Building a successful crowdfunding campaign: what marketing factors do really matter for your project?

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ABSTRACT

Title: Building a successful crowdfunding campaign: what marketing factors do really matter for your project?

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Crowdfunding platforms constitute a new source to bring together entrepreneurs and potential funders where resources are gathered by an online community for people. Both extrinsic and intrinsic motives incentivize founders and funders to take part in the community. In our study, we focus on the role of marketing and communication in the probability that projects are successfully funded. We analysed more than 7,500 projects in the reward-based platform Kickstarter and found that intensive communication activities namely in the number of project updates, Facebook shares and comments are associated with a higher likelihood of success. Results also indicate that, the higher the number of Facebook friends (personal community), the more funds projects attract. Interestingly, a website is not found to be important to raise funding as well as Facebook accounts with low numbers of friends. Afterwards, the pitch video has an impact on financing but its significance varies per project category as it is the case for projects' profile page details on Kickstarter. We found evidence that a good-structured project description in terms of number of words can help increase the chances to reach the funding goal for certain categories like Film & Video and Games but, for others like Technology, the number of images is more significant. Other multimedia effects, such as videos and FAQs have both positive and negative effects on project types and should not overburden the campaign. From our findings, we then discuss managerial and theoretical implications.

Keywords: entrepreneurship, new venture, user innovation, resources, crowdfunding, marketing, Kickstarter.

SUMÁRIO

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As plataformas de crowdfunding constituem uma nova fonte para reunir empreendedores e potenciais financiadores, onde os recursos financeiros são reunidos por uma comunidade on-line para as pessoas. Motivos extrínsecos e intrínsecos incentivam os fundadores e financiadores a participarem na comunidade. Este estudo analisa o papel do marketing e da comunicação na probabilidade de os projetos serem financiados com sucesso. Analisámos mais de 7,500 projetos na plataforma Kickstarter e descobrimos que atividades de comunicação intensiva, nomeadamente no número de atualizações de projetos, Facebook shares e comentários, estão associadas a uma maior probabilidade de sucesso. Os resultados também indicam que, maior é o número de amigos no Facebook (comunidade pessoal), mais fundos os projetos atraem. Curiosamente, um sítio web não é importante para levantar fundos, bem como contas no Facebook com um baixo número de amigos. Depois, o vídeo de pitch tem um impacto sobre o financiamento, mas a sua significância varia de acordo com a categoria do projeto, como é o caso dos detalhes da página de perfil dos projetos no Kickstarter. Encontrámos evidência que uma descrição de projeto bem estruturada em termos de número de palavras ajuda a aumentar as chances de alcançar a meta de financiamento para determinadas categorias, como Cinema & Vídeo e Jogos, mas para outras, como Tecnologia, o número de imagens é mais significativo. Outros efeitos multimídia, como vídeos e FAQs, têm efeitos positivos e negativos e não devem sobrecarregar a campanha. A partir de nossas descobertas, discutimos as implicações teóricas e gerenciais.

Palavras-chave: empreendedorismo, novo empreendimento, inovação induzida pelos utilizadores, recursos, financiamento coletivo, marketing, Kickstarter.

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1. INTRODUCTION

Oculus Rift, a virtual reality headset for video gaming, raised $2.4 million in 2012 with a Kickstarter campaign. After the campaign, the idea became Oculus VR, acquired by Facebook Inc. in 2014 for $2 billion. The founder, Palmer Luckey, was a student passionate for electronics who started to build virtual reality systems in his garage at the age of 16. Kickstarter allowed funding and feedback for product development (Stanko & Henard, 2016; Oculus, 2019). Crowdfunding platforms allow entrepreneurs to secure funds for their projects (Moritz & Block, 2016) alleviating the obstacle faced by small entrepreneurs to raise funding from standard financial intermediaries.

More than 2,000 crowdfunding platforms were active in 2017 (Kaartemo, 2017; Galkiewicz, 2018). Popularity of crowdfunding platforms has grown significantly over the last ten years and, in 2015, were worth more than $34 billion, expecting to reach $300 billion by 2025.

Crowdfunding platforms are web infrastructures for interaction and joint development of novel ideas from communities of creative individuals and they have enabled the thriving of this new form of entrepreneurial activity by end users (Shah & Tripsas, 2007). They represent a key source of feedback for inventors to check the uniqueness and usefulness of their ideas and, above all, a mode for implementation (Gerber & Hui, 2013). Innovators are in fact able to bring a business idea into the market turning creativity into a way of making money and can reduce uncertainty about a product market appeal before its release (Da Cruz, 2018).

Furthermore, platforms enable people to satisfy social and cognitive needs (Gerber & Hui, 2013); as the CEO of Kickstarter declared, “the real power and utility is not in money; it is in community and distribution” (Brown et al., 2017; Lapowsky, 2015). One main motivation for creators and backers to participate in virtual communities as Kickstarter is the ability to become part of a group of like-minded individuals (Gerber & Hui, 2013). Crowdfunding platforms boost a community feeling among participants that, when creating or backing a project, can feel part of a team of like-minded innovators working towards a common goal. In addition to financial returns, creators benefit from community feedback and collective innovation and backers are motivated by affiliation and belongingness needs.

The ability to attract funding relies on high consumer engagement and online sharing behaviour (Chen, Thomas, & Kohli, 2016). Intensive communication activities are an effective signal of

creators' commitment to a project and can be used as a marketing technique to engage more backers. Creators invest large amounts of money and time in order to transmit a positive image of their innovations and raise awareness (Von Hippel, 2005). As a result, the sharing of detailed information about a project can create a personal bond with backers for the personal connection they establish with founders and for the feeling of self-fulfilment they enjoy when helping creators to reach their goals. Getting involved in projects through information sharing and contribution boosts in fact the community feeling; the Kickstarter community thrives as similarity is perceived between members which enjoy the interdependence with other participants and the feeling of being part of something large by working together in the realization of an entrepreneurial opportunity.

Considering this, academic scholars have pointed out the importance to guide marketers to how they can combine marketing activities to create the correct consumer knowledge structures about a brand (Keller, 2003); it is important to know which and how marketing activities can attract backers so to improve crowdfunding performance.

Entrepreneurship scholars have offered valuable insights into the factors associated with successful crowdfunding (Kuppuswamy & Bayus, 2013; Mollick, 2014; Parhankangas & Renko, 2017; Stanko & Henard, 2016), such as social media. Kaartemo (2017) conducted an analysis of 51 studies about the current and most commonly known factors affecting crowdfunding performance and, overall, widespread communication efforts that are related to high-quality campaigns and successful funding are pitch videos, project updates, pictures and other visual appeals, good textual descriptions and information (Mollick & Nanda, 2015; Fondevila Gascón et al., 2015; Hobbs et al., 2016). Thus, we analyse these marketing factors as variables measuring information sharing activities influencing funding. As Von Hippel (2005) has argued, funding decisions are largely influenced by marketing communication activities and interactions within user communities. Pebble success in the second campaign, which reached funding in 17 minutes (totalling $20.3 million), was in fact attributed by the Wired Magazine to the mastery of marketing tools (Brown et al., 2017; Lapowsky, 2015).

Nevertheless, evidence shows that few campaigns achieve the funding goals. Success rate are below 40% and in certain categories, such as Technology, are lower than 20% (Kickstarter, 2019).

Thus, it is important to expand the knowledge about the dynamics of success and failure of campaigns (Galkiewicz, 2018; Mollick, 2014; Schwienbacher & Larralde, 2010).

Understanding the role of marketing activities on funding can help project initiators increase the probability of reaching their funding goal by directing their efforts to those marketing factors that are more likely to solicit funder engagement, promote the product and guarantee a sales pipeline (Brown et al., 2017; Lapowsky, 2015). Few studies have investigated this relevant and developing area of entrepreneurial activity (Mollick, 2014) and a better understanding of the mechanisms of crowdfunding is useful not only for entrepreneurs but also for corporations' managers, policy makers, economists and politicians (Brüntje & Gajda, 2016; Moritz & Block, 2016; Meyskens & Bird, 2015).

Thus, our research will answer the following four research questions:

RQ1. *What are the effects of broad information sharing activities of projects on their crowdfunding performance?*

RQ2. *What is the impact of project updates and comments on funding? Are more updates and comments always beneficial?*

RQ3. *Is the power of social media significant and positive on funding?*

RQ4. *What is the impact of detailed campaign profile pages on the success of projects?*

For a better understanding of these questions, an analysis by type of project is needed.

How do marketing and promotion factors affect Kickstarter projects in the effort to reach their funding goal during the crowdfunding campaign? Are they all equally significant?

According to the definition provided by Kickstarter (2019), a project is "a finite work with a clear goal that you'd like to bring to life". Kickstarter projects are classified into 15 categories: Design, Technology, Art, Comics, Games, Dance, Fashion, Movie, Food, Music, Service, Theatre, Photography, Publishing and Science. Given the underlying differences in product types offered, they comprise different reward levels, funding targets, founder goals and campaign content.

2. LITERATURE REVIEW

Assembling resources is critical in the entrepreneurial journey as resources represent the ability to exploit the entrepreneurial opportunity and new venture creation (Shane & Venkataraman, 2000). Crowdfunding is adopted by entrepreneurs to assemble the resources needed to tackle a business opportunity without the need for standard financial intermediaries but by tapping into the crowd (Brown et al., 2017; Mollick, 2014). Thanks to the advent of Internet, online payment systems and crowdfunding platforms, the high obstacle initially faced by the average entrepreneur to receive funds from traditional financing sources was in fact alleviated (Short et al., 2017a).

2.1. Entrepreneurship and resource gathering

Traditional sources of new venture financing consist mainly of debt and equity. In simple terms, debt comprises contractual arrangements between the company and external parties, such as banks, who lend money to be paid back with interest in a specified period; equity involves ownership stocks granted for investing in the company. As opposed to debt, equity may additionally involve the exchange of managerial support and competencies in sales, accounting or any field (Schwienbacher & Larralde, 2010).

Obtaining funds from standard financial sources was often a barrier for new ventures. As an example, the lack of audited financial statements, which provide information about a business quality, prevented many projects from receiving funding (Berger & Udell, 1998). Equity investors bear the risks of the business and they often face the problem of information asymmetry and moral hazard when dealing with start-ups (Schwienbacher & Larralde, 2010). Moreover, venture capitalists are more likely to invest in ventures that have already received support from business angels; smaller investments usually rely on the support or the financial power of family and friends, also called bootstrapping (Berger & Udell, 1998; Schwienbacher & Larralde, 2010). Access to debt is also problematic because early-stage ventures are not yet able to provide steady cash flows assuring that interest payments will be regularly fulfilled. Lending is typically granted when tangible assets, such as inventory or accounts receivable, can be pledged as collateral (Berger & Udell, 1998).

2.2. Crowdfunding

2.2.1. Definition and models

Crowdfunding has become a widespread method through which entrepreneurial individuals can search for funding from the larger public (Mollick, 2014). It consists of "relatively small contributions of many consumer-investors over a fixed time limit" (Kuppuswamy & Bayus, 2013), which may involve the successive creation of a new venture run by an individual or a team that is both founder and end user (Shah & Tripsas, 2007). As the user entrepreneurship process, entrepreneurs can develop and test a business idea before even considering to build a company around it (Shah & Tripsas, 2007).

According to the definition of Schwienbacher and Larralde (2010), crowdfunding 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".

Several online platforms of global intermediaries connect entrepreneurs, consumers and investors (Kuppuswamy & Bayus, 2013); examples include Kickstarter, RocketHuB and IndieGoGo. They can all be referred to as innovation communities, that is "nodes consisting of individuals or firms interconnected by information transfer links which may involve face-to-face, electronic, or other communication" (Von Hippel, 2005). Such communities thrive because there are individuals who voluntarily disclose information about their innovations, which are of interest to others; this means that information is not yet protected by intellectual property rights (Von Hippel, 2005). Crowdfunding platforms can be easily accessed by contributors and non-contributors who browse the website for information about projects.

