Does the crowd mean business? : An analysis of rewards-based crowdfunding as a source of finance for start-ups and small businesses

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ABSTRACT

Rewards-based crowdfunding has been widely heralded as a novel mechanism by which start-ups can access seed funding, theoretically allowing the circumvention of traditional intermediaries such as banks and venture capitalists. Our study makes a unique contribution to the emerging research on this topic by presenting detailed empirical evidence on rewards-based crowdfunding, with a particular focus on the performance of business-related campaigns relative to those in other funding categories. Our findings suggest that rewards-based crowdfunding is highly inequitably distributed and that success is concentrated within a relatively small number of platforms and campaigns. Evidence from a series of multiple regression analyses also suggests that crowdfunding campaigns explicitly related to business-perform relatively poorly compared with those in other categories; particularly those in creative areas such as music and dance. These findings call into question the extent to which rewards-based crowdfunding really is a means by which significant numbers of start-ups can bridge gaps in the funding escalator.

Keywords: Crowdfunding; Online; Finance; Start-ups

1. INTRODUCTION

Start-ups and small businesses represent a vital engine for innovation and growth in many economies (Beck & Demirgüç-Kunt, 2008; Agénor & Canuto, 2014; Brancati, 2015). Despite this, a number of obstacles and market imperfections, such as information asymmetry or transaction and monitoring costs, significantly limit access to finance for start-ups and entrepreneurs lacking necessary collateral, credit histories, reputation and connections (Beck *et al.* 2007). Small firms therefore often have to rely on a range of different sources of finance to facilitate their operational activities and growth opportunities, including borrowing from family and friends, bank loans, business angels, venture capital and more (Berger & Udell, 2006). This problem is compounded in the case of early-stage or seed funding, where venture capitalists, angels and larger financial institutions are likely to incur prohibitively high administrative and enforcement costs given the typical monetary sums involved in each transaction (Korosteleva & Mickiewicz, 2011). Access to finance is therefore widely recognised as a key challenge confronting many start-ups and small businesses (Kortum & Lerner, 2000; Gompers & Lerner, 2004; Beck & Demirguc-Kunt, 2006; Croce *et al*., 2015).

Against this backdrop, a novel model for fundraising known as reward-based crowdfunding has been widely heralded as a means by which start-ups might bridge the significant gaps that exist in the funding escalator (Brutton *et al*., 2015; James, 2014; among others). Rewards-based crowdfunding involves project founders offering a series of material incentives to contributors, the value of which typically increases in line with the amount of their contributions (Gerber *et al*., 2012; Tomczack & Brem, 2013). Low barriers to participation for both funders and founders are recognised as key advantages of reward-based crowdfunding, given that practically anyone with an Internet connection can use the approach to both raise

and contribute funds (Kim & Hann, 2013). Furthermore, the practice has been said to democratise access to finance given that each funder can make a contribution with a relatively small amount of money (Drury & Stott, 2011). Altogether, rewards-based crowdfunding is increasingly being regarded as a mainstream option for those seeking funding for their businesses (Young, 2012; Rossi, 2014).

Given these expectations, it is surprising that very little empirical research has been undertaken into the extent to which rewards-based crowdfunding really does provide financial support for start-ups and small businesses relative to other types of activity such as creative and cultural projects. While it is generally claimed that crowdfunding campaigns enjoy higher rates of success compared with traditional sources of finance (Agrawal *et al.*, 2013), studies investigating the success or failure of crowdfunding such as Mollick (2014) tend to be based only upon projects run on a single online platform (Kickstarter), which calls into question the extent to which such figures can be generalised across the whole sector (Pitschner & Pitschner-Finn, 2014). The lack of a more comprehensive assessment of rewards-based crowdfunding across multiple platforms may be due in part to a lack of coherent sources of data on crowdfunding activity, which limits the extent to which a sufficiently wide overview of the sector can be achieved.

