes</td>
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<tr>
<td>Strengthen connections</td>
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<tr>
<td>Be part of a community</td>
<td>.718</td>
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</tr>
<tr>
<td>You know the person who created the project</td>
<td>.367</td>
<td>.523</td>
</tr>
<tr>
<td>Because it's a local project</td>
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</tr>
<tr>
<td>Curiosity about crowdfunding</td>
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<tr>
<td>Altruism</td>
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<tr>
<td>Reciprocity</td>
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<tr>
<td>Project is creative/innovative</td>
<td>.090</td>
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<tr>
<td>Interested in interacting with others</td>
<td>.745</td>
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<td>Get familiar with the company or the product</td>
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<td>Interested in the financial result</td>
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<td>Fun</td>
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<td>Emotionally attracted to the project</td>
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<td>Generosity</td>
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Indicates correlated item
Indicates crossloading
PCA: Varimax and Direct Oblimin (13 items)

<table>
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<td>Extraction Method</td>
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<td>Rotation Method</td>
<td>Direct Oblimin</td>
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<tr>
<td>Seek rewards</td>
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<tr>
<td>Support creators and causes</td>
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<tr>
<td>Be part of a community</td>
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</tr>
<tr>
<td>You know the person who created the project</td>
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</tr>
<tr>
<td>Because it’s a local project</td>
<td></td>
</tr>
<tr>
<td>Altruism</td>
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</tr>
<tr>
<td>Reciprocity</td>
<td></td>
</tr>
<tr>
<td>Project is creative/innovative</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Interested in the financial result</td>
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</tr>
<tr>
<td>Fun</td>
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</tr>
<tr>
<td>Generosity</td>
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<th>3</th>
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<td>.783</td>
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<td>-.372</td>
<td>.818</td>
<td>.100</td>
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<tr>
<td>Support creators and causes</td>
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<td>-.160</td>
<td>.642</td>
<td>.321</td>
<td>-.238</td>
<td>.628</td>
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<tr>
<td>Strengthen connections</td>
<td>.751</td>
<td>.296</td>
<td>.110</td>
<td>.746</td>
<td>.211</td>
<td>.041</td>
</tr>
<tr>
<td>Be part of a community</td>
<td>.659</td>
<td>.393</td>
<td>.105</td>
<td>.648</td>
<td>.319</td>
<td>.041</td>
</tr>
<tr>
<td>You know the person who created the project</td>
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<td>-.051</td>
<td>-.003</td>
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<td>-.121</td>
<td>-.053</td>
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<tr>
<td>Because it’s a local project</td>
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<td>Reciprocity</td>
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<td>.040</td>
<td>.211</td>
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<td>-.001</td>
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<td>Project is creative/innovative</td>
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<td>.294</td>
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<td>Interested in the financial result</td>
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<tr>
<td>Fun</td>
<td>.099</td>
<td>.282</td>
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<td>.673</td>
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<td>Generosity</td>
<td>.665</td>
<td>-.024</td>
<td>.198</td>
<td>.662</td>
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</tbody>
</table>

* Indicates correlated item
* Indicates crossloading
### ML: Varimax and Direct Oblimin (16 items)

<table>
<thead>
<tr>
<th>Extraction Method</th>
<th>ML</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotation Method</td>
<td>Varimax</td>
</tr>
<tr>
<td>Factors</td>
<td>1</td>
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<td>Seek rewards</td>
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<td>Strengthen connections</td>
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<td>Be part of a community</td>
<td>.619</td>
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<td>You know the person who created the project</td>
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<td>Because it's a local project</td>
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<td>Curiosity about crowdfunding</td>
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<td>Altruism</td>
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<td>Reciprocity</td>
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<td>Project is creative/innovative</td>
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<td>Interested in interacting with others</td>
<td>.686</td>
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<tr>
<td>Get familiar with the company or the product</td>
<td>.300</td>
</tr>
<tr>
<td>Interested in the financial result</td>
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<tr>
<td>Fun</td>
<td>.237</td>
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<tr>
<td>Emotionally attracted to the project</td>
<td>.101</td>
</tr>
<tr>
<td>Generosity</td>
<td>.158</td>
</tr>
</tbody>
</table>

*Indicates correlated item  Indicates crossloading*
Consent Form Ethics Reference: 23699

You are invited to participate in a web-based online survey examining the user motivations for funding in crowdfunding. This is a research project being conducted by Bader Almeer, a PhD Candidate at the University of Southampton. It should take approximately 10 minutes to complete.

PARTICIPATION
Your participation in this survey is voluntary. You may refuse to take part in the research or exit the survey at any time without penalty. You are free to decline to answer any particular question you do not wish to answer for any reason.

BENEFITS
You will receive no direct benefits (or up to $0.25 if sufficient number of participants is not reached) from participating in this research study. However, your responses may help us learn more about the motivations of funders and the amount they pledge, based on their motives.

RISKS
There are no foreseeable risks involved in participating in this study other than those encountered in day-to-day life.

CONFIDENTIALITY
Your survey answers will be sent to a link at isurvey.soton.ac.uk (or similar) where data will be stored in a password protected electronic format. The survey platform does not collect identifying information such as your name, email address, or IP address. Therefore, your responses will remain anonymous. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study.

CONTACT
If you have questions at any time about the study or the procedures, you may contact the researcher at bsa1e12@soton.ac.uk.

If you feel you have not been treated according to the descriptions in this form, or that your rights as a participant in research have not been honored during the course of this project, or you have any questions, concerns, or complaints that you wish to address to someone other than the investigator, you may contact the Research Governance Manager (02380 595058, rgoinfo@soton.ac.uk).

ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this consent form for your records. Clicking on the “Agree” button indicates that

- You have read the above information
- You voluntarily agree to participate
- You are 18 years of age or older

☐ Agree ☐ Disagree
1) Have you ever funded a crowdfunding project?*

( ) Yes
( ) No
If no, participants disqualify from the survey.

2) Which crowdfunding platforms have you contributed to? (please select all that applies)*

( ) Kickstarter
( ) IndieGoGo
( ) RocketHub
( ) CrowdCube
( ) FundedByMe
( ) Other - Write In (Required): ________________________________ *

3) What is your gender?*

( ) Male
( ) Female
( ) Other - Write In: ________________________________
( ) Prefer not to answer

4) What is your age?

( ) 17 or younger
( ) 18 to 24
( ) 25 to 34
( ) 35 to 44
( ) 45 to 54
( ) 55 to 64
( ) 65 to 74
( ) 75 or older

5) What is your highest level of education?*

( ) Less than high school
( ) Graduated high school
( ) Trade/technical school
6) What is your country?*
List of countries e.g. United Kingdom, United States of America, Brazil

7) How many crowdfunding projects have you contributed to?*
( ) 1 - 4
( ) 5 - 9
( ) 10 - 14
( ) 15 - 19
( ) 20 or over

8) What category of projects do you contribute to? (Check all that applies)*
[ ] Art
[ ] Comics
[ ] Crafts
[ ] Dance
[ ] Design
[ ] Fashion
[ ] Film & Video
[ ] Food
[ ] Games
[ ] Journalism
[ ] Music
[ ] Photography
[ ] Technology
[ ] Theater

9) How much money have you donated to crowdfunding projects? *
( ) $1 - $25
( ) $26 - $50
( ) $51 - $75
10) How do you decide which projects to fund? (e.g. John only funds projects referred by friends/relatives)*

____________________________________________
____________________________________________
____________________________________________
____________________________________________

11) What information do you look for when deciding to fund a project? (e.g. Rewards/Case/Story)*

____________________________________________
____________________________________________
____________________________________________
____________________________________________
12) Respond to the following items as they pertain to your recent contributions to crowdfunded projects. Rate each statement on a scale of 1-5, where 1 indicates “Not at all like me” and 5 indicates “Very much like me”*

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential gains from a project are an important consideration for me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I always ask “What’s in this for me?”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like supporting good products and their creators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I focus most on quality products when I contribute</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I love feeling like I am a part of a community</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take on projects that will yield financial gains</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I contribute to projects that serve the social good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I donate to projects that meet a personal need</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I donate to projects for the sake of participating in a good cause</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like to get financial returns from my project investments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like contributing to ideas that are unique and novel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like to get in on the ground floor of an idea or product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I always wait to see proof of potential before investing in a project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social justice is highly important to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like supporting projects from people who live near me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I make decisions based on my emotions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I invest in projects that seem like a lot of fun</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I invest based on how a project makes me feel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel like I'm part of a winning team when my project does well</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like to be able to use the final product of a project when I invest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I invest in local projects more often than those taking place far away from me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel socially connected to others who invest in the project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13) Which of the following statements do not apply to you? (check all that do not apply) *

[ ] I would describe my recent contributions as motivated by altruism

[ ] I am drawn to new things and ideas

[ ] I aim to make money with my contributions to projects

[ ] I promote the good of others over myself

[ ] I enjoy picking projects and watching them succeed

14) For the most recent project in which you contributed to, answer the following:*  

Project Name: __________________________________________________________

Project Category

( ) Art

( ) Comics

( ) Crafts

( ) Dance

( ) Design
( ) Fashion
( ) Film & Video
( ) Food
( ) Games
( ) Journalism
( ) Music
( ) Photography
( ) Publishing
( ) Technology
( ) Theater

Amount Donated: ___________________________________________________

Project Link: ___________________________________________________

Reason for Funding

[ ] Reward
[ ] Support Creators and Causes
[ ] Strengthen Connections
[ ] Be Part of a Community
[ ] You know the person who created the project
[ ] Because it’s a local project
[ ] Curiosity about crowdfunding
[ ] Altruism
[ ] Reciprocity
[ ] Project is creative/innovative
[ ] Interested in interacting with others
[ ] Get familiar with the company or the product
[ ] Interested in the financial result
[ ] Fun
[ ] Empathy/Emotion
[ ] Generosity
[ ] Project is interesting

[ ] Other - Write In (Required): _________________________________ *