Crowdfunding activities are organized in four distinct models (Galkiewicz, 2018; Belleflamme et al., 2014; Crosetto & Regner, 2018; Giudici, Nava, Rossi Lamastra, & Verecondo, 2012). Firstly, there are reward-based platforms on which investors obtain perks like copies of the creative product or custom experiences related to the project launched. Secondly, equity-based models are platforms based on venture ownership stakes or equity-like shares that are given to supporters in exchange for their funds. Thirdly, lending-based platforms comprise rewards given to supporters in the form of interest payments based on contractual arrangements of loans made. Lastly, donation-based models do not include any kind of monetary exchange for the funders, except possible tax reductions, who decide to invest in projects for a cause, such as

donating to a charity organization.

We focus on reward-based crowdfunding because it involves the largest portion of online platforms and it is the crowdfunding model expanding more rapidly (Kuppuswamy & Bayus, 2013).

On Kickstarter, common reward types are: products advertised, forms of creative collaborations in the project (e.g. appearance in a comic or movie), an experience (e.g. a meeting with the author of a movie or the entrance to a concert) and, finally, some forms of creative souvenirs (e.g. photos of the filming location) (Kuppuswamy & Bayus, 2013).

2.2.2. Goals of founders

Crowdfunding platforms do not only serve the need for fundraising through the exchange of money but creators also participate with the desire of learning from and connecting with others (Gerber & Hui, 2013). Entrepreneurs join communities in order to benefit from the efficiency of collective innovation (Baldwin et al., 2006). A substantial body of research has shown that informal cooperation among innovators is flourishing; interacting within communities and assisting others with their inventions is a growing trend (Von Hippel, 2005).

From innovation communities, entrepreneurial individuals derive a sense of satisfaction. They enjoy autonomy and control over their work which is what they are passionate about (Scott Morton & Podolny, 2002; Shah & Tripsas, 2007). On crowdfunding platforms, people share "intellectual commons" (Von Hippel, 2005) and are characterized by the passion for innovation and creativity. Connections are made not only with funders but also with creators that are seen as like-minded innovators (Gerber & Hui, 2013). Entrepreneurs want to gain public attention and validate their product before it goes to the market receiving some indication about future demand (Mollick, 2014). Creators publicly disclose project information by, for instance, sharing details on a website so that people can discover it and they can assess its market potential (Brown et al., 2017). Additionally, established firms are using platforms as marketing and informational channels to promote their brands, receive consumers' feedback and raise support for firm causes (Brown et al., 2017; Da Cruz, 2018).

To raise awareness and attention already in the early stage of development, online communication methods are used, in particular those that involve a high interaction with the

audience. Common tools used for campaigns are blogs and social networks as they provide direct and personal communication channels with the crowd and not solely web content (Schwienbacher & Larralde, 2010).

2.2.3. Goals of funders

Supporters participate in crowdfunding platforms not simply to receive rewards but to feel part of a community by helping others in realizing their project (Gerber and Hui, 2013). Virtual communities allow people to have a chat with creators and have an active role in their project; members can comment and vote for a design, give feedback and motivate commitment (Hui, Greenberg, & Gerber, 2014). Supporting others with their projects provides funders with a sense of belongingness and social connection within a community of reliable and trusty individuals with common interests (Gerber & Hui, 2013). The role of market knowledge that investors or consumers have about a product or project becomes an important incentive to promote behaviour. As Keller (2003) has argued, disseminating information related to a product's benefits, functional and experiential attributes, is relevant since it captures consumers' reactions towards a new product and affects positioning in their minds.

Funders, by feeling part of the community, will then encourage others to participate and share online (Chen et al., 2016). As a result, entrepreneurs receive feedback both about the product and market acceptance and can compare their ideas with the competition (Brown et al., 2017).

Incentives to invest in projects can be classified in two broad categories: intrinsic and extrinsic; they could be referred to as platforms' marketing mechanisms enabling participants to feel like a community and, as such, be more likely to contribute. Self-Determination Theory explains types of motivation: intrinsic-motivated individuals enjoy a task and derive pleasure from it; conversely, extrinsic-motivated individuals may be stimulated by a financial compensation or formal recognition. Intrinsic motivations relate to the activities themselves which fulfil the human needs to be competent, autonomous and have control over a task; altogether these three elements bring pleasure and enjoyment to an act that is performed for the fun and satisfaction one can derive from it. Conversely, extrinsic motivations are external to the person and are usually governed by someone else than the person who carries out the task, which can for instance provide career advancement opportunities or other incentives to reinforce the desired behaviour (Roberts, Hann, & Slaughter, 2006; Ryan & Deci, 2000). Self-Determination Theory helps understand why some may invest in projects to support a friend or a person they admire

and share profits (e.g. in equity-based crowdfunding); others are inspired by the project and want to create social impact (e.g. in donation-based crowdfunding), are motivated by the rewards (e.g. in reward-based crowdfunding) or financial returns in terms of fixed interest payments (e.g. in lending-based crowdfunding).

For example, in open-source projects, participants engage in software development mainly by intrinsic motives (Alexander Hars, 2002): a personal hobby or feel rewarded to work on a common goal with like-minded individuals (i.e. community identification).

2.3. Characteristics of successful crowdfunding campaigns

Many authors have stressed the importance of consumer market knowledge as a resource for innovative product success and of knowledge sharing to stimulate cooperation and mutual learning (Zhou & Li, 2012). Interactive communication methods allow to disseminate information and provide explanations about a product, thus facilitating the purchasing process. For example, having a firm or brand Facebook account has been considered as a recent trend in marketing. Facebook accounts represent marketing factors that can enhance and strengthen the community feeling and sense of belonging to an organization, brand or product (Kang, Tang, & Fiore, 2014). They may help a brand establish good relationships with the consumers that are maintained in the long-term due to regular information sharing and interactions.

Successful projects make extensive use of communication keeping an ongoing dialogue with potential backers through comments, discussions and questions (Mollick, 2013). Communication with the consumer has two key dimensions: breadth and depth (Laursen & Salter, 2006). Breadth refers to the horizontal dimension of communication (i.e. the level of disparate information or general knowledge domains disseminated about a subject), whereas depth, the vertical dimension of communication, is reflected in the sharing of deeper or more precise details about a knowledge domain and of the interdependencies existing among factors involved (Laursen & Salter, 2006; Luca & Atuahene-Gima, 2007; Zhou & Li, 2012). Breadth becomes important since, because of the diversity of information shared, it allows to reach audiences in a variety of ways, therefore allowing to a higher reach.

As Yang and colleagues (2005) have argued, depth is captured by the quality of information-presenting websites reflected in factors like detailed descriptions of the product (e.g. number of words and FAQs) and up-to-date information (e.g. updates), unique contents (e.g. videos and images) and interactive feedback (e.g. Facebook shares and comments). Breadth is measured

in the pitch video, Facebook account and website external to the platform. Altogether, they show the extent of projects' online marketing and communication activities for attracting backer interest and funding. In brands' online communities, members develop a social identity and identification with a brand and thus are able to engage more people with Word-Of-Mouth. Users typically enjoy a feeling of interdependence and integration (Kang et al., 2014; McAlexander, Schouten, & Koenig, 2002).

2.4. Breadth of communication: the key marketing measures

2.4.1. The effect of pitch videos

Videos are one of the most appealing factors to potential backers as they introduce the creator and add legitimacy to a project (Frydrych, Bock, Kinder, & Koeck, 2014; Wheat, Wang, Byrnes, & Ranganathan, 2013). A pitch video is a visual tool that helps creators communicate enthusiasm about their project and arouse backers' interest to get engaged (Wheat et al., 2013); it allows to convey all the main project information in a couple of minutes (Moritz & Block, 2016).

Research shows that videos encourage revisits: websites that promote a product with lively visual features are more likely to be revisited by potential consumers than websites that only share static content through pictures and texts (Jiang & Benbasat, 2007). This incentive to revisit the website is particularly important for crowdfunding as it can translate into a higher likelihood to reach financing. Pitch videos transmit the experiential and emotional attributes involved with a product and are more likely to create an emotional bond and positive perceptions towards a brand or creator than a textual description of the benefits and attributes of the product (Jiang & Benbasat, 2007). Kickstarter identifies a pitch video on the project page as the number one rule for success (Xu et al., 2014; Kickstarter, 2019); 80% of the projects that reached their funding goal had at least one video (Kuppuswamy & Bayus, 2013). As such we propose the following:

H1a. The presence of a promotional video has a positive and significant effect on the probability of successful funding.

2.4.2. The effect of social media

In order to connect with the crowd, online interaction and socializing activities are essential (Borst et al., 2018; Schwienbacher & Larralde, 2010). News media and marketing channels can

spread the campaign to a larger public and reach out to people that are not closely connected with creators (Gerber & Hui, 2013). Online communities help in fact the viability of projects (Kuppuswamy & Bayus, 2013).

Social media is a powerful engagement tool for the emergence of a feeling of belonging. As Laursen and Salter (2006) have argued, the network of social relationships that entrepreneurs build and maintain with the external environment shapes performance. However, extant literature contains controversial arguments about the effectiveness of social media sites. Some marketing practitioners have argued that the usage of Facebook was considered as a valuable marketing tool only by around 37% of respondents (Hassan et al., 2015); others have stated that social media can help an organization reach millions of people in a very short time and at a very low cost (Kirtiş & Karahan, 2011). Although we cannot find a consensual view on social media effects, we take the view of a positive effect as more recent and diffused; as such, we hypothesise the following:

H1b. A project Facebook account has a positive and significant effect on the probability of successful funding.

2.4.3. The effect of projects' external webpages

A website is a communication tool to get more people on board for a project and helps raise awareness, share information and give rise to viral marketing effects, like Word-Of-Mouth (Moritz & Block, 2016); for this reason, many entrepreneurs usually implement an external website to complement their campaigns.

Websites are also employed to boost sales. Consumer online behaviour is changing at a fast pace and content marketing, such as through websites, enables to enlarge the consumer base and influences decision-making (Pulizzi & Barrett, 2009). In this regard, a website constitutes a firm informational asset; for instance, websites of retail businesses were shown to be directly linked to the volume of sales and online transactions (Caruana & Ewing, 2010). Thanks to the content which is shared online on a brand webpage, consumers can evaluate the attributes of a product and compare offerings before the actual purchase (Pulizzi & Barrett, 2009). Communication tools should attract the attention of the consumer raising interest in acquiring a product and inform about the brand's offerings and attributes; only after being fully informed, the consumer will take action and buy. In this sense, a website is a tool which facilitates the

purchasing process as the visitor can establish a form of cognitive loyalty with the company (Caruana & Ewing, 2010). Thus, we hypothesise the following:

H1c. A project website has a positive and significant effect on the probability of successful funding.

2.5. Depth of communication: the key marketing measures

2.5.1. The effect of project updates and comments

To appeal backers, effort must be invested in product fundraising and development updates (Brown et al., 2017). Research has pointed that communication intensity with the community is positively related to funder support (Kuppuswamy & Bayus, 2013); communication efforts, such as blog posts and updates, can in fact be determinant for the success of a crowdfunding project.

As Giudici and colleagues (2012) tested in their study, frequent updates duplicated the probability of successful funding in their sample from 32.6% to 58.7%. Interestingly, individuals are also more likely to persist in their work when they publicly commit and put effort to share achievements with others (Gerber & Hui, 2013; Weick, 1984). In this regard, comments provide a source of feedback about the product and, especially, about the community interest in the project; on social networks like Twitter and Facebook, people can in fact follow their preferred brands and comment or ask questions directly to the company (Hassan et al., 2015). Comments highlight the power of user-generated content and community involvement which derive from project updates and social media posts; those who comment are not mere passive recipients of the information but they read and contribute to content marketing (Goes, Lin, & Au Yeung, 2014). The impact of user reviews has also been widely recognized in literature as an important influencing factor of decision-making of current and future consumers. As such, we propose the following:

H2a. The higher the number of project updates, the higher the probability that the project is successfully funded.

H2b. A higher number of comments increases the probability that the project is successfully funded.

2.5.2. The effect of social network engagement

Peer influence in social media tends to improve project performance in terms of funding (Brüntje & Gajda, 2016). Research has shown that a high amount of friends on social networks is positively associated with the success of a crowdfunding project (Mollick, 2014); conversely, some studies have shown that Facebook profiles that have a relatively small amount of friends (i.e. less than 500 connections) decrease the probability of campaign success (Moritz & Block, 2016).

The power of social media is not equally significant among projects; social connections are in fact different in strength and intensity (Burke & Kraut, 2013). Burnett (2000) has described participation in online communities as active or passive. Passive connections refer to followers who browse a fan page for offers and do not actively participate in community activities generating traffic and hits; conversely, active connections refers to people who are intensively engaged and identify themselves with the brand, send messages, comment and share information (Kang et al., 2014). Active members usually influence decision-making of all participants. Herd behaviour in social networks is a widely recognised phenomenon, underlying the fact that people do not generally grasp private information but rather information which is published by other agents, in particular that which belongs to the same social group (Alkemade & Castaldi, 2005).

The power of social media relates both to the size of the social network community around a project (i.e. number of Facebook friends) and the participation of users (i.e. number of shares). With regard to the number Facebook friends, considering previous arguments, we expect that a larger size of the network (i.e. a higher number of connections) translates into a higher probability of successful funding. Considering this, the likelihood of successful funding might be linearly related to the amount of Facebook friends. Thus, the following hypotheses were developed:

H3a. Projects with a high number of Facebook shares have a higher probability of being successfully funded.

H3b. The higher the number of Facebook friends, the higher the likelihood of successful funding.

2.5.3. The effect of detailed projects' profile pages

An extensive usage of language, in terms of number of words used to describe new offerings, has also a determinant role on campaigns' crowdfunding performance. It is a persuasion factor project initiators can play with from the pre-launch phase and onwards to maximize the probability of success (Desai, Gupta, & Truong, 2015).

Open innovation literature shows that projects' likelihood of success is affected by the textual length of their description and the content legibility (Xu et al., 2014). As Yang and colleagues (2009) have shown, online crowdsourcing projects with shorter problem statements on the Chinese platform TaskCN captured more solvers. In crowdsourcing contests, solvers are more likely to participate when learning costs are low, which means shorter project descriptions, because they take fewer time to be read and understood (Yang et al., 2009). It is also important that project presentations are balanced with multimedia effects because they can make understanding more complex given the burden of information provided (Jiang & Benbasat, 2007). This can be due to the way information is disseminated, often faster than people can process and, thus, leading to distraction, stress and, eventually, negatively affecting decision-making (Lewis, 1996).

In general, on Kickstarter, a complete campaign profile page in terms of words count and project description positively affects crowdfunding performance (Kaartemo, 2017); detailed profile pages in terms of information shared in textual and visual form help improve the understanding of a project, signal quality and, finally, the ability of the creators to execute the project (Chen et al., 2016). As such we propose the following:

H4a. A higher number of videos shared is associated with a higher successful funding probability.

H4b. A higher number of words in the description increases the probability that the project is successfully funded.

H4c. A higher number of images in the profile page increases the probability that the project is successfully funded.

H4d. A higher number of FAQs increases the probability that the project is successfully funded.

3. METHODOLOGY

3.1. Research approach

The analysis follows a descriptive quantitative approach with the purpose to investigate correlation between marketing variables and funding. We used secondary data collected from external sources. A quantitative approach is a systematic method with a clear procedure (i.e. development of hypotheses, sample selection, data collection and statistical testing) and it is suitable when a high amount of data is needed. Quantitative studies involve objective testing of hypotheses which, when the standard steps for data sampling and analysis are followed, produce reliable results that can be generalized from a small group of units of analysis to the larger population.

3.2. Data sources and structure

Our study specifically looks into the Kickstarter platform. Kickstarter is one of the most established crowdfunding platforms with a total amount invested in projects of over $4.34 billion and more than 164,000 successfully-funded projects since its launch in 2009 (Kickstarter, 2019). Until October 2018, the total number of launched projects amounted to more than 400,000 and 45 out of the 50 most funded Kickstarter projects became entrepreneurial ventures (Mollick, 2013).

Publicly available data from web-based data providers were collected. The data for the analysis derive directly from Kickstarter and from Kaggle. Kickstarter automatically collects and updates daily metrics, such as funding success rates, pledged amounts and performance statistics for each project category. *Table 1* shows a sample list of statistics collected in March when the analysis started.

Category	Number of Launched Projects	Total Dollars Raised (in M)	Success Rate (in %)
Film & Video	70,307	433.42	37.42
Music	58,744	229.10	49.71
Publishing	45,354	156.80	32.03
Games	43,603	977.07	38.13
Technology	37,733	800.70	20.25
Design	36,036	910.95	36.83
Art	33,266	108.79	42.47
Food	27,651	146.42	25.08
Fashion	27,546	163.84	26.46
Comics	13,370	90.60	56.98
Photography	11,713	43.61	31.46
Theater	11,643	43.63	59.77
Crafts	10,200	17.52	24.56
Journalism	5,311	16.01	22.07
Dance	4,067	14.13	61.82
Total	**436,544**	**4.15 B**	**36.74**

Table 1. Kickstarter projects and dollars as of March 18th, 2019.
Source: Kickstarter (2019). Kickstarter Stats.

Kaggle is a public data platform enabling users to retrieve and publish datasets for a wide range of companies or research fields to be used for private purposes and to participate in online data-science challenges. Several data were collected and made avaiable by data scientists of the online community for Kickstarter; they comprise general project characteristics for several time frames. We selected the dataset which was suitable for our analysis as containing information about marketing variables of interest.

On Kickstarter, creators may opt for various project types: they range from artistic to commercial offerings which encompass different aspiration levels and outcomes (Mollick, 2016). Altogether, we group the 15 Kickstarter categories in two main groups: the product-oriented projects and the art-oriented projects. The art-oriented projects belong to Art, Comics, Dance, Film & Video, Music, Theatre, Photography and Publishing and are mostly associated with the desire of an artistic individual or informal group to launch a one-time project. Conversely, the product-oriented projects, which belong to Design, Technology, Games, Crafts, Food and Fashion, are launched with the desire to create a commercial venture (Mollick, 2016).

From the dataset, five major Kickstarter project categories have been selected for the analysis; they are Film & Video, Music, Games, Design and Technology. Selection criteria were the followings: firstly, these project types together represent approximately 56.5% of the total launched projects, meaning that more than half of campaigns launched fall into these categories; moreover, they account for 80.8% of total money raised by projects in the platform [See *Table 1*]. Research has also shown that 90% of projects related to Design, Games and Technology were still ongoing start-ups one year after receiving funds and 32% of them had revenues higher than $100,000 per year (Crosetto & Regner, 2018; Mollick & Kuppuswamy, 2014). Finally, digital goods, such as movies, music or games, represent a meaningful and rapid-growing share of the economy in which interactions and contributions of users within communities are intense and wide known (Shah & Tripsas, 2007). A wide range of the most innovative consumer electronics products in 2013, which had been previously turned down by venture capitalists, was introduced thanks to crowdfunds; examples are 3-D printers and electronic watches (Jeffries, 2013; Mollick & Kuppuswamy, 2014).

Kickstarter campaigns work as follows: anyone, so-called creator, can start a project by building a page on the website describing the purpose, setting the funding goal (i.e. pledge) and the rewards aimed to be delivered by using the funds. Each project has a specified funding cycle, during which it is possible to raise backers and receive funds (Kuppuswamy & Bayus, 2013). The campaign funding period is defined by the creators from 1 to 60 days (Chen et al., 2016). A detailed pitch with a video is usually prepared showing the project and explaining the reasons why public support is sought (Chen et al., 2016).

Kickstarter profile pages usually contain both visual and textual elements about the product to be launched: the page structure is composed of videos, pictures, the pledge, the project description, the rewards plan, description of the creator, links to social media and further information about technical specifications, project history and timeline and challenges. An example is presented in Figure 1 (Appendix).

3.3. Measures

Our study relies on the cross-sectional structure of Kickstarter data: multiple units of analysis, that is projects, are observed between December 2013 and June 2014, resulting in 18,142 observations.

We measured depth of communication by the number of Facebook friends, shares, updates, comments, project profiles' words, videos, images and FAQs; they can be considered as measures of the extent of information completeness that make backer understanding of the project easier (Yang et al., 2005).

Table 2 below provides the list of selected variables for projects in our Kaggle dataset.

Variable	Description
Top Category	Category of project launched
Goal	Fundraising target amount to raise for successful funding
State	It indicates whether the project funding is successful or failed
Rewards	Number of reward levels offered to backers in terms of product and pricing combinations
Updates	Number of project updates by creators
Comments	Number of comments related to the project
Duration in Days	Length of the funding cycle set by the project creator to raise funds
Facebook Connected	It indicates whether or not a Facebook account was connected to the project (Yes/No)
Facebook Friends	Number of friends on the project Facebook account
Facebook Shares	Number of shares of project posts on Facebook
Has Video	It indicates the presence of a pitch video (Yes/No)
Creator Website	Link to the project website, if existing
Creator - # Projects Created	Number of previously launched projects by the creator
Creator - # Projects Backed	Number of Kickstarter projects in which the creator invested
# Videos	Number of project videos published on the Kickstarter page
# Images	Number of project images published on the Kickstarter page
# Words (Description)	Number of words used for the project description in the profile page
# FAQs	Number of posed and answered common questions on specific project issues on Kickstarter

Table 2. Selected variables for Kickstarter projects of the Kaggle dataset.
Source: Kaggle (2019). Kickstarter datasets.

To start with, crowdfunding success is measured in whether the targeted funding goal is reached in the pre-defined period (Zvilichovsky, Inbar, & Barzilay, 2015); in fact, project initiators retain the funds and must deliver the rewards only if the pledge is reached. Thus, our dependent variable is *funding*, that is a dummy variable taking the value of 1 if the funding goal is reached (i.e. *state* = successful) or 0 otherwise (i.e. *state* = failed).

Explanatory variables included in the model in order to explain *funding* are:

Explanatory variable	**Notes**
updates	Updates highlight creator commitment in the project.
comments	Comments show the power of user-generated content.
facebook_friends	Facebook friends and shares are used independently as they explain different aspects: friends measure social network size and shares community engagement. Namely, we calculated the Pearson's correlation coefficient, a statistical test measuring intercorrelation between variables; when the value is different from zero, two features are linearly interdependent. The number of Facebook friends slightly grows linearly with the number of shares (correlation = 0.0318), thus we built two distinct hypotheses. These measures refer to the consumers' social media engagement with a brand and level of content contribution. According to Schivinski and his colleagues (2016), shares of a post differ from likes because they change the commitment of the person from the role of observer to media contributor.
facebook_shares	
video	Variables were built to convert the categorical counterparts (i.e. Has Video, Facebook Connected and Creator Website) to a numerical form. The categorical features, as being binary, were encoded into the values 1 if the criterion is satisfied and 0 otherwise.
facebook	
website	
n_videos	Detailed campaigns are expressed in the extent or length of information given on Kickstarter which is defined in terms of number of words, videos, images and FAQs published as they are measures of the web presence (Giudici et al., 2012).
n_images	
n_faqs	
n_wordsdescr	

Table 3. Summary table of explanatory variables.

Successively, several control variables were considered. Control variables allow for comparison of regression coefficients among different projects reducing the omitted variable bias; we are not particularly interested in these measures for the purpose of the analysis but they affect the dependent variable. When included, we can control or, more precisely, remove their effects; conversely, regression estimates would be biased. They are:

Control variable	Notes
goal	Goal amounts were converted in US dollars to allow for comparison with the exchange rates of the European Central Bank[1] as of March 23, 2019.
rewards	The amount of rewards can affect amounts raised as funders can choose from more pricing options and find the one which more closely matches their expectations.
duration	The duration of a campaign in number of days might determine the level of funding (Chen et al., 2016). Empirical studies on innovation contests have argued that longer projects are expected to attract more solvers given the longer exposure (Yang et al., 2009).
creator_projcreated	Previous experience and history may influence crowdfunding: projects of individuals who have already launched or supported other campaigns have higher success rates as they mark the reliability and credibility of the creator, in contrast to founders who have never been active (Zvilichovsky et al., 2015). Additionally, backing other creators' projects can increase the chances of success due to some reciprocity effect (Zvilichovsky et al., 2015). Project initiators have also already gained some knowledge of platform dynamics and recognition or popularity among backers. Namely, there is a kind of reviews influence phenomenon for which popular projects attract even more contributors as shown by a Beijing study (Zhang, Ye, Law, & Li, 2010). Researchers had highlighted the effect of reference groups: most popular items in the menu of a Beijing restaurant were ordered more and resulted in higher customer satisfaction. They were used as a signal that these options were good and approved by others making choice easier for customers.
creator_projbacked	

Table 4. Summary table of control variables.

Lastly, to measure the effects of explanatory variables by product nature, the variable *project_type* was included in regression. It is derived from the encoding of the categorical

[1] Currency Converter - ECB Statistical Data Warehouse: https://sdw.ecb.europa.eu/curConverter.do

variable *Top Category* in values ranging from 1 to 5 for Film & Video (1), Music (2), Games (3), Design (4) and Technology (5).

3.4. Sample and descriptive results

To investigate the problem, a Kaggle dataset of 18,142 Kickstarter crowdfunding projects with 36 unique features for each observation was used. On average, 50% of projects were successful and 50% of projects failed to reach the goal.

After removing data with randomly missing entries, the final sample includes 7,871 units of observation with 4,413 successfully-funded projects (around 56% of the total number of projects); total funding amounts to $131,069,114 and the average pledged amount per backer is around $82. The majority of projects falls into the category of Film & Video (34%) and then, in order of magnitude, there are Music (26%), Games (17%), Design (15%) and Technology (9%); the proportions of successful projects are 56% for Film & Video, 67% for Music, 53% for Games, 50% for Design and 40% for Technology. Most campaigns were launched from the USA (80%), then follow the UK (12%), Canada (5%), Australia (2.4%), New Zealand (0.5%) and, last, the Netherlands (0.2%). Outliers, that is points with unusual values of X and Y which can bias the regression estimates, were absent; in fact, after a Z-scores calculation (i.e. data that are outside four standard deviations from the mean with values greater than 4 or less than -4), our dataset is sufficiently large to exclude such extreme points.

Project's funding goals range from a minimum of $100 to a maximum of $100 million; the mean campaign target goal is around $38,386. Pledged amounts for projects are between $1 and $6.23 million, with an average of $16,578 (See Summary statistics in Table 5, Appendix).

3.5. Procedure

The funding goal in US dollars' histogram highlighted a skewed distribution; thus, we decided to include the variable with the logarithmic function in our model as the log of the data tends to follow more a normal distribution (Figure 2, Appendix). Namely, monetary variables are some of the most common sources of skewed distributions (Wooldridge, 2015). Additionally, the variable for the number of words measuring the size of the project description was also logged so that data approached a normal curve.

We regressed linear probability models and then binary logistic models. We run the Breusch-Pagan Test to see if linear models exhibited Heteroskedasticity, one limitation of the Linear Probability Model (LPM). We rejected the null hypothesis of no Heteroskedasticity as the p-

values are lower than 0.01; thus, the variable y varies unequally across the range of x values. This violates the OLS assumption according to which all error terms must have the same variance.

Studentized Breusch-Pagan Tests:			
Model:	BP	df	p-value
Full Model	689.99	16	0.0000000
By Category:			
Film & Video	41.553	16	0.0004599
Music	97.313	16	0.0000000
Games	62.151	16	0.0000002
Design	77.713	16	0.0000000
Technology	105.730	16	0.0000000

Table 6. Breusch-Pagan Tests' results.

The probit and logit models address some of the LPM limitations. OLS assumes a linear relationship between variables; this means that each unit increase in x causes the same change in y. However, for instance, increasing the number of Facebook friends in a project account by one from 7,550 to 7,551 may not have the same effect as a change by one from 9,999 to 10,000; in fact, potential backers are impressed by a large network size, indicator that the project initiator is recognized and successful in the community (Zhang et al., 2010).

Logistic functions produce similar marginal effects (Chambers et al., 1967). As we will not analyse odds ratios for logit coefficients, we decided that the probit model was appropriate. It restricts probabilities in the [0,1] interval taking into account Heteroskedsasticity when model's error variances are not constant.

The final model specifications are the followings:

$$\begin{aligned} Funding = {} & \beta_0 + \beta_1 * updates + \beta_2 * comments + \beta_3 * facebook + \beta_4 \\ & * facebook\_friends + \beta_5 * facebook\_shares + \beta_6 * video + \beta_7 \\ & * website + \beta_8 * n\_faqs + \beta_9 * n\_videos + \beta_{10} * n\_images + \beta_{11} \\ & * \log(n\_wordsdescr) + \beta_{12} * \log(goal_{us}) + \beta_{13} * rewards + \beta_{14} \\ & * duration + \beta_{15} * creator\_projbacked + \beta_{16} * creator\_projcreated \\ & + \varepsilon \end{aligned}$$

β0 is the constant term that reflects the probability of a project to be successfully funded when all independent variables are zero, which could be translated into low or no intensive marketing activities.

We tested for multicollinearity in our data; a Variance Inflation Factor above 10 indicates multicollinearity (Belsley et al., 1980). From the results in *Table 7*, multicollinearity is not present as all factors are below 10. Thus, all explanatory variables were assumed to be exogenous, meaning that their values do not depend on the other variables in the model and so the coefficients' estimates are assumed to be unbiased and consistent.

Variance Inflation Factor

Variable	*VIF*
updates	1.515
comments	1.157
facebook	1.301
facebook_friends	1.336
facebook_shares	1.068
video	1.076
website	1.025
n_faqs	1.290
n_images	1.709
n_videos	1.084
log(n_wordsdescr)	1.596
rewards	1.321
duration	1.083
log(goal_us)	1.355
creator_projcreated	1.139
creator_projbacked	1.156

Table 7. Variance Inflation Factor.

3.6. Data analysis and summary statistics

To start with, t-tests showed significant differences between the average values of communication depth's variables between successful and failed projects (*Table 8*). For instance, there is a large gap between the average number of comments which is around 10 for failed projects and 114 for successful ones ($p < .01$). The average number of Facebook shares also varies greatly between projects that reached their funding goal with a mean value of 762, while unsuccessfully-funded projects have a mean amount of comments of approx. 176 ($p < .01$). With regard to the average number of updates, Facebook friends and number of words and images, the values are also distant between failed and successful projects differing from 4 to more than 200 units ($p < .01$).

Mean values	Funding		T-tests
	successful	failed	p-value
video	0.92	0.86	0.00000
facebook	0.68	0.65	0.02026
website	0.73	0.71	0.01138
updates	5.93	2.09	0.00000
comments	113.62	10.00	0.00000
facebook_shares	761.94	176.37	0.00000
facebook_friends	580.76	374.47	0.00000
n_faqs	1.13	0.64	0.00000
n_videos	0.42	0.28	0.00000
n_images	9.33	7.43	0.00000
n_wordsdescr	793.77	733.80	0.00004

Table 8. Average values of explanatory variables.

Regarding communication breadth, t-tests also showed that the average probability of successful funding of projects with a video, facebook and website is not equal to the average probability of successful funding of projects with no video ($p < .01$), facebook ($p < .05$) and website ($p < .05$).

Next, we started the regression analysis. The multiple linear regression modelling used for our binary dependent variable is the linear probability model because the response probability is linear in the parameters. Nevertheless, given that predicted probabilities of our dependent variable can take nonsensical values below 0 or above 1 (Figure 5, Appendix) and marginal effects can't be assumed as constant (i.e. the change in the probability of projects' successful funding varies depending on x variables), we analysed logistic functions (i.e. probit models). Linear equations, that is straight lines, are not bounded between the [0-1] range and thus predicted probabilities can fall outside the interval. Conversely, in logistic functions and thus nonlinear models, the basic law of probability is satisfied.

Regression outcomes of the probit model are presented in *Table 9*. With regard to the explanatory variables, first we have the marketing measures related to breadth and then to depth of communication.

Results of the regression

	Dependent variable:
Model	Funding
Explanatory variables:	
video	0.480*** (0.056)
website	0.051 (0.037)
facebook	-0.183*** (0.041)
updates	0.101*** (0.005)
comments	-0.0001 (0.0001)
facebook_friends	0.0003*** (0.00003)
facebook_shares	0.001*** (0.00004)
n_faqs	0.014* (0.009)
n_images	-0.003 (0.002)
n_videos	-0.043** (0.017)
log(n_wordsdescr)	0.097*** (0.025)
Control variables:	
rewards	0.026*** (0.004)
duration	-0.013*** (0.002)
log(goal_us)	-0.548*** (0.016)
creator_projcreated	0.016* (0.009)
creator_projbacked	0.004** (0.002)
Constant	3.339*** (0.174)
Observations	7,871
Log Likelihood	-3,782.002
Akaike Inf. Crit.	7,598.003
Pseudo R^2	0.316

*, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 9. Full regression model with all project types

Pitch videos and Facebook accounts are statistically significant at the 1% level. Interestingly, pitch videos increase the likelihood that projects are successful but Facebook accounts have the reverse effect and so negatively influence funding ($p < .01$), other factors being equal. Websites have no overall impact on projects' funding.

Regarding communication depth's measures, updates have a positive effect on funding at the 1% significance level. From the correlations (Table 14, Appendix), we observed that updates and successful funding were relatively high-correlated with a value of 0.30 indicating that the probability of successful funding rises with the number of project updates (Figure 4, Appendix). Regression results confirmed a positive and significant effect. Conversely, the effect of comments is not statistically different from zero.

For the number of Facebook friends and shares, as the variables increase, the probability of projects' success also raises at the 1% significance level, ceteris paribus. Lastly, regarding the profile page, the number of images seems to be not meaningful for funding and a large number of videos is associated with a decrease in the probability of successful funding ($p < .05$), everything else equal. The number of words in the description is a significant variable for funding ($p < .01$) and also the number of FAQs ($p < .10$); both variables enhance the likelihood that projects are successfully funded, ceteris paribus.

Considering the funding goal, our findings are in line with research from Galkiewicz (2018), where lower funding goals have a higher probability of successful funding. Moreover, shorter campaigns are better for funding. Successful projects are on average related to shorter durations due to the fact that longer cycles allow supporters to forget or back out (Chen et al., 2016; Kaartemo, 2017; Mollick, 2014). A shorter duration is beneficial in the sense that it gives people a perception of immediate necessity to mobilize funding (Kaartemo, 2017). Finally, offering more reward levels increases the chances of success.