This study addresses this deficiency in the literature through the analysis of a comprehensive and unique dataset covering around 205,000 rewards-based crowdfunding projects across a number of leading platforms across the US, UK and Canada. This analysis allows us to address the primary research question of our study, namely: *'to what extent does rewards-based crowdfunding provide direct financial support for start-ups and small businesses relative to other types of projects'?*

Our analysis shows that, while the overall success rate in reward-based crowdfunding is about 23%, the amounts typically raised by each campaign tend to be relatively trivial. The mean (median) amount of funding raised is just $4,455 ($315) across all campaigns and $15,120 ($4,320) among those which are successful in meeting their targets. However, the main focus of our analysis is the 9,502 campaigns recorded in the 'Business' category, which accounts for about 4.6% of the total number of campaigns in out sample. The performance of 'Business' campaigns is found to be below average, with only around 1 in 25 campaigns in this category observed to be successful in achieving their funding targets. Even with this relatively low chance of success, the mean (median) amount raised by business campaigns is shown to be only $10,000 ($5,000). We further our analysis by including a range of relevant factors that may influence crowdfunding outcomes in a series of multiple regressions to evaluate performance of business campaigns relative to others. The results from the multivariate analysis are consistent the above and confirm that business campaigns perform poorly compared with those in almost every other category. Altogether, our study provides novel and important evidence from a comprehensive and unique crowdfunding dataset that challenges the widely-held notion in the literature that rewards-based crowdfunding may significantly bridge funding gaps for start-ups and entrepreneurs.

The remainder of this paper is organised as follows. Additional background information on rewards-based crowdfunding and its potential to support small businesses is provided in Section 2, while Section 3 provides a brief overview of the source of data used in this study. Section 4 presents a detailed analysis of this dataset, including a series of multiple regression

analyses, which address our primary research question. Finally, Section 5 offers concluding remarks and highlights the policy relevance and implications resulting from this study.

2. BACKGROUND

Although crowdfunding itself is not a fundamentally new concept, the rapid growth of the Internet has served as a catalyst for its emergence in its current form. Starting as a means of raising funds for artistic and creative projects, crowdfunding now encompasses a much broader range of activities, from small charitable endeavours to businesses seeking hundreds of thousands of dollars in return for equity (Freedman & Nutting, 2015). The notion of crowdfunding is itself rooted in the broader concept of crowdsourcing, which involves gathering ideas, feedback, and solutions from a large volume of contributors ('the crowd'). By extension, crowdfunding is a means by which individuals and organisations can raise funds by aggregating relatively small donations from large numbers of funders. So far, the most widely accepted formal definition has come from Belleflamme *et al.* (2014), which suggests that crowdfunding represents:

"… an open call, mostly through the Internet, for the provision of financial resources either in form of donation or in exchange for the future product or some form of reward to support initiatives for specific purposes."

Mollick (2014) proposes a narrower definition specifically applied in an entrepreneurial context:

"Crowdfunding refers to the efforts by entrepreneurial individuals and groups – cultural, social and for-profit – to fund their ventures by drawing on relatively small contributions from

a relatively large number of individuals using the internet, without the standard financial intermediaries."

The typical process of initiating a crowdfunding campaign involves a 'founder' initiating a 'campaign' to raise funds for their 'project', hosted on one of many dedicated Internet platforms. These platforms serve the role of market intermediates and provide a means by which founders can connect with potential 'funders'. The campaign webpage is populated with details of their proposed project or activity, often including a combination of images, descriptive text and video. The founder also establishes a funding target or 'goal', which represents the amount of money required in order for the project to be able to proceed. Once a campaign goes live, the founder has a limited period (typically around thirty days) to raise an amount that meets or exceeds their original funding target. Depending upon the funding model adopted, failure to meet this target may result in the founder receiving nothing, with a refund subsequently issued to all funders. If the target is met or exceeded, the founder retains the amount raised, less a combined platform and credit-card processing fee of around 10-12%.

There are acknowledged to be four main types of crowdfunding; donation-based, reward-based, peer-to-peer lending and equity crowdfunding. Among these, donation-based crowdfunding is seen to be more appropriate for community, humanitarian or non-profit projects, while the more formal arrangements associated with peer-to-peer lending and equity crowdfunding carry with them the dual problems of legal complexity (Macht & Weatherston, 2014; Vismara, 2016) and information asymmetry (Ahlers *et al.*, 2015). By contrast, so-called 'rewards-based' crowdfunding involves the offer of material incentives to funders based on the value of their contributions, with items such as t-shirts, baseball caps and thank-you notes offered in return for smaller contributions. Larger contributions are rewarded with a wide range of more desirable and prestigious rewards, which might include a walk-on part in a movie

or tickets to an exclusive launch party. In many instances, the reward structure for a crowdfunding campaign will also involve some degree of pre-selling, such that certain thresholds of contribution are rewarded with early access to the product or service being produced using the funds raised by the campaign.

Rewards-based crowdfunding has been argued to be particularly well-suited to raising initial seed-funding for small business ventures (Kimmich, 2012). At this stage, the firm is typically just a concept or idea, mostly with no commercial operations being undertaken. Access to capital is therefore extremely important in order to fund product development, market research and recruitment of business partners (Schwienbacher & Larralde, 2010; Manchanda & Muralidharan, 2014). However, this funding is also typically the most difficult to acquire (Pagliery, 2012), as a majority of entrepreneurs have little or no track record and require loans that are too small to merit the attention of large institutions (Burkett, 2011). Rewards-based crowdfunding can offer easier access to this type of funding (Kim & Hann, 2013) and at a relatively low cost of capital given the reductions in matching, information and search costs enjoyed through conducting transactions in an online environment (Agrawal *et al.*, 2013).

In addition to the provision of seed funding, rewards based crowdfunding offers several other advantages to entrepreneurs and small business owners. First, reward-based crowdfunding can potentially act as an effective marketing and advertising tool, as well as a means by which to gather feedback and test likely levels of demand for a product or service (Harrison, 2013). Second, entrepreneurs and small business owners do not need to dilute their ownership or control compared with other financing methods such as venture capital or angel investment (Macht & Weatherston, 2014), helping to bridge the gap between internal and external funding sources (Collins & Pierrakis, 2012). Third, rewards-based crowdfunding often reduces the risk of underfunding, given that projects on most platforms do not go ahead unless they meet or

exceed their original funding targets (Frydrych *et al*., 2014). Finally, reward-based crowdfunding campaigns allow for faster and easier funding decisions compared with traditional sources of finance, with funding outcomes often known within a period of thirty days or less (Colombo *et al*., 2015).

Our present study uniquely investigates the performance of crowdfunding campaigns across a selection of leading rewards-based platforms based in the US, UK and Canada. We aim to better understand the distribution of performance across our sample of campaigns, as well as establish the degree to which rewards-based crowdfunding leads to successful outcomes in funding of business-related projects compared with those in other categories, such as not-for-profit or the arts. The following section provides detailed additional information on the unique dataset we use to investigate these issues.

3. DATA

Our data sample was obtained directly from the Crowd Data Center (www.thecrowdatacenter.com). This database collects comprehensive, intra-daily information on a total of 205,659 campaigns listed between January 1st 2014 and June 30th 2015. The capture of data from a total of six leading crowdfunding platforms across the US, UK and Canada sets our study apart from others that rely on data from a single platform. This represents all of the rewards-based crowdfunding campaigns captured by the Crowd Data Center during this period, which in principle represents all of the projects active on these platforms during this time. The data includes project-level observations from the two most prominent and well-known platforms globally; Kickstarter and Indiegogo, as well as Rockethub, Fundrazr, Crowdfunder and Sponsume. More information on the nature of these

platforms, as well as their funding models and indicative financial data from our dataset, can be found in Table 1. According to the figures presented in Table 1, Kickstarter and Indiegogo clearly dominate other rewards-based platforms, with the two being collectively responsible for just under 96% of all the campaigns appearing in our sample. Although Kickstarter is clearly the best-performing platform in terms of success rates and amounts raised, it should be noted that Indiegogo hosted more campaigns than Kickstarