AMERICAN UNIVERSITY OF BEIRUT

CROWDFUNDING IN THE MIDDLE EAST AND NORTH AFRICA REGION: A CASE STUDY OF ZOOMAAL

by
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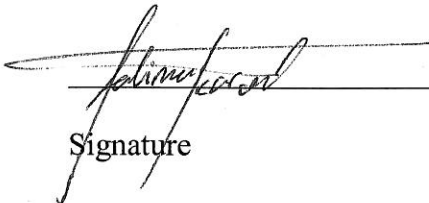
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AN ABSTRACT OF THE THESIS OF

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Title: <u>Crowdfunding in the Middle East and North Africa Region: A Case Study of</u>
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Crowdfunding provides entrepreneurs with a mean to raise the necessary funds to develop a certain idea or initiative, by tapping into the funds of the audience available online and bypassing the conventional financial mediators. Based on data provided by a reward, non-monetary-based crowdfunding platform based in MENA, "Zoomaal", that covers projects from 2013 to 2016 with more than 1300 successful and unsuccessful projects, nearly 6700 backers and approximately 1.5 US million dollars of funding in total, this paper offers a description of the underlying dynamics of success and failure for crowdfunded projects. It suggests that both the choice of target goal and duration are of relevance to the success outcome. Further, location and category of projects are related to successful funding outcome and project backers' behavior. These results provide insight into the emerging phenomenon of crowdfunding in the Middle East and North Africa (MENA) region. The findings of this paper shed light on the factors that may influence the capacity to get entrepreneurial financing via crowdfunding and are of interest for project creators and crowdfunding platforms.

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CHAPTER I

INTRODUCTION

The lack of access to credit and financial services has been argued to be strongly related to impeding economic growth and poverty alleviation (Imboden, 2005). In response to those financial needs, since the late 1970s, microfinance has played a role in expanding financial access for projects that do not qualify for the standard bank loans (Bateman, 2010). In 2008, the financial crisis resulted in a credit crunch and limited access to capital for new ventures and investments (Diamond and Rajan, 2009). This limitation lead to the emergence of new financing instruments outside the conventional financial channels from crowdfunding to social impact bonds and substitute currencies such as Bitcoin (Wardrop et al., 2015).

In this context, crowdfunding emerged as a new innovative method allowing entrepreneurs to raise the necessary financing to develop a certain idea or initiative by tapping the audience available online. As in any emerging field, the evolving state of crowdfunding does not provide a clear-cut definition (Valenciene and Jegeleviciute, 2013). To begin with, the crowdfunding concept falls under a parent term known as "crowdsourcing". Jeff Howe and Mark Robinson first introduced the term "crowdsourcing", in a Wired Magazine article in June 2006, as a mean of obtaining information or contribution into a project by procuring the services or ideas of the crowd (Howe, 2008). Crowdsourcing is considered a promising technique for firms' professionals to accumulate user ideas, that can complement their own ideas into developing a new product (Poetz and Schreier, 2012). Another definition of crowdsourcing provided by Kleemann et al. (2008) is the involvement of consumers or

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users in a process of value creation of a firm in which specific tasks are outsourced from the crowd for the making or sale of a firms' product.

Put into context, crowdfunding relies upon the definition of crowdsourcing, in which it utilizes the crowd but focuses on the ability to engage the collective group online to accumulate capital required to fund variety of projects. The term "crowdfunding" was first used by Michael Sullivan in 2006 (Gobble, 2012). This terminology is based on the power of the crowd in the mobilization of financing resources (Lehner, 2016). Around 2008, with the economic crisis and lack of access to funds, the concept of crowdfunding spread across USA and Europe (Candelise, 2015). Although the crowdfunding phenomenon is relatively new, the concept of raising money through the public have been adopted in different ways in the past, namely in the practices of charity and microfinance. For instance, the funding activities in early Jewish charities (Mullin, 1995) and the Irish Loan Fund, a microfinance initiative established in the early 1700s in Ireland (Hollis et al., 2004) are examples of previous funding activities. However, a feature that distinguishes crowdfunding is the utilization of the web and the online dedicated platforms to raise capital from the crowd. These platforms cater to several types of crowdfunding: donations-based, rewards-based, peer-to-peer lending and equity-based models. In return for their contribution, the crowd would receive a tangible or intangible, monetary or a non-monetary reward depending on the type of crowdfunding (Mollick, 2014; Schwienbacher & Larralde, 2010). Accordingly, crowdfunding ventures can vary significantly in structure and scale. Globally, the crowdfunding market grew by 167% in 2014 and platforms raised around $34 billion in 2015 with $5.5 billion in reward, non-monetary-based crowdfunding

(Mass Solution, 2015). With this growing market, there has been regulatory action on the part of the governments in the United States and European Union to legalize crowdfunding activities. In 2012, President Obama signed the Jumpstart Our Business Startups (JOBS) Act in an effort to regulate equity crowdfunding and enable the expansion of small ventures (Agrawal et al., 2014). Similar regulations have been passed in France, the UK and Italy (Joint Research Center, 2015).

Entrepreneurship (re)emerged as new research field in economic theory since the late 20th century (Rocha, 2012). The role of the entrepreneurship in a firm setting has been studied in relation to the fields of Labor Economics, Industrial Organization and Economic Growth and Development (Rocha, 2012). However, despite the massive funds collected through crowdfunding and the enactment of pertinent regulations, the literature on the entrepreneurial activity of crowdfunding is very minimal. It is unclear how crowdfunding may affect the dynamics of new pursuits looking for financing. There is insufficient academic understanding of the optimal crowdfunding scheme for success in relation to goal, duration, reward plans, and crowd dynamics.

From a regional perspective, this emerging entrepreneurial activity has been understudied in the Middle East and North Africa (MENA) region. This research aims to provide a modest insight into crowdfunding activities in the MENA region by taking after exploratory studies for new entrepreneurial trends (e.g. Mollick, 2014). In this study, we focus on the reward-based crowdfunding model provided by "Zoomaal".

Since 2013, Zoomaal has been the leading reward-based crowdfunding platform in the MENA region. This paper investigates the determinants of successful

crowdfunding and analyzes the pattern of the project backers for successfully funded projects on Zoomaal.

Chapter II provides an overview of crowdfunding - including the several types of crowdfunding and their corresponding platforms, and lays out theories within economics and entrepreneurial finance extended into the context of crowdfunding. Chapter III introduces the main hypothesis that guide the rest of the paper. Chapter IV provides a description of the crowdfunding data used through an exploratory analysis. Chapter V discusses the empirical results and gives an assessment of the main findings.

CHAPTER II

LITERATURE

This section provides an overview on the concept of crowdfunding. First, the reader is presented with the definition of crowdfunding. Second, we examine the roles of the various participants in crowdfunding in relation to the different types of crowdfunding. Third, the paper introduces the main MENA-based crowdfunding platforms. Lastly, we provide a theoretical background according to relevant literature.

A. The Definition of Crowdfunding

The literature provides different definitions of crowdfunding (Valenciene and Jegeleviciute, 2013). Crowdfunding as defined by (Schwienbacher and Larralde, 2010) is "an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes". Disregarding philanthropy-based models, Mollick (2014) defines crowdfunding as "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." Yet, even this definition fails to encompass the peer-to-peer lending crowdfunding model in which a contribution is rewarded with interest alongside the initial contribution if the project is successfully funded (Kumar 2007).

According to Ramsey (2012), crowdfunding is a process to help transforming ideas with commercial potential by connecting investors with possible supporters. Whereas, (Lynn and Sabbagh, 2012) view it as a new extension of social media that

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offers a new source of financing for businesses. Bechter, et al. (2011) describes it as an approach to raising capital for a project by using many people for small $1 to $100 contributions.

In simple terms, crowdfunding, for the purpose of this paper, is a tool by which entrepreneurial individuals collect financial resources from the large online audience without having to seek out the standard sources of project investment (Mollick, 2014; Schwienbacher & Larralde, 2010).

B. The Stakeholders in Crowdfunding

Following the definition above, it is important to define the stakeholders involved in the crowdfunding process and their respective roles and goals. There are three parties introduced below: the creators, the crowd, and the platforms.

1. Creators

Creators are the individuals that initiate a crowdfunding campaign for a specific project or venture. The professional backgrounds and experience of the creators can vary significantly from prior pre-established teams to individual campaigners with zero experience. The role of the creators is to envision a project or product and effectively translate their ideas and promote them to the crowd; by doing so, they control the information available to the public (Beaulieu et al., 2015).

Even though unfulfilled capital drives crowdfunding, not all campaigners have the same goal. Campaigns can have a variety of goals, whether it is a for-profit motive for a venture or a non-profit charity event. Agrawal et al. (2014) and Belleflamme et al. (2014) identify the main motivations for entrepreneurs is first, lower incurred costs opposite to traditional channels and second, more access to information. The latter

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reason is fulfilled through the feedback and response of the crowd towards a specific

project or product (Agrawal et al., 2014). Per se, entrepreneurs may use crowdfunding

for market legitimization through tracing the demand for a certain product. Furthermore,

creators may apply price discrimination mechanisms in a reward crowdfunding model

selling the same product a different price points before supplying the general market

(Kumar et al., 2016).

2. Crowd

The crowd are individuals that back projects through pledging a certain amount

of money. The background of backers varies significantly from accredited investors on

equity platforms to small-scale backers on donation platforms. In relation to creator's

goals, the role of the backer does not constitute solely providing the capital; they are

potential consumers through which the campaign creator can gain further insight about

the demand and the market available for their product or business. The crowd plays a

major role in complementing the marketing scheme of the creator as they spread the

word through social media platforms.

An analogous variation of backers' demographics is found with backers' goals

for participating in the crowdfunding process. Social reputation and intrinsic motives

are reasons that drive the act of backing a project. Some backers pledge money to gain

access to new products or investments, whereas, others support projects to obtain self-

affirmation, perform altruistic behavior or merely to be part of the community of

backers (Agrawal et al., 2014).

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3. *Platforms*

Crowdfunding platforms are intermediary players that are in the center of the crowdfunding process. These platforms facilitate communication and enforce the rules regarding payments, product distribution and privacy arrangements between the entrepreneur and the backer. They create and control the process in order to ensure the execution of efficient transactions between the two parties (Beaulieu et al., 2015).

The platforms are principally revenue driven businesses that charge the successful projects based on pre-defined transaction and processing fees. Intrinsically, platforms aim to maximize the number and size of successfully funded projects. These platforms consistently work at to "attract high-quality projects, reduce fraud, and establish efficient matching between projects and capital" (Agrawal et al., 2014).

There are different types of crowdfunding – namely: donations-based, rewards-based, peer-to-peer lending and equity-based models. Those platforms can be generally classified into two main categories: investment-based and reward/donation-based crowdfunding. The first category includes equity-based and lending-based crowdfunding platforms in which funders are investors in the project and will earn financial proceeds. Whereas in the latter category, funders do not receive any financial return. In this case, funders might receive a pre-defined reward or they merely fund to support a cause.

In equity-based models, venture opportunities are available to online funders who are potential investors online and would have access to the risk of the investment to decide whether to undergo an investment or not. As for lending-based platforms, entrepreneurs and lenders bypass the traditional banking lending mechanism in which a

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pre-defined interest rate is offered to funders on successful projects. Hof (2006) refers to it as the "eBay of loans". In this model, the funder is responsible for screening the different projects and deciding for themselves on one to fund and bid for it, as opposed to the traditional screening that would have been handled by the bank as a mediator. From the funder's perspective, there exists an uncertainty to whether the final product will pick up momentum on the market with potential consumers.

In contrast to previous models, in reward-based platforms, funders do not seek monetary compensation. The platforms facilitate the mission of campaign creators in drawing in funders who are basically consumers that pre-order the item. From the funder's perspective, there exists an uncertainty to whether the final output will be in line with his/her preferences. Lastly, donation-based models rely on the charitable donations of the funders to support a cause or artistic projects. In these projects, funders are perceived as philanthropists.

C. Crowdfunding Platforms in MENA

Crowdfunding activities in the MENA region encompass the various types of crowdfunding hosted by several platforms.

In 2011, starting in Dubai, Eureeca was launched as the first Arab investing-based crowdfunding platform. The platform focused on small and medium sized enterprises (SMEs) to raise funds from the crowd in return for equity. The participating investors on Eureeca includes countries like Lebanon, Switzerland, Norway and Japan. Later in 2012, Shekra, another crowd-investing platform was launched in Egypt, focusing on Egyptian ventures. In addition to facilitating matching process between projects and investors, Shekra works with entrepreneurs throughout the different phases

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of their startups, from cultivating and pitching an idea, to marketing and promoting on social media, and providing legal consultation. In addition, Shekra follows a closed network of investors policy in which new investors need to be recommended by existing members.

In July 2012, Aflamnah was launched as the first reward-based crowdfunding platform in the Arab region. It is solely dedicated to finance autonomous motion picture productions. Later in 2013, Zoomaal became the first reward-based crowdfunding platform in the Arab region for all projects, not necessarily falling under the movies and art categories.

In 2014, Beehive was launched in 2014 as UAE's first peer to peer lending platform based in Dubai. It offers SME's a lower cost of finance than the traditional channel, and a richer direct access marketplace for investors/lenders. Beehive facilitates connections between investors and the business community in the aim of establishing jointly profitable partnerships. To date, beehive registers loan transactions of 13 US million dollars, in which investors are earning on average a 12% annual percentage rate, and businesses are saving up to 30% of financing costs. Similarly, there is Liwwa, a Jordanian peer to peer lending platform for SMEs. Since its launch in 2013, it has provided more than 4 US million dollars distributed on 141 loans for projects in the Arab region.

Another platform is Yomken, an open innovation and crowdfunding platform that offers social projects both services: first, connecting creators with potential problems solvers; second, a market to raise funds through either in an investment based or donation-based crowdfunding environment.

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D. Theoretical Background

Academics have shown considerable interest in identifying factors leading to successful funding of crowdfunding projects (Mollick, 2014). Generally, the investment decision process, through the traditional channels such as venture capital, adopt a multi-criteria evaluation to identify high quality projects. The decision criterion involves the assessment of the overall probability of a successful venture regarding the entrepreneurial team and the product or the idea proposed (MacMillan et al., 1986). This logic applies to other entrepreneurship activities including crowdfunding for example. Mollick (2014) states that backers/investors participate in a comparative selection process and asserts the importance of identifying the determinants of successful crowdfunding (Mollick, 2014). Additional theories in the economics of entrepreneurship literature relevant in the context of crowdfunding are:

1. Rational and Irrational Crowd Behavior

In the crowdfunding environment, reward-based backers are individual investors rather than will-established firms. Therefore, it is reasonable to study the economic behavior of backers. In the conventional or standard financial economics paradigm, investors are considered fully rational individuals in their decisions seeking to maximize their return while minimizing risk. However, this rationality of the investors' behavior has been critiqued by scholars. Behavioral Economics describes investors as inconsistent and not fully rational (Barberis and Thaler, 2003). The field of behavioral economics investigates the failure of the rationality assumption and suggests alternative theories; for instance, group behavior may be an influential component on an

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individual selection process. This implies that individuals may not follow rational selection criteria.

2. Herding Behavior

Originating from the field of psychology, a standout phenomenon, driven by a common human need to mirror others and mimic their action regardless of one's own information, is defined as herding behavior (Reicher, 2001). This phenomenon has been associated to many economic practices. The literature on herding behavior is driven by informational cascades of individuals when faced with information asymmetry in a decision-making process; for example, they disregard own information and instead rely on inferences from other people's actions – despite possible contradictions to private information (Banerjee, 1992; Bikhchandani et al. 1992). Banerjee's (1992) argument in a financial context is that an investor, when given limited and asymmetric information, focuses on one activity depending on the actions of previous investors; this is known as the herding behavior in the market. Along these lines, the decisions of early funders may influence the choice of later funders resulting in a herding behavior on crowdfunding platforms (Lee and Lee, 2012; Zhang and Liu, 2012; Chen and Lin, 2014). Lee and Lee (2012) find a positive relationship between herding and the funding performance of the funded project utilizing information from a Korean lending-based platform.

Banerjee (1992) builds the model with the assumption that the signal quality of a listing of projects perceived by each investor is the same. On this basis, Banerjee (1992) identifies herding behavior put into a crowdfunding platform setting as follows (Zhang and Liu, 2012):

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- Projects' attributes of preceding funder activity, reward and pledge choice affect future funders, regardless of one's own signal, and thus lead to positive correlation of the funding.

- A funder's return depends on the actions of the preceding funders; as the funder joins the herd, he/she incurs a herd externality.

Burtch (2011) empirically evaluates some implications of Banerjee's model and suggests herding in an e-commerce marketplace and identifies it as a negative social network externality. Further, herding in crowdfunding activities may also prompt market failure based on collective action (Agrawal et al., 2014). It may be the case in which backers do not support projects before others do; resulting in no funding action and a failure of the project despite its high-quality signals.

Based on the literature available (Belleflamme and Lambert, 2014), there is no indication that crowdfunding platforms are concerned with the herding behavior. The problem that platforms should consider is the fact that both creators and backers are on average more satisfied in the absence of a herding effect. The herding behavior would inefficiently drive projects to success or not amidst the market of lemons theory; i.e. lower-quality projects are fortunate to attain attention in the very early stage of funding and be successfully funded (Ibrahim, 2014). Platforms need to consider the information released on projects that would drive the herding behavior. Belleflamme and Lambert (2014) suggest platforms should apply a disclosure rule regarding the total funds raised and to be substituted by a percentage ratio of the funding level solely.

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In this context, further investigation is required to question the optimal recommendation and information mechanism adopted by platforms and account for agents' incentives requires.

3. Asymmetric Information

In every decision-making process, businesses, governments, and individuals rely on the information available to them; this information can be either private or public. Information asymmetry occurs when people involved in the same process have different information and consequently have different knowledge. We distinguish between two types of information asymmetry: information about quality versus information about intent. The asymmetry about quality is when one party involved does not possess full knowledge about the characteristics of the product provided by the other. The second asymmetry is when one party questions the behavior and intentions of the other (Stiglitz, 2000; Stiglitz, 2002).

The literature emphasizes the role of information asymmetry in the field of entrepreneurial finance (Belleflamme et al., 2014; Schwienbacher and Larralde, 2010). This applies to crowdfunding between entrepreneurs and backers. In this context, the first type of information asymmetry is the difficulty for the public crowd to ascertain the quality and potential value of innovations. Backers decision will be based on this information gap leading to an adverse selection problem. Akerlof (1970) uses what he calls the lemon law to illustrate the concept of information asymmetry: It states that consumers are unable to appropriately distinguish products of low quality from those of high quality due to wrongful signaling (Akerlof, 1970). Therefore, there is a likelihood of a "market for lemons" due to lower cost of entry and limited feasibility verifications

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of crowdfunding projects (Ibrahim, 2014). With the second information asymmetry type, there is potentially serious moral hazard problem. After entrepreneurs raise funds from the crowd, some might have the incentive to misallocate those funds and not deliver promised returns or rewards.

4. Signaling

Due to difficulty of ascertaining the quality of a project and the crowd being prone to adverse selection, entrepreneurs ought to ex-ante invest in quality signals. Devaraj and Patel (2016) suggest that funders would rely on ex-ante signals invested before launching the crowdfunding project (such as goal amount and duration chosen by the campaign creator) and discount noisier ex-post signals such as number of backers. Devaraj and Patel (2016) shows that over time a higher goal or shorter duration increases the odds of meeting the funding target. Those two elements are signals that the entrepreneur's confidence in the value of the project and willingness to take the risk of not meeting the funding target. Agrawal et al. (2014) consider the information provided by the crowd in the form of accumulated pledged amounts an informative signal of quality. This is in accordance with Kuppuswamy and Bayus (2015). Kuppuswamy and Bayus (2015) conduct an analysis on "Kickstarter", a reward-based crowdfunding platform in the US. In this paper, they conclude that projects with smaller goals and shorter duration are more successful. Kuppuswamy and Bayus (2015) suggest that information about goal, duration and funding percentage acquired for a certain project are considered quality signals and are perceived as an indication of screening performed by previous funders. Cordova et al. (2015) find that an increase in funding goal is correlated with a lower probability of success whereas duration increases the chances of

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success. Similarly, Burtch, Ghose and Wattal (2012) find that the duration is positively associated with awareness and attention-building of the crowd. However, this does not mean that projects with longer duration are to be expected to receive funds. On the contrary, Marelli and Ordanini (2016) in which "being too greedy when setting a goal or having a time to market too long will decrease the chances of getting funded" and by Mollick's (2014) in which longer duration deceases chances to successfully reaching a funding goal. The latter is supported official analysis by Kickstarter and Indiegogo. Kickstarter promotes to set the duration on 30 days to a maximum 60 days shortened from an initial maximum of 90 days (Benenson and Strickler, 2010; Strickler, 2011). Strickler (2011) mentions that "more time does not create more urgency. Instead it makes it easier for backers to procrastinate, and sometimes they forget to come back at all." Similarly, Indiegogo says duration matters and suggests campaigns to run for less than 40 days as they are 6% more probable to reach the funding goal than longer durations (Xing, 2012).

CHAPTER III

GUIDING HYPOTHESES

Following up on the literature of Mollick (2014), our aim in this study is to identify key factors of successful campaigns on a crowdfunding platform, using a different set of ex-ante predictors and analyses. The signaling of quality and legitimacy of the initiative is of importance in the selection process of a project by the crowd (Mollick, 2014).

The assumption is that the signals reveal the underlying quality, and thereby ensure that high-quality projects are more likely to receive funding. On a crowdfunding platform, entrepreneurs suggest a project, choose the goal amount and the duration, and backers fund small to large sums for a variety of reasons. The crowd relies on signals of an entrepreneur's confidence in the project and his/her willingness to take risk in meeting or not meeting the funding target with the choice of a higher goal amount or a shorter funding duration.

Therefore, the first hypothesis, around which the analysis will be centered, is formulated as follows:

H1: Goal amount and duration are negatively related to likelihood of success.

Further, using the data we have we will investigate backers' support and herding behavior. Kuppuswamy and Bayus (2015) studies further backers support in relation to past backers' support as the project nearly reaches its goal. The literature suggests that the number of backers is expected to be affected by herding behavior. i.e. individuals follow the crowd rather than rely on their own information (Bikhchandani et

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al., 1992). Such behavior is to be viewed in relation with the change in duration elapsed and funding percentage.

Based on this, the second hypothesis is:

H2: Backers' support is related to previous backers' support as a sign of herding behavior.

CHAPTER IV

DATA

Data collected covers 1319 projects, successful or failed, on Zoomaal, a Lebanese-based crowdfunding site. The dataset covers projects from July 2013 to December 2016, nearly 6700 backers and approximately 1.5 US million dollars of funding in total. This paper concentrates only on reward-based crowdfunding in the MENA region. Due to data availability limitations for the other types of crowdfunding and their corresponding platforms, it was necessary to limit the scope of this paper to a single model. The data for this study is retrieved from one online platform to be consistent across observations. The following analysis assumes that our information on projects is considerably complete. If there were to be any missing projects, we assume them to be randomly selected from the population and thus, the significance of the coefficients would hold for the sample and overall population.

Variables of interest considered in the rest of the paper are summarized in Table 1.

Table 1: Data Summary Statistics

	mean	sd	min	max
Goal ($)	18691.43	26155.21	1000.0	280000
Funding ($)	6348.62	14223.89	2.0	107920
Funding %	0.43	0.50	0.0	3
Backers	20.88	61.26	1.0	644
Average Pledge ($)	537.68	1057.83	1.0	8465
Duration(day)	49.76	20.87	8.0	90
Success at (day)	34.00	21.45	2.0	90
Success at %	0.76	0.31	0.1	1
Dead at (day)	27.81	22.03	1.0	90
Dead at %	0.57	0.36	0.0	1
N	1319			

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A. Goal

Goal is the target amount of money set by the entrepreneur for a posted project. In the provided dataset, we disregarded extreme values of project goals, for they represented non-genuine endeavors to raise funds, i.e. goals above 1 million US dollars or less than 1000 US dollars. In Figure 1, we look at the distribution of the outcome of a project (i.e. success or failure) based on goal amount selection. The general trend is an increase in failure as goals exceed 90,000$ intervals. Whereas, the general average of success is a 30 % success rate of projects across goal intervals up to 90,000$. A clearer decreasing trend is evident with Kickstarter projects where projects with smaller goals have higher success rates (Dan, 2016), indicating that projects larger than 100,000$ have a success rate of 15%.
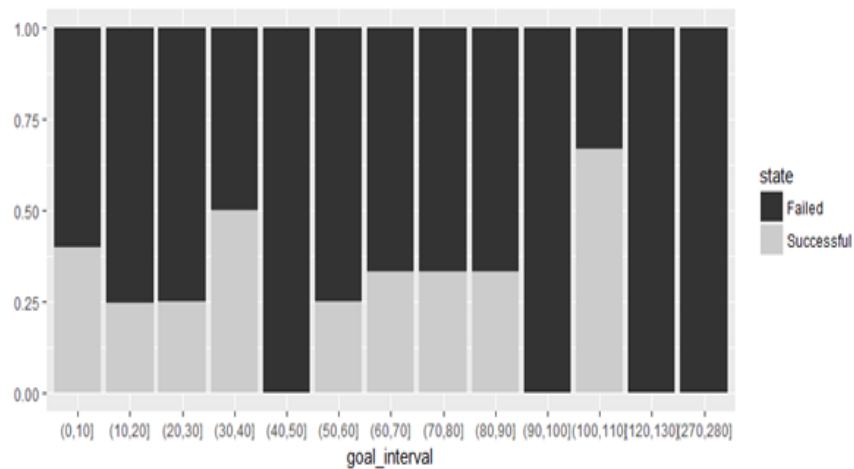