4. RESULTS

Considering that the magnitude of the betas from probit models cannot be directly interpreted as the OLS coefficients due to the different scale, we calculated the marginal effects of explanatory variables (i.e. took the partial derivatives) on the response probability. Compared with the linear probability model, partial effects in probit are more difficult to summarize because scales depend on z (i.e. on all explanatory variables). One common practice to interpret regression coefficients' magnitude is to average the individual partial effects across the sample, leading to the Average Partial Effect (APE) or the Average Marginal Effect (AME). They show how the average probability of y changes with one unit change of x; marginal effects depend on all variables and correspond to the values at the means of the various x.

Marginal Effects:

	dF/dx	*Std. Err.*	*z*	*P > |z|*	
updates	0.027969	0.0013057	21.4202	0.0000	***
comments	-0.000019	0.0000152	-1.2573	0.2086	
facebook	-0.049912	0.0109980	-4.5381	0.0000	***
facebook_friends	0.000078	0.0000080	9.7449	0.0000	***
facebook_shares	0.000201	0.0000117	17.1687	0.0000	***
video	0.133430	0.0152080	8.7742	0.0000	***
website	0.014144	0.0102860	1.3750	0.1691	
n_faqs	0.003985	0.0023853	1.6707	0.0948	.
n_images	-0.000719	0.0005515	-1.3046	0.1920	
n_videos	-0.011823	0.0045894	-2.5762	0.0100	**
log(n_wordsdescr)	0.026744	0.0068311	3.9150	0.0001	***
rewards	0.007289	0.0010061	7.2450	0.0000	***
duration	-0.003452	0.0004751	-7.2655	0.0000	***
log(goal_us)	-0.151080	0.0033658	-44.8873	0.0000	***
creator_projcreated	0.004371	0.0025327	1.7260	0.0844	.
creator_projbacked	0.001040	0.0004208	2.4714	0.0135	*

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Table 10. Marginal Effects - Full regression model

Concerning communication breadth's variables, H1a argues that the pitch video has a positive and significant effect on the likelihood of successful funding. We fail to reject the hypothesis as the presence of a pitch video is relevant for funding ($\beta = 0.13343$, $p < .01$). Secondly, we argued that projects with a Facebook account have a higher probability of being successfully funded. We reject hypothesis H1b as projects that connect a Facebook account have lower success rates ($\beta = -0.049912$, $p < .01$). Interestingly, we also reject H1c that claims that projects

with a dedicated website external to Kickstarter are more likely to be successfully funded since the variable is not significant ($\beta = 0.014144$, $p > .10$). We could argue that a webpage may be more beneficial after the fundraising campaign as a channel to sell and promote the product, like an e-commerce site.

Concerning depth of communications, regarding H2, from our results we fail to reject H2a: projects' probability of successful funding is in fact positively affected by more updates ($\beta = 0.027969$, $p < .01$). Updates can act as a persuasion factor for Kickstarter participants by indicating that a project is being properly carried out at a specific speed and effort is put to regularly share the progress with the community. More backers might be motivated to participate when creators believe in the idea and are highly committed. Conversely, comments are not overall relevant ($\beta = -0.000019$, $p > .10$); thus, we reject H2b which argues that a higher number of comments tends to increase the probability that the project is successfully funded.

Subsequently, we fail to reject H3a hypothesizing that the number of Facebook shares raises the probability of successful funding ($\beta = 0.000201$, $p < .01$). Moreover, we also fail to reject H3b arguing that the larger the number of Facebook friends, the higher the likelihood of projects' successful funding (i.e. linear relationship). The variable is in fact positively related to funding ($\beta = 0.0000779$, $p < .01$).

Finally, by looking at the variables related to profile pages' details, which are linked to hypotheses H4a, H4b, H4c and H4d, the effects of the number of videos, words, images and FAQs vary widely and are not always associated with a higher successful funding probability.

H4a argues that a higher number of videos increases the probability that a project is successfully funded. We reject the hypothesis because the effect is overall negative ($\beta = -0.011823$, $p < .01$). Next, we fail to reject H4b stating that a higher number of words in the project description increases the probability of success ($\beta = 0.026744$, $p < .01$). The boxplot for the project description length in the number of words (Figure 3, Appendix) also shows that successfully-funded projects have a bit lengthier description than unsuccessfully-funded projects. Generally, the number of words in the project description and FAQs can serve the purpose of informing and clarifying potential backers' doubts about a product. Thus, we also fail to reject hypothesis H4d arguing that a higher number of FAQ sections increases the likelihood of successful funding ($\beta = 0.003985$, $p < .10$).

Finally, H4c argues that a higher number of images is beneficial for funding. The hypothesis is rejected ($\beta = -0.000719$, $p > .10$) as the effect of images is not statistically significant.

For a better understanding, we then investigated how explanatory variables differently affected funding by project type and so we further regressed the probit model by category.

Results of the regression

	Dependent variable:				
	Funding				
Model	Film & Video	Music	Games	Design	Technology
Explanatory variables:					
video	0.491***	0.614***	0.088	0.187	0.578**
	(0.107)	(0.105)	(0.139)	(0.149)	(0.233)
website	-0.056	0.018	-0.096	0.152	0.141
	(0.061)	(0.082)	(0.102)	(0.105)	(0.145)
facebook	-0.204***	-0.068	-0.152	-0.220*	0.017
	(0.072)	(0.087)	(0.109)	(0.122)	(0.143)
updates	0.087***	0.119***	0.111***	0.156***	0.106***
	(0.009)	(0.015)	(0.010)	(0.017)	(0.019)
comments	0.035***	0.083***	-0.0001**	0.022***	0.004**
	(0.008)	(0.018)	(0.00004)	(0.003)	(0.002)
facebook_friends	0.0003***	0.0001	0.0003*	0.001***	0.0002
	(0.0001)	(0.00005)	(0.0001)	(0.0002)	(0.0001)
facebook_shares	0.0003***	0.001***	0.0005***	0.001***	0.0005***
	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)
n_faqs	-0.069***	-0.062	0.038**	-0.003	0.019
	(0.026)	(0.042)	(0.018)	(0.026)	(0.020)
n_images	-0.0002	-0.047***	0.007	-0.005	0.020***
	(0.005)	(0.010)	(0.004)	(0.005)	(0.006)
n_videos	-0.151***	-0.035	0.035	-0.065	0.054
	(0.035)	(0.033)	(0.039)	(0.079)	(0.066)
log(n_wordsdescr)	0.308***	0.065	0.208***	0.235***	0.066
	(0.044)	(0.057)	(0.067)	(0.079)	(0.107)
Control variables:					
rewards	0.007	0.046***	0.029***	0.020*	0.021
	(0.007)	(0.008)	(0.009)	(0.011)	(0.017)
duration	-0.019***	-0.012***	-0.018***	-0.0002	-0.009
	(0.003)	(0.003)	(0.006)	(0.006)	(0.007)
log(goal_us)	-0.532***	-0.542***	-0.610***	-0.650***	-0.655***
	(0.027)	(0.039)	(0.042)	(0.052)	(0.060)
creator_projcreated	-0.058***	-0.001	0.061***	-0.031	0.108*
	(0.022)	(0.013)	(0.014)	(0.037)	(0.063)
creator_projbacked	0.011***	0.005	0.004**	0.004	0.012**
	(0.004)	(0.010)	(0.002)	(0.004)	(0.006)
Constant	2.650***	3.301***	2.893***	2.684***	3.590***
	(0.303)	(0.396)	(0.471)	(0.534)	(0.763)

Observations	2,651	2,007	1,330	1,160	723
Log Likelihood	-1,302.817	-915.564	-480.289	-433.919	-272.414
Akaike Inf. Crit.	2,693.633	1,865.127	994.577	901.839	578.828
Chi2	1,091.88	796.72	917.41	775.19	458.64
Pseudo R^2	0.453	0.456	0.665	0.650	0.635

$*$, $**$, and $***$ indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 11. Regression of the probit model by category.

From the regression outcomes of communication breadth's variables, the pitch video is an important variable to increase the likelihood of successful funding but this is not consistent across all project categories. Interestingly, Games and Design projects do not seem to draw value from exhibiting the pitch video ($p > .10$) which instead has a strong positive impact on the funding performance of the other categories at the 1% and 5% significance levels, holding other factors constant. Conversely, a project-related website outside the crowdfunding platform is not influential for successful funding of all project types ($p > .10$) and having a Facebook account connected to a Kickstarter campaign has a negative effect on the likelihood of success for Film & Video ($p < .01$) and Design ($p < .10$), ceteris paribus. Afterwards, the presence on Facebook is not relevant for projects in Music, Games and Technology to increase success rates ($p > .10$).

With regard to the communication measures related to depth, updates are equally important for all five categories at the 1% significance level; the coefficients are all positive, meaning that an increase in the number of updates raises the likelihood that projects are successfully funded, other factors being equal. Contrary to the general regression, comments have now a significant impact on the probability of success; comments constitute a sort of unbiased reviews of people that are impartial and neutral to the creator. A high engagement of backers in terms of comments can constitute a content marketing technique, that is user-generated brand content (Tsai & Men, 2013), and may stimulate herd behaviour by leading one individual to mimic the actions of other participants (Alkemade & Castaldi, 2005). Comments give the impression that the community is active and engaged and are an opportunity for creators to monitor how people are talking about the project (Scott, 2009).

All categories, with the exception of Games, are positively affected by the number of comments at the 1% significance level, ceteris paribus. For Games, the effect is slightly negative and significant at the 5% level; the negative impact can derive from omitted characteristics, which were not investigated in our analysis, that, for example, are positively associated to funding but negatively correlated with comments. With regard to the variable's significance by project type

and not overall, we might suppose that comments significantly affect funding of project categories individually but, in the large dataset, the impact is not powerful. One purpose of regression is to minimize the distances between data points and the regression line; when the number of obervations is larger, distances might be smaller and thus less considerable for all units as opposed to individual groups. Later, we will test the magnitude of these effects.

Considering social network engagement, a higher number of Facebook friends is positive and significant in Film & Video, Games and Design at the 1% and 10% significance levels, holding everything else constant. Conversely, Facebook shares have an overall positive impact on funding at the 1% significance level.

In Kickstarter profile pages, a higher percentage of words used for describing the project positively affects the funding performance for Film & Video, Games and Design products at the 1% significance level. A larger number of images in the page is related to a higher success probability for Technology projects, while for Music the impact on funding is negative at the 1% significance level. This seems reasonable as music mostly involves auditory features and thus people enjoy mostly listening than viewing. Conversely, the number of videos is significant only for Film & Video projects with a negative effect on funding (1% significance level).

Concerning control variables, as assumed, a higher number of reward levels offered to potential funders positively affects funding as more pricing options are given which could match funders' expectations and willingness to pay. However, the effect is meaningful only for Music, Games ($p < .01$) and Design projects ($p < .10$). Next, longer funding cycles are detrimental for projects' likelihood of successful funding in Film & Video, Music and Games at the 1% significance level; this highlights that longer campaigns in these categories do not have a higher probability of being successful if potential funders have more time to back, holding other factors constant. Conversely, the effect of duration for Design and Technology products is not statistically different from zero.

The funding goal significantly influences the funding outcome of all projects in a negative manner at the 1% significance level: the higher the target in $, the lower the probability that projects are successfully funded, all other factors constant. The number of previously created projects is significant at the 1% level for Film & Video and Games and at the 10% level for Technology. However, in Film & Video, the effect is negative. For these three categories, the number of previously backed projects is also influential but positive for funding.

The Nagelkerke's Pseudo R^2 was computed in order to test what is the portion of variance in y explained by the model independent variables; it is one R-Squared measure for logistic functions and it has a [0,1] scale (Nagelkerke, 1991; IBM, 2012). Our results show that explanatory variables account for 45.3% of the variability in the funding performance of Film & Video, for 45.6% in Music, 66.5% in Games, 65.0% in Design and 63.5% in Technology. For the general model, explanatory variables accounted for 31.6% of the variation in funding.

Successively, to further investigate variables' effects by project type, we computed the Average Marginal Effects. *Table 12* below shows the effects of communication breadth's measures.

Marginal Effects:						
		Film & Video	Music	Games	Design	Technology
video	*dF/dx*	0.14098*** (0.030417)	0.17416*** (0.03047)	0.018204 (0.028988)	0.039909 (0.031426)	0.119000** (0.044274)
	z	4.6349	5.7157	0.6280	1.2699	2.6879
	P > |*z*|	0.0000	0.0000	0.5300	0.2041	0.0072
website	*dF/dx*	-0.015821 (0.017312)	0.004724 (0.021903)	-0.019877 (0.021186)	0.032829 (0.02267)	0.03039 (0.030982)
	z	-0.9139	0.2157	-0.9382	1.4481	0.9809
	P > |*z*|	0.3608	0.8292	0.3481	0.1476	0.3266
facebook	*dF/dx*	-0.056916** (0.019849)	-0.017877 (0.022809)	-0.031516 (0.022649)	-0.04743 . (0.026101)	0.0037136 (0.031106)
	z	-2.8674	-0.7838	-1.3915	-1.8172	0.1194
	P > |*z*|	0.0041	0.4332	0.1641	0.0692	0.9050
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						

Table 12. Marginal Effects – Communication breadth's variables.

The pitch video is the variable with the largest effect on y: Film & Video, Music and Technology projects can in fact increase the likelihood of being successfully funded by approx. 14%, 17% and 12% ($p < .01$) respectively, holding other factors fixed. Afterwards, the effect of websites on the likelihood of successful funding is not statistically different from zero for all categories. Facebook accounts are statistically significant only for Film & Video and Design projects at the 1% and 10% significance levels but the impact on funding is negative. A Facebook account is shown to reduce the likelihood of successful funding for Film & Video projects by 5.7% ($p < .01$) and for Design by 4.7% at the 10% significance level, ceteris paribus. One possible explanation might concern the number of connections of the account. As Moritz, Block (2016) and Mollick (2014) discussed, Facebook profiles with few connections (i.e. less than 500 friends) decrease the probability of campaigns' success and only large networks are

associated with successful funding. In Film & Video, 61% of projects have less than 500 Facebook friends connected and, for Design, the same rate is 79%. Additionally, information fatigue may occur when too much information is shared with the consumer from a wide array of media sources.

Next, marginal effects for the variables related to communicaton depth were calculated.

Marginal Effects:						
		Film & Video	*Music*	*Games*	*Design*	*Technology*
updates	*dF/dx*	0.024629*** (0.0023924)	0.031502*** (0.0038697)	0.023109*** (0.0016711)	0.033685*** (0.0033499)	0.023051*** (0.0040022)
	z	10.2945	8.1407	13.8281	10.0556	5.7595
	P > |z|	0.0000	0.0000	0.0000	0.0000	0.0000
comments	*dF/dx*	0.0099744*** (0.0022668)	0.022099*** (0.0047047)	-0.000019589* (0.0000080314)	-0.0048098*** (0.00068073)	0.00085615* (0.00039066)
	z	4.4002	4.6973	-2.4390	7.0656	2.1915
	P > |z|	0.0000	0.0000	0.0147	0.0000	0.0284
facebook_friends	*dF/dx*	0.000079711*** (0.000014174)	0.000016353 (0.000012152)	0.000052025 . (0.00002976)	0.0001369*** (0.000032987)	0.000047294 (0.000032218)
	z	5.6237	1.3457	1.7482	4.1502	1.4679
	P > |z|	0.0000	0.1784	0.0804	0.0000	0.1421
facebook_shares	*dF/dx*	0.000076279*** (0.000014219)	0.00034954*** (0.000036723)	0.00010144*** (0.00001997)	0.00021271*** (0.000031819)	0.00009998*** (0.000017425)
	z	5.3644	9.5182	5.0795	6.6850	5.7379
	P > |z|	0.0000	0.0000	0.0000	0.0000	0.0000
n_faqs	*dF/dx*	-0.019496** (0.0073173)	-0.016517 (0.011155)	0.0079008* (0.0037351)	-0.000563 (0.0055824)	0.0040506 (0.0043833)
	z	-2.6643	-1.4807	2.1153	-0.1009	0.9241
	P > |z|	0.0077	0.1387	0.0344	0.9197	0.3554
n_images	*dF/dx*	-0.000058114 (0.0015051)	-0.012351*** (0.0027205)	0.0014185 (0.00090512)	-0.0011502 (0.001133)	0.0043308*** (0.0012525)
	z	-0.0386	-4.5400	1.5671	-1.0152	3.4577
	P > |z|	0.9692	0.0000	0.1171	0.3100	0.0005
n_videos	*dF/dx*	-0.042521*** (0.0098281)	-0.0092942 (0.0086487)	0.0072327 (0.0081785)	-0.014103 (0.001133)	0.011861 (0.011745)
	z	-4.3265	-1.0746	0.8844	-0.8273	1.0099
	P > |z|	0.0000	0.2825	0.3765	0.4081	0.3125
log(n_wordsdescr)	*dF/dx*	0.087028*** (0.01215)	0.017117 (0.015149)	0.043197** (0.013861)	0.050823** (0.001133)	0.014448 (0.023274)
	z	7.1626	1.1299	3.1164	3.0157	0.6208
	P > |z|	0.0000	0.2585	0.0018	0.0026	0.5347
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						

Table 13. Marginal Effects – Communication depth's variables.

Results show that updates and comments are statistically significant variables for all categories. For Film & Video, an increase in one unit in the number of comments will increase the average likelihood of successful funding by around 0.9974% ($p < .01$), ceteris paribus; updates raise the

probability of success by around 2.5% ($p < .01$), other factors being equal. In Music projects, both coefficents also have a p-value less than 0.01, meaning that they are significantly different from 0 at the 1% significance level. Increasing the number of updates and comments by one will increase the likelihood of successful funding by 3.2% and 2.2% respectively, other factors being equal.

With regard to Games, a one-unit increase in the number of updates rises the average probability of success by around 2.3% at the 1% significance level, other factors being equal. Comments, have a negative effect on funding with a one-unit increase decreasing the probability of success by 0.002% ($p < .05$). Conversely, for Design projects, both comments and updates are beneficial: one more unit increases the probability of successful funding by 0.5% and 3.4% respectively ($p < .01$), ceteris paribus. In the last category, Technology, an increase by one in updates will increase the probability of success by around 2.3% at the 1% significance level, holding other factors constant. The number of comments is significant at the 5% level; one unit increase enhances the probability of successful funding by approx. 0.1%, ceteris paribus.

With regard to social media engagement, the number of friends and shares in Film & Video projects are statistically significant at the 1% level; an increase in one unit of Facebook friends and shares raise the likelihood of successful funding by around 0.01%, other factors being equal. For Music, the number of shares is significant at the 1% level raising the probability of success by 0.04%, ceteris paribus. Afterwards, Facebook friends and shares have a significant effect on y for Games at the 10% and 1% significance levels respectively; one more friends or share raises the likelihood of success by approx. 0.01%, everything else equal. In Design, the number of friends and shares also have positive effects: one more friend is associated with a 0.01% increase in the probability of successful funding and one more share raises the success rate by 0.02%, ceteris paribus. Both coefficients are different from zero at the 1% significance level. In the last category, Technology, the number of Facebook shares is significant at the 1% level: one unit increase is associated with a 0.01% higher chance of reaching the funding goal, everything else held fixed.

Concerning profile pages' details, more videos and FAQ sections published are harmful for funding of Film & Video; adding one more video or FAQ decreases the probability of success by around 4.3% and 2% ($p < .01$), ceteris paribus. Next, a 10% increase in the number of words of the project description raises the likelihood of successful funding by 0.87 points on a [0,1]

scale at the 1% significance level, other factors held constant. With regard to n_images, the impact on the funding performance is not significantly different from zero.

For Music and Technology projects, the number of images is the only measure on the Kickstarter profile that is statistically significant. For Music, successful funding is less likely by 1.2351% ($p < .01$) when the number of images increases by one, ceteris paribus; in this category, images can't in fact communicate the audio dimension. In Technology projects, one more image is associated with a 0.4% ($p < .01$) higher likelihood of success, holding other factors constant.

For Games, only the number of words in the project description and FAQs have significant effects: a 10% increase in the word count and one more FAQ increase the probability of successful funding by 0.43 on a [0,1] scale and 0.8% at the 1% and 5% significance levels, ceteris paribus.

For Design, the length of the project description in the number of words has a positive impact on successful funding with a 10 % increase raising the chances of success by around 0.5 points at the 1% significance level, ceteris paribus.

5. DISCUSSION

5.1. Main conclusions

In the 21st century, a new form of entrepreneurial financing has expanded worldwide. We used public data from Kickstarter to understand marketing variables as influencers of successful funding of projects. Few campaigns achieve the funding goals; in fact, one in three projects fails (Kickstarter, 2019). Extant research analysed success factors of fundraising campaigns through a qualitative lens (Mollick, 2014; Schwienbacher & Larralde, 2010; Galkiewicz; 2018; Kaartemo, 2017) and we add to the understanding of the role of marketing variables by quantifying their importance in funded campaigns on crowdfunding platforms. As Keller (2003) has argued, marketing activities should be accurately combined so to create the desired consumer knowledge structure about a brand.

Overall, our results indicate that both the breadth and the depth of communications are important in dictating the success of the campaigns. Nevertheless, depth of communications was overall more significant.

5.1.1. Depth of communication

Updates and comments help attract backers' interest and engage them in the project increasing the likelihood of successful funding. Both creators and funders want to feel part of a community of like-minded entrepreneurs; in particular, backers enjoy the sense of belongingness with founders and other backers (Gerber and Hui, 2013). Updates about project progression and chatting with people involved are strong motivation factors. Most successful campaigns put continuous effort in communication activities to enlarge their direct and indirect network of acquaintances; creators post updates throughout the whole fundraising cycle and comments show that the community is actively involved. Namely, backers are intrinsically motivated by the desire of affiliation with the community and, when feeling included in the project's progression, encourage others to participate (Chen et al., 2016).

In terms of social network engagement, Facebook shares are more meaningful than friends. Nowadays, in the era of social networks, on which people with a large number of friends or followers can earn a living by promoting a brand through photos and videos, people tend to connect with everyone to establish a social identity. However, this may translate into a lower share of "true friends" that are likely to support your project and share your campaign, thus influencing the likelihood of successful funding. As Burke and Kraut (2013) have stated, social

bonds differ in strength and intensity; some Facebook friends are mere passive members who just like to check offers, discounts or events in the page and do not feel the desire to belong to the community and support the project.

Social support derives from friends with which we have an intimate attachment and mutual relation; they are built and maintained with time and effort (Kim & Lee, 2011). Marlow and colleagues (2009) showed that Facebook members are closely connected with no more than 3% of Facebook friends. By checking the average number of friends and shares by category, we saw that the number of friends was generally lower than the number of shares; this highlights that a strong participation or engagement of the community is not reflected in a big social network size. Having a large number of social connections on Facebook is not the same as having fewer friends with whom you have a stronger tie and who are committed to your project.

Lastly, detailed profile pages based only on text do not determine the success of campaigns. As previously discussed, product-oriented and art-oriented projects have different functional, visual and experiential benefits. A thorough description in text form (i.e. number of words and FAQs) is good for describing projects' purpose, objectives, challenges and rewards in detail (e.g. for Games and Design). In order to catch the attention of backers, a presentation page should then include visual elements, like pictures (e.g. for Technology), to increase information value. Generally, graphic elements are integrated to text because they "decorate" a project presentation and help appeal visitors' attention; images are especially helpful for products with visual stimuli and videos or audio effects can be easily processed by viewers. The Kickstarter Creator Handbook (2019) mentions that images and videos bring people inside the story. But our results point to caution about the number of videos included. A large number of videos is not meaningful to reach the pledge and is even negative for Film & Video.

5.1.2. Breadth of communication

Results indicate that the power of social media on funding is low. A Facebook account was significant but negatively associated with Film & Video ($\beta = -0.056916$, $p < .01$) and Design projects ($\beta = -0.047430$, $p < .10$), whose social network sizes were small. This can highlight that a project with no Facebook account has higher success rates than one with a low number of social connections (Mollick, 2014). Burke and Kraut (2013) also argued that social media might not be as effective as direct emails or communication and they can lead to information overload. Many individuals are not receptive of much information shared on their home page; in particular, information fatigue can occur when information is not targeted nor requested. The

consumers should be reached out at the right time and place with the right message that attracts their attention and lead them to visit the website and be inspired to become promoters. Project initiators should develop some knowledge about the target consumer and social marketing skills in order to involve communities online and increase backers' acquisition. As argued, some businesses are using web communication methods just to predict demand and not to stimulate participation of customers in the product value creation (Chan & Lee, 2004; Dahan & Hauser, 2002).

Afterwards, websites are not relevant. According to the Long Tail theory of marketing, showing that the internet has enabled the development of niche markets with lower demand, new products or services targeted to narrower consumer segments should be marketed differently than mainstream commercial products. Instead of a one-fits-all website, distinct micro-sites, like landing pages that target specific demographic groups, should be implemented (Scott, 2009).

Of critical importance comes the pitch video; the pitch video is a labour-saving way to gain information and acts as a sort of cue of the project quality (Belleflamme et al., 2014), particularly relevant for Film & Video, Music and Technology. Videos have communicative power to share information in an appealing, interesting and friendly manner. The presentation video is a mean to show the uniqueness of a new product and to introduce the founder. Moreover, emotional appeals can be involved to make communication with the potential backers even more effective (Huang, 1998).

5.2. Academic implications

Our study aims at complementing extant literature on crowdfunding success; although many studies are focused on the important success elements of crowdfunding initiatives, many queries still need to be addressed by academic research. Among all, it is still ambiguous how many details creators should share for a successful fundraising campaign (Kaartemo, 2017). Empirically, our paper integrate existing research on crowdfunding (Moritz and Block, 2016; Du et al., 2015; Zvilichovsky et al., 2015). Our purpose is to provide a comprehensive understanding of the marketing factors differently influencing the funding outcome of project categories on Kickstarter in line with previous studies from Mollick (2013, 2014a, 2014b, 2015 and 2016).

Our work shows that the importance of marketing variables are contingent upon project type, revealing that the effect is not universal but contingent upon the nature of the project; we add to the understanding of crowdfund initiatives by identifying contingencies on their success. Research has mostly focused on determinants of crowfunding success for all projects or investigated categories of the factors influencing funding (Kaartemo, 2017); our study is one of the firsts looking to crowdfunding campaigns from a contextual perspective by project type. Our study could stimulate and complement extant debate (Blackburn & Kovalainen, 2009; De Buysere et al., 2012; Zahra & Dess, 2001) about entrepreneurship and resource gathering. We expand previous research (Belleflamme et al., 2014) by investigating the effects of different communication measures in terms of breadth and depth. We apply entrepreneurship and marketing theory in the context of resource gathering pratices and promotion strategies of new products that relate to crowdfunding and projects' success (Huang, 1998; Borst et al., 2018; Mollick, 2013). Furthermore, we contribute to the literature on end user entreprenurship (Shah & Tripsas, 2007). In this regard, we also analyse socio-psychological aspects of crowdfunding platforms as means to satisfy people's social needs and sources of motivation to engage founders and fund-seekers in virtual communities of entrepreneurs.

5.3. Managerial implications

From a practical viewpoint, the findings of our research have implications for creators and crowdfunding platform managers. Entrepreneurs that want to initiate a project on a reward-based crowdfunding platform could use our results to increase the success rate of their project. Our insigths into the effects of marketing measures on funding explain if and how common marketing and communication actions of founders influence their capacity to obtain financing from the crowd. Creators can check which communication measures are more relevant for their product type and improve promotion activities. Common to all entrepreneurs is the role of the updates, comments and Facebook shares to increase the chances of successful funding. Conversely, the pitch video and other profile elements, such as images, FAQs and videos, have inconsistent effects among categories. The pitch video is particularly important for Film & Video, Music and Technology projects. A detailed project description in terms of words is significant only for Film & Video, Games and Design projects; for Technology projects, images are instead more powerful than text. Afterwards, in Film & Video projects, too many videos are associated with a decrease in the probability of success. Surprisingly, websites are not worth to spend much effort on as they do not affect the likelihood of funding of any project category

and Facebook accounts do either have a zero impact or negative effects if with few connections. Namely, engaging people on social media is more beneficial for funding: the likelihood of success increases when the number of Facebook friends rises; this is particularly relevant for Film & Video, Games and Design.

In conclusion, the ultimate goal of the paper is to serve as a potential guide for crowdfunding platform managers providing suggestions about the types of platform aspects that help grow the community and build a competitive advantage. Platform managers should in fact develop tools to boost the sense of belongingness that motivates entrepreneurs to create a project and backers to participate and invest in campaigns. Examples could be the Instagram polling feature allowing members to ask questions, vote and receive answers in real-time through stories; creators can so engage backers by asking interesting questions. Next, other tools could be live chats, pop-ups or features allowing backers to contribute by, for instance, sharing pictures, videos or stories related to the project on Kickstarter. A notification system could also be implemented to promptly inform backers when project changes occur, such as rewards. These platform features enable founders and funders to enjoy the community benefits of participation.

6. LIMITATIONS AND FUTURE RESEARCH

Certainly, many opportunities for further empirical research and model testing exist. We recognize that this framework may have been built on some incomplete assumptions considering possible flawed-logical arguments that may be proven to be inconsistent with future data collected. Nevertheless, this framework only attempts at creating a systematic body of information and it serves just as a starting point for future research.

Several areas are worth being explored. It is relevant to point out that the current study is solely focused on one among the multitude of crowdfunding platforms, Kickstarter. Findings may not be generalized to other platforms; for this reason, future research comparing the results on several crowdfunding platforms, which are also not reward-based, can provide a more complete and consistent body of knowledge related to the investigated phenomenon. Future research could also investigate the impact of marketing factors on funding not by project but rather by model of platform investigating which techniques for raising funds differs among reward-based, equity-based, donation-based and lending-based platforms.

Furthermore, for the variable country, we noticed that some project types from Canada, the UK, the USA and the Netherlands had a higher likelihood of reaching the funding goal; this may be due to specific country characteristics and variables, such as the establishment of crowdfunding platforms and government support, that could also be deeply investigated. Findings could be validated by involving other project categories or a larger set of explanatory variables in the sample. A deeper investigation on the differences of campaigns' characteristics existing between countries would enrich our understanding of crowdfunding. Namely, the probability of successful funding can vary among projects in relation to a country's specific economic, social, legal, political and technological factors.

Finally, it would be important to investigate the role of fund-seekers characteristics in relation to campaign performance. Namely, factors, such as gender, age demographics, education and employment status, might clearly influence the success of a project. Additionally, considering the two dimensions of communication of breadth and depth, the level of technology innovation and expertise of backers might also influence how much marketing messages they need.

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8. APPENDIX

TABLES

Table 5. Summary statistics of the sample main numerical variables

Variable	Mean	SD	Min	Median	Max
goal_us	38,336.970	1,138,767.000	75.000	6,500.000	100,000,000.000
updates	4,247.000	6,392.000	0.000	2.000	90.000
comments	68,093.000	803.836	0.000	1.000	30,341.000
rewards	10,622.000	5.943	2.000	10.000	131.000
pledged_us	16,652.150	108,404.300	1.000	2,942.000	6,224,955.000
backers	202.535	836.438	1.000	45.000	35,383.000
duration	31.830	10.021	3.000	30.000	60.000
facebook_friends	490.126	734.389	0.000	238.000	4,885.000
facebook_shares	504.677	3,454.875	0.000	136.000	260,505.000
creator_projcreated	1.716	3,532.000	1.000	1.000	111.000
creator_projbacked	5.576	20.470	0.000	1.000	1,205.000
n_videos	0.356	1.102	0.000	0.000	24.000
n_images	8.491	11.872	0.000	4.000	166.000
n_wordsdescr	766.423	645.379	3.000	573.000	5,152.000
n_faqs	0.917	2.484	0.000	0.000	47.000

Table 14. Correlation table of main numerical variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 funding	1.00																
2 updates	0.30	1.00															
3 comments	0.06	0.31	1.00														
4 duration	-0.16	0.04	-0.01	1.00													
5 facebook_friends	0.14	0.01	-0.03	-0.01	1.00												
6 facebook_shares	0.08	0.11	0.12	0.01	0.03	1.00											
7 n_faqs	0.10	0.34	0.24	0.05	-0.06	0.18	1.00										
8 n_videos	0.06	0.22	0.12	0.05	0.03	0.05	0.18	1.00									
9 n_images	0.08	0.46	0.23	0.06	-0.11	0.08	0.37	0.18	1.00								
10 n_wordsdescr	0.05	0.38	0.14	0.06	-0.07	0.08	0.32	0.22	0.57	1.00							
11 rewards	0.14	0.32	0.06	0.04	0.11	0.15	0.16	0.13	0.30	0.34	1.00						
12 facebook	0.03	0.02	-0.04	-0.01	0.47	-0.03	-0.05	0.02	-0.06	-0.04	0.03	1.00					
13 video	0.10	0.11	0.02	-0.01	0.06	0.04	0.07	0.05	0.10	0.15	0.18	0.06	1.00				
14 website	0.03	0.07	0.03	0.08	0.05	0.02	0.04	0.06	0.04	0.06	0.07	0.01	0.09	1.00			
15 creator_projcreated	0.07	0.10	0.04	-0.07	-0.01	-0.01	0.01	0.05	0.11	0.05	-0.02	-0.06	-0.04	-0.04	1.00		
16 creator_projbacked	0.11	0.18	0.05	-0.04	0.02	0.02	0.08	0.06	0.17	0.14	0.06	0.03	-0.01	-0.01	0.32	1.00	
17 goal_us	-0.03	0.00	0.01	0.01	-0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00

FIGURES

Figure 1. Example: structure of a standard Kickstarter project's profile page

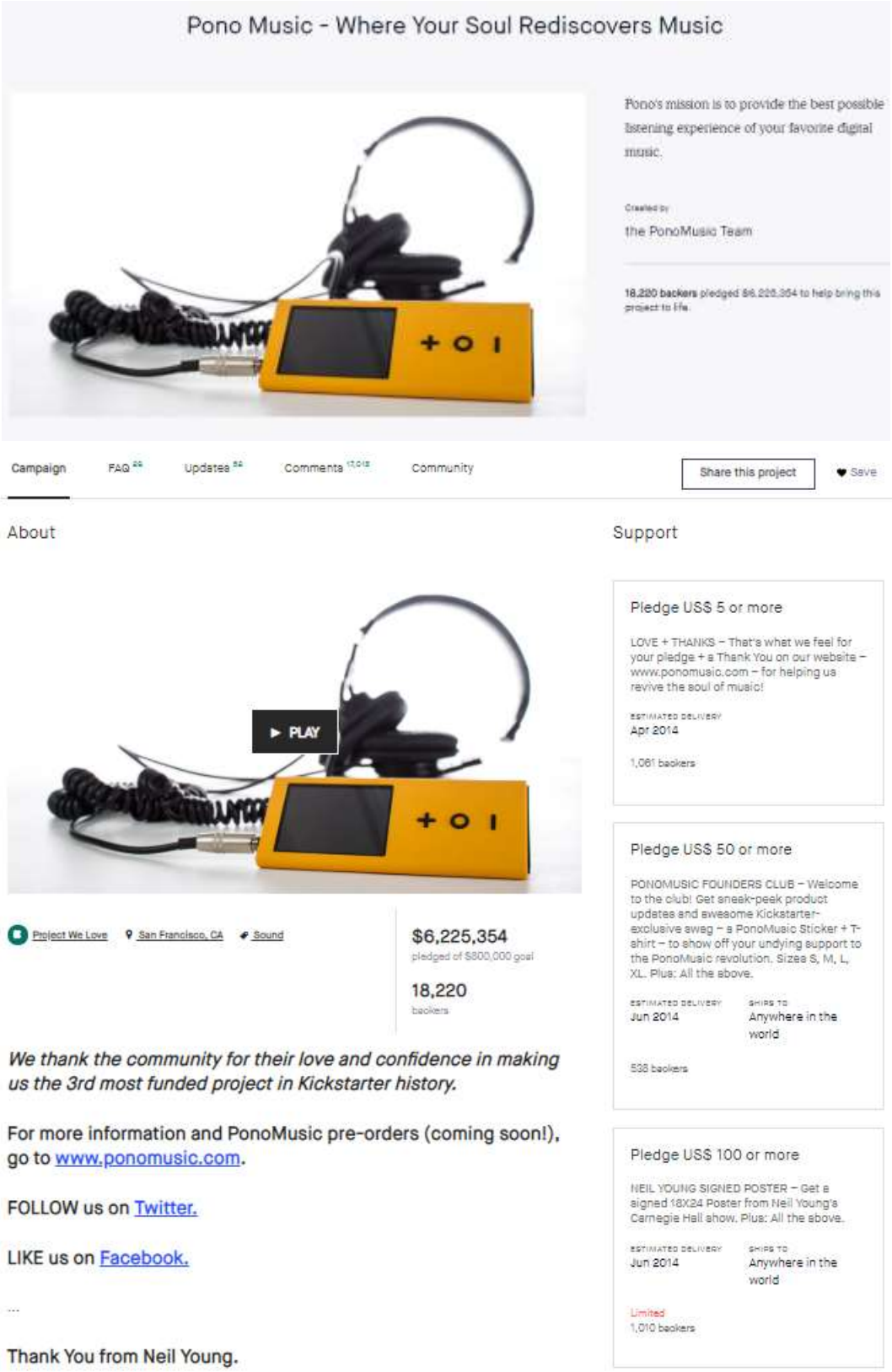

Figure 2. Distribution of the funding goals of projects in US dollars and their logarithms

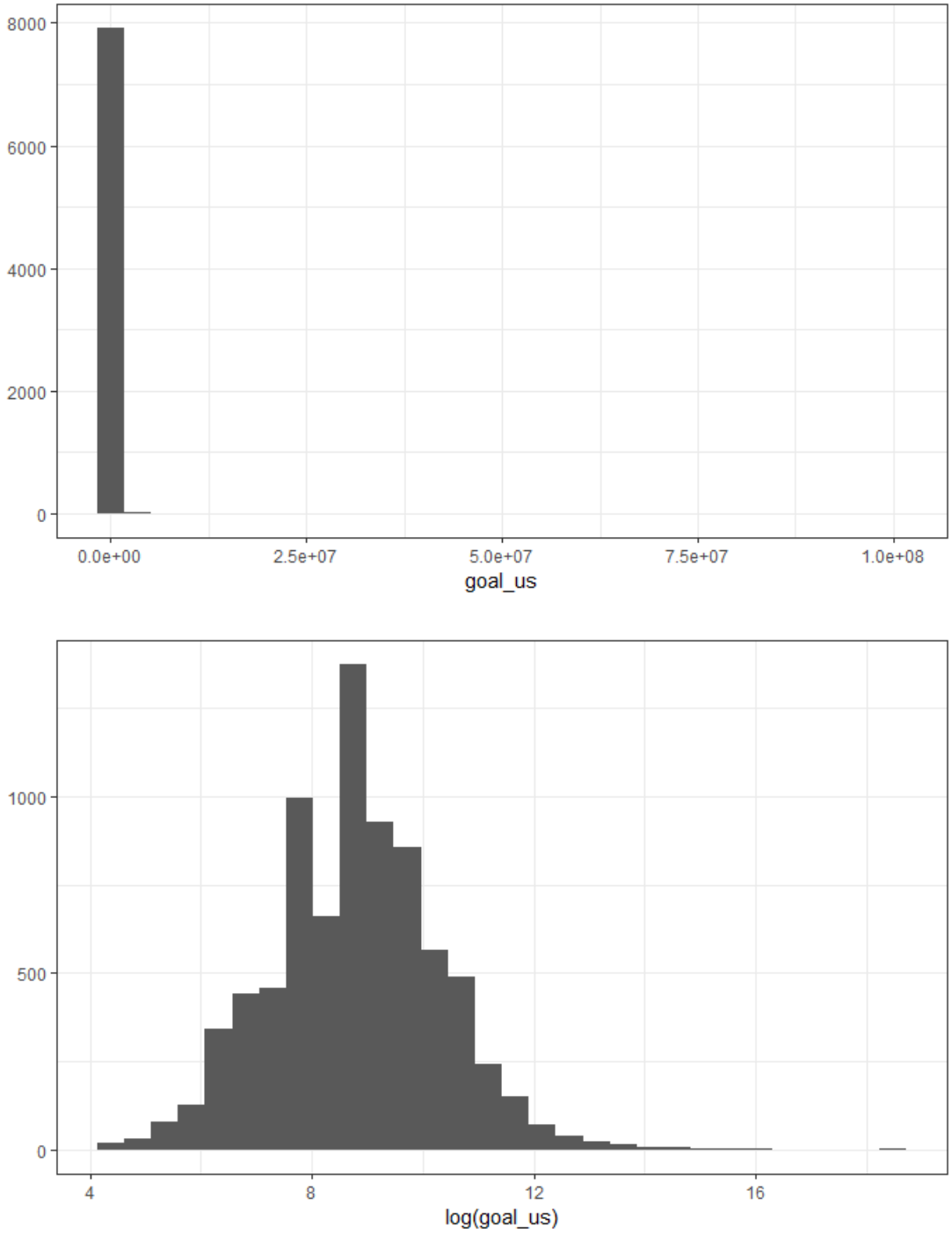

Figure 3: Boxplot about project description length in number of words

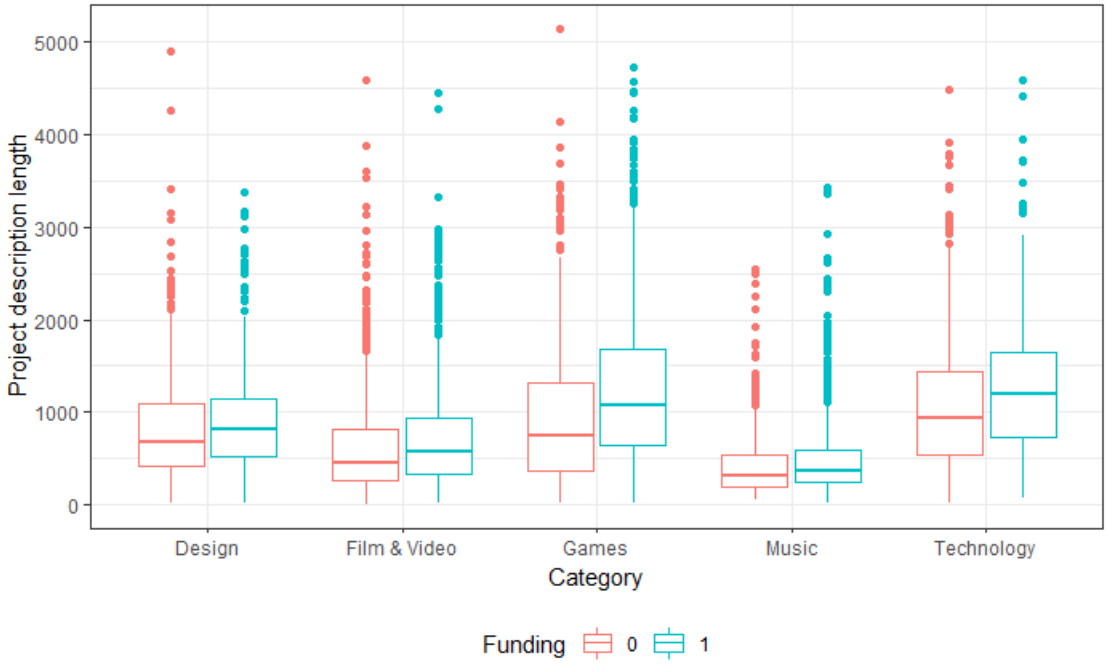

Figure 4: Scatterplot: number of updates and amount of funds raised

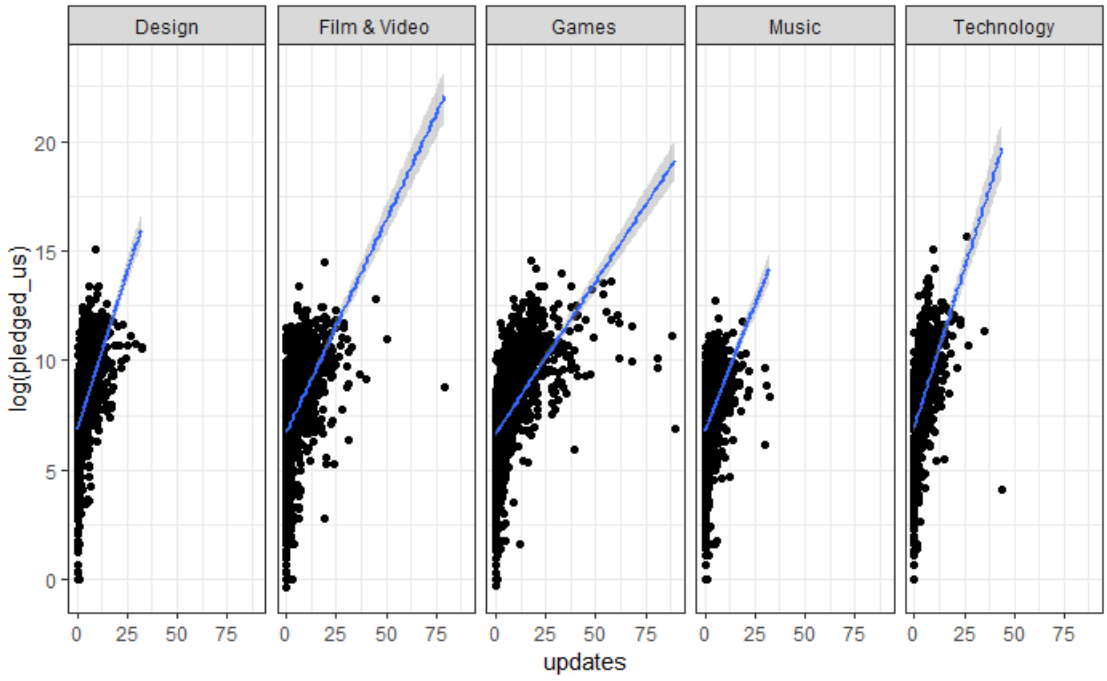

Figure 5: Predicted probabilities of funding, Film & Video