Figure 1: Goal Amount Percentage Distribution

Funding and Funding % correspond to the amount of money pledged by the crowd from the requested goal amount in US dollars and percentage respectively. Average Pledge is the average of the amounts contributed by the backers for the projects. The average funding percentage is 43% and is over-dispersed with a 50 %

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standard deviation. The same applies for the average pledge statistics with a mean of approximately 538 US dollars and a standard deviation of 1057 US dollars.

B. Duration

Duration restrictions imposed by Zoomaal is a maximum of 90 days. The mean project duration on Zoomaal is 50 days, which is high compared to that of Kickstarter: 30 days (Dan, 2016).

The success_at variable represents the day at which the state of the project changed into success and the full goal amount was at least pledged. Dead_at variable represents the day at which the last pledge was made for a certain project. For a failed project, this last transaction day represent the death day of the project in which no further backers supported it. Projects reach success at 76 % of the duration whereas the project dies on average after a 57% of the duration. In Figure 1, we look at the distribution of the outcome of a project (i.e. success or failure) based on duration selection. The trend is an increase in failure as duration increases.
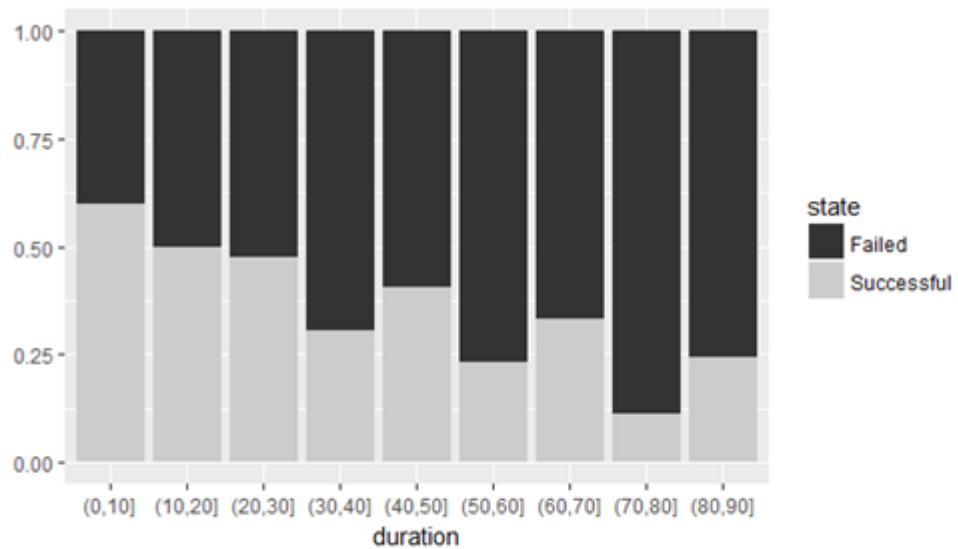
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Figure 2: Duration Percentage Distribution

C. Location

In Table 2, we provide a geographical breakdown for further insight. Collected data showed that this was the leading platform for MENA-based projects with a total of 1269 campaigns recorded from 18 MENA countries by the time of writing. Results showed that Egypt leads the number of crowdfunding campaigns with 370 finished campaigns, followed by Palestine with 217 campaigns, and Jordan with 139 campaigns. The 10 remaining MENA countries aggregated under "Others" are Algeria, Bahrain, Kuwait, Iraq, Libya, Oman, Qatar, Saudi Arabia, Sudan, and Yemen. Whereas, the category "Outside MENA" encompasses 18 countries worldwide including France, United Kingdom, India, Tanzania, the United States.

When comparing the success rate of these campaigns, Lebanon leads with a 29% success rate of posted campaigns, followed by Syria, Jordan, and UAE with 17, 13 and 11 % success rates respectively. Using the funding percentage column of Table 2, it can be noted that campaigns from some countries are more effective in reaching their

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requested funds than others. For instance, Lebanon raised 54% of the goal amount and was more effective than Palestine raising 33% of the goal, followed by Morocco and Egypt (around 20%). These variations can be explained by literature arguing that the underlying success is dependent on the characteristics of the location of the creators (Knudsen et al., 2007).

The backer variable in Table 1, referring to the average of the number of backers that supported a project, is shown to be 21 backers per project on average with a standard deviation of 61 backers. These number change when a project-based location breakdown is provided as shown in Table 2. As for the relation between the average number of backers and the average of pledged amounts, it was found that Lebanese campaigns had the highest average of 193 backers and raised an average pledge of 270 US dollars. While other countries including Syria, Jordan and the UAE raised higher average pledges with lower counts of backers than Palestine, Morocco and Egypt; and thus, the former group had a higher percentage of successful campaigns out of the total running in each country. Those numbers suggest that platforms tend to host the greatest number of projects and raise the largest amounts of funds that eventually turn out to mostly benefit the projects that the country of the platform is based in. This is evidently the case for Zoomaal with Lebanon leading as the numbers show above. Similarly, Kickstarter, a US based platform, hosts more than 100,000 projects as of 2016 based on the US.

Table 2: Data Summary Statistics by Project Location

Country	Campaigns		Successful		Average per project				
	#	%	#	%	Goal	Funding	Funding%	Backers	Pledge
Egypt	370	28	24	6	13742	2769	20	77	348
Palestine	217	16	6	3	9378	3098	33	62	291
Jordan	139	11	23	17	20453	3640	18	25	801
Morocco	134	10	6	4	16598	3386	20	61	265
Lebanon	126	10	46	37	25543	13712	54	193	270
Tunisia	67	5	3	4	15917	1987	12	59	216
UAE	38	3	5	13	22679	4177	18	35	438
Syria	24	2	5	21	10222	2465	24	21	475
Others (10)	154	12	4	3	13442	2319	17	29	85
Outside MENA (18)	50	4	8	16	21367	10972	51	20	538
Total	1319		130						

As for the geographical distribution of the backers, as shown in Figure 3, we see that most backers are based in Lebanon followed by the US, the UAE, the Netherlands, France, and Egypt. It can be noted that crowdfunding mitigates distance effects found in traditional fundraising efforts. Agrawal et al. (2014) has supported that crowdfunding relaxes geographic constraints among funders by examining crowdfunding in the recording industry.
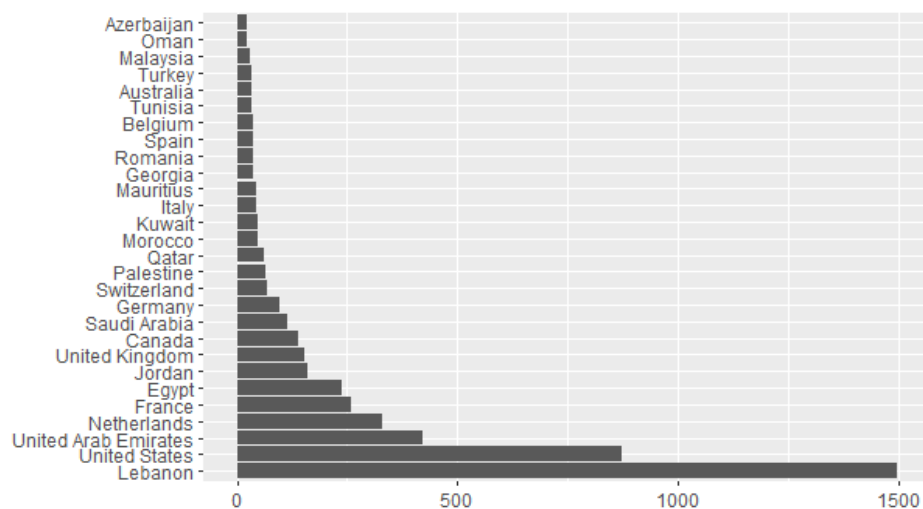

Figure 3: Backers' Country of Origin Distribution

D. Category

The overall dataset given is unbalanced and some projects have missing data regarding specific variables (e.g. category or backers' transactions). A subset of the data is used in the rest of the paper and is assumed to be randomly selected.

Regarding categories of surveyed campaigns, Arts projects vastly dominate the sample; this category includes mainly films and music-oriented campaigns. By the general number of campaigns, Arts is followed by Community campaigns then Education and Technology categories. However, regarding the amounts raised, Community ranks first with successfully raising $830,882, followed by Arts raising $683,834, Education and then Technology campaigns.

Tables 3 provides aggregate of the data in categorical comparison.

Table 3: Data Summary Statistics by Project Category

	(1) Arts	(2) Community	(3) Education	(4) Tech
Goal	1590907	2453839	528433	641730
Funding	683834	830882	141079	115469
Funding %	54	38	17	11
Backers	2746	2315	393	372
Duration	5403	4699	1770	2011
Success at %	32	24	11	5
Dead at %	68	51	21	19
Observations	111	97	32	34

Regarding the success rate of posted projects in each category as seen in Figure 4, Tech projects seem to have valid quality signals and gather enough supports in which more than 75% of the projects in that category do succeed; even though it's corresponding goals and funds raised are considerably less than other categories.
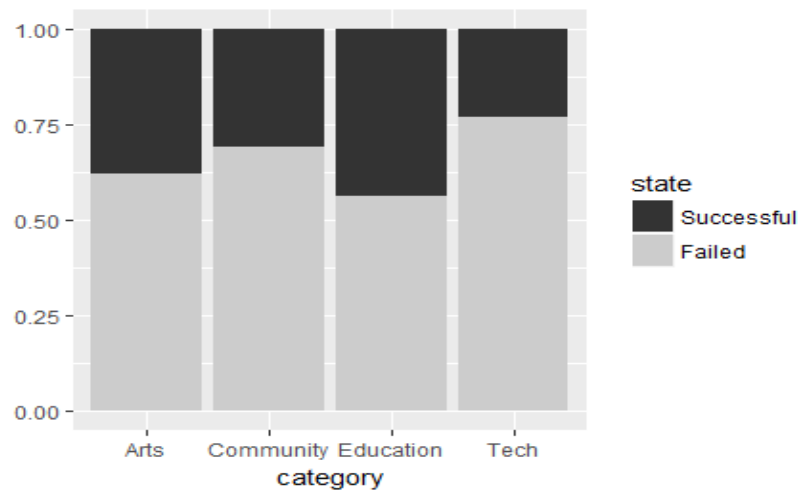
Figure 4: Categorical Distribution of Projects

Broadly speaking, any proposed action in a community is to be scrutinized and evaluated based on cultural standards. The characteristics of a community in which a project is launched arguably play a role in the likelihood of a successful funding. A certain project is likely to appeal more to the community when the project is compatible with the community's characteristics (Josefy et.al, 2017). Culture is defined as the set of often unstated beliefs, values and guidelines on ethnicity, religion, and social interaction that members of a community share together and pass on from generation to generation (Josefy et.al, 2017). Based on this, actions perceived as a good cultural fit are more likely to be supported by the community. The support in the context of crowdfunding is financial support. In relation to this, the configuration of the financial systems in a community is strongly influenced by the ways in which people culturally deal with uncertainty in financial relationships. The relationship between the borrower and the lender, as well as the funder and the entrepreneur, is based on factors of shared community values of trust, cooperation, membership, or partnership. It is based on the future expectation of compliance to the initiated financial contract. Thus, the ways

people relate financially are predisposed by uncertainty avoidance guidelines in a culture. Those guidelines help clarify cross-national differences of the financial system arrangements and the support each category receives on different location-based platforms (Lavezzolo, 2014).

Zoomaal – a Lebanese-based platform – leads with Community and Arts projects. This suggests that the culture is first based on the aid of others and second, the aspiration for creativity. There is an ease of financial transaction and trust in community endeavors that are of altruistic motives or artistic products. The community-projects' support surpasses that of the artistic-projects since the latter is likely to be subjected to further scrutinization in the MENA communities. However, when it comes to Educational and Technological pursuits funders tend to hold back and ask for more quality signals in order to entrust those projects with larger sums of capital. In comparison, with Kickstarter – a US-based platform – community-projects are not a leading category on this reward-based platform. We see massive support for campaigns in the Arts and Tech-related (Games) categories (Dan, 2016). The latter presumably is due to the fact that the funders' community has more trust in entrepreneurial technological pursuits with the potential next Silicon Valley project in mind.

E. Backers' Support

Regarding the backer's pattern that is of interest, we inspect the backer's support throughout a crowdfunding venture life time. The percentage of the total of backers added on a specific day of the project time follows a bathtub shape depicted in Figure 5.
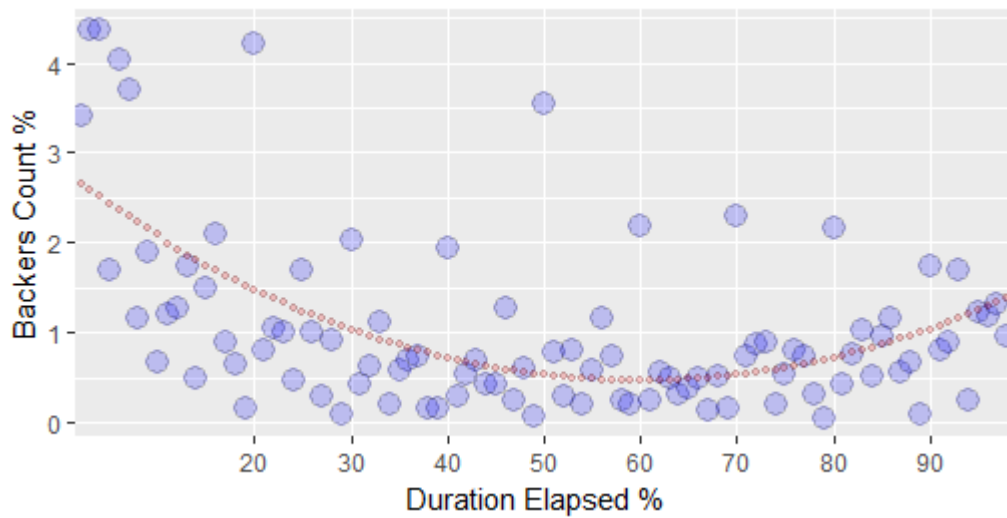
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Figure 5: Backers distribution over Project Duration

Campaigns get a considerable measure of support in the first and last 20 to 25 % of their duration cycle. After which, this initial support to the venture falls and diminish over the next weeks for the most part of the duration (25% to 70 %) before it picks up again. As the campaign approaches the end of its duration, seemingly successful campaigns are probably going to have a sharp increment in backer's support. The data above have a quadratic fit. We find that when the duration elapsed reaches 60% that is when we have the minimal backers support. This fact coincides with average death duration of failed projects, of 57% of the duration as shown in Table 1. The same bathtub shape was found using the data on a Switzerland-based platform of a 100-days duration. The minimum backers support was reached in 62 days, accounting for 62 % of the total duration (Beier and Wagner, 2016)

The graph shows that on average the number of backers added per day is around 1 to 2 % of the total average support received by the project at the end; the highest being at the beginning of the project. Thus, the initial support the first few days,

which was between 5 to 3 % of the total support, can give the entrepreneur a preliminary estimate about the available backers for this project.

This should prompt projects to employ dedicated marketing strategies to revive the project and bolster further support to reach success. Such strategies may include further updates and stronger recurring social media presence as we approach half to two thirds of the duration set.

CHAPTER V

EMPIRICAL ANALYSIS

A. H1: Ex-ante Predictors

Following the methodology adopted in much of literature on crowdfunding, (Marelli and Ordanini, 2016; Cordova et al.; 2015; Mollick, 2014), a logistic regression is used to investigate ex-ante predictors of success and quality signaling. For the logistic regression, the dummy variable was taken based on funding outcome of the crowdfunding process as a dependent variable, with the following values: 1 project success; 0 project failure. Goal and duration are variables chosen from the pool of predictors given that those indicators can be observed ex-ante and they stay fixed throughout the campaign. These indicators are vital on the grounds that they permit us to foresee whether a campaign could achieve its funding target at the exact instant the campaign is launched on a platform (Marelli and Ordanini, 2016).

In accordance with the literature of interest (Marelli and Ordanini, 2016; Mollick, 2014), the underlying mechanism of the choice of goal and duration for a project tends to be negatively related to success. From the entrepreneur's perspective, a higher goal indicates a higher value in his/her project and a longer duration implies the prospect of greater success. However, from the backers' perspective, a higher goal may be perceived as over-valuation of the project and a longer duration may be perceived as the entrepreneur's willingness to take the risk to meet his/her goal in a shorter duration. We expect backers to translate goal into a greediness metric and duration into a confidence metric. The variations in these factors would decrease backers support and thereby the likelihood of accumulating the necessary funds: as the goal increases, the

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entrepreneur is believed to overvalue the project; as the duration increases, the entrepreneur is believed not to have enough confidence in his/her project quality; in both cases the backers support would not carry the project to success.

Due to systematic variation in number of projects and variations in funding decisions across projects, controls were introduced in each model. The outcome of any project is tied to backers' support from the total number of individuals available on the platform identified as Users. In addition, the outcome's extent of success or failure is used as a control in the regression. Model 3 controls for the project category as we see a difference in the success rates across different categories. Model 4 introduces a country control i.e. the origin country that the project is initiated from. This is accordance with literature that entrepreneurial ventures' success is highly constrained by geography (H. Chen et al., 2009).

The results of the logit regression are presented in Table 2. As can be seen in Models 1 through 4, increasing goal size is negatively associated with success and duration decreases the chances of success. Controlling only for platform activity, we see that each doubling of the goal is associated with a decrease in the odds of getting a success by a factor of 0.86 and that a one unit increase in duration decreases the odds of achieving success by a multiplicative factor of 0.975. In Model 4, we see that if you increase the duration by one day and double the goal, the odds of success will be 12.7% and 1% less than what they would have been otherwise. The negative relationship is consistent as controls were introduced

Table 4: Predictors of Project Success Logistic Regression

	Logit Regression on Outcome			
	(1)	(2)	(3)	(4)
Log(goal)	-0.207*	-6.556*	-6.817*	-6.547*
		(1.66)	(1.74)	(1.73)
Duration	-0.025*	-0.124*	-0.133*	-0.127*
		(0.02)	(0.02)	(0.02)
Users	0.001*	0.003*	0.003*	0.002*
		(0.002)	(0.002)	(0.002)
Funding	No	0.0016*	0.0017*	0.0016*
		(0.003)	(0.003)	(0.003)
Category Controls	No	No	Yes	Yes
Country Control	No	No	No	Yes
Constant	2.08*	48.42*	50.79*	48.42*
Observations	279	279	279	279
Chi-square	18.44	310.04	312.19	313.19
Prob > Chi2	0.000	0.000	0.000	0.0000
Pseudo R2	0.0515	0.8663	0.8723	0.8751

* p<0.05 ; values in parenthesis are standard deviations.

B. H2: Evaluating Herding Behavior

In the analysis, we identify herding by documenting sequential correlation of funding decisions after controlling for heterogeneity. The theoretical foundation of this identification strategy is an extension of Banerjee's simple herding behavior model (Burtch, 2011) in an attempt to capture the antecedents of herding by evaluating the direct effect of previous backers count and frequency and the moderating effect of user volumes on "Zoomaal" on the current count of backers.

$$backers_{i,t} = \beta_1 backers_{i,t-1} + \beta_2 frequency_{i,t-1} + \beta_3 users_{i,t-1} + \beta_4 goal\_remaining_{i,t} + \beta_5 duration\_left_{i,t} + \beta_6 controls_i + u_i + e_{i,t}$$

The backer's variable is a count data of the backers for a project on a given day. As such I run a random effect regression in a panel setting. The frequency variable

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is the number of backers per project over the elapsed duration at a certain time. The

users are the number of individual available up to this date on the platform.

Goal_remaining refers to the amount needed by a project to reach success. Duration_left

indicates the number of days left before the project can no longer accept funds. The last

two terms represent unobservable heterogeneity between projects and an error term,

respectively.

Table 5: Herding Behavior Panel Data Random Effect Regression

Variables	(1)	(2)
Log Backers Count	32.74*	31.31*
Frequency	1.286*	1.49*
Time varying Variables		
Users Count	0.0403*	0.043*
Remaining Goal %	42.111*	15.26*
Duration Left %	-62.38*	-133.14*
Time-Invariant Variables		
Log Goal	Yes	Yes
Duration	Yes	Yes
Category	No	Yes
Constant	-131.7	-154.9
Observations	5547	5547
Groups	262	262
Chi-square	16197	15499
Prob > Chi2	0.000	0.000
R2 Within	0.5712	0.4695
R2 Between	0.5267	0.4540
R2 Overall	0.7451	0.7368
* p < 0.05		

The results of the regression are presented above in Table 3. Looking at model

1, there is clear support for the presence of herding in this marketplace, as the

coefficients on frequency and previous backers count are significant and positive. An

increase of one backers per day per project i.e. an increase in frequency is significantly

associated with a of 1.28 increment in the number of future supports of the project. As

for the backers count, a 1% increase in previous backers count is associated with a 32%

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increase in the number of backers in the next period. This provides evidence that Banerjee's herding model holds practical significance in the context of this crowd-funded marketplace. As for the control variables in the model, we can note other interesting results. A 1 unit increase in the volume of users moderates the backers count with a 0.04 increment for a certain project. The users count slightly amplifies the herding activity. The remaining goal of a project has a consistently positive effect on the backers count. The larger the need for a contribution the more prone backers are to pitch into a certain project and participate in herding behavior. Whereas, the duration left (in percentage) is negatively correlated to backers count. The higher the duration left, the lower is the sense of urgency generated among the crowd and the backers count would decrease in the next period. In Model 2 as category control was introduced, the frequency's magnitude is more evident inducing a 1.49 increment in future support, and a 1% increase in backers count is associated with a 31% increase in the number of backers in the next period.

CHAPTER VI

CONCLUSION

Crowdfunding platforms facilitate the collaboration between entrepreneurs attempting to raise capital and backers/investors willing to take an interest in the financing of new activities. This paper presents an exploratory study of dynamics of reward-based crowdfunding and the behavior of backers. We took Zoomaal data to provide insight into the nature of crowdfunding in the MENA region. We looked at factors affect that affect the likelihood of success of a given project, by comparing ex-ante projects signals that potential funders use to evaluate projects. We found that goal and duration have an impact on success or failure of crowdfunding projects on "Zoomaal" platform. We established the same results shown by other researchers (Mollick 2014, Kuppuswamy & Bayus 2015, Dan, 2016) using data on other crowdfunding platforms such as Kickstarter. We concluded that an increase in the goal is correlated with a lower likelihood of success. Second, we saw on this platform that longer project duration coincides with decreasing the chances of success on a given project. Third, there is a support for the occurrence of herding behavior in this marketplace.

The above results represent only a first exploration into the phenomenon of crowdfunding, and they have several limitations. In this analysis, we handled all the data in a social media-disconnected setting, but it would be interesting to see if our findings still hold when looking at other quality signals. Second, this paper only addresses reward-based rather than equity or other forms of investment model crowdfunding in MENA. Some researchers reasoned that the motivations of backers

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who are consumers are similar to those of backers who are investors (Agrawal et al., 2010); however, there are rises differences in the market operation between different types of crowdfunding platforms. These limitations are based on data acquired for the purpose of this study. This is exemplified by the graphical inspections of our data we have noticed that there is a certain number of successful and unsuccessful projects for which would constitute significant outliers in the mere context of duration and goal quality signals. In fact, those "outliers" over-perform most projects with longer durations and higher goal. Therefore, this asserts the need of examination of additional explanatory variables to better model and fit the data; such variables may be:

(1) in relation to the project and the entrepreneur: information about the entrepreneur in relation to his/her previous experience and network connections, in order to establish the nature of how an entrepreneur signals quality and legitimacy; the organizational form of campaign initiators as either an established organization or a single entrepreneur; and the specifications of rewards offered, whether these are services or products and their price discrimination scheme (Belleflamme et al., 2013); Social Media variables have been explored on platforms such as Kickstarter. Kickstarter data explorations suggest that projects creators with greater experience and project track are more likely to have higher success rates over time (Dan, 2016).

(2) in relation to the behavior of crowd: the cultural characteristics of the crowd that determines the pattern of supporting certain projects of a certain category or location. The variations in category support on Zoomaal and Kickstarter are fairly evident with the Community endeavors leading in the former, and with the support of technological endeavors being the least. This could be explored further in specific

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categories on the country levels in the MENA Region. For instance, the Arts category that gains great support on both MENA and non-MENA platforms, may be perceived as a good cultural fit in one country and not a potential fit in another due to cultural constraints.

This study provides preliminary results in the line of crowdfunding research; further research is required to catch up with practice and to establish relevant regulation, in order to optimize entrepreneurial crowdfunding activities and to capitalize on it as an alternative to traditional funding channels.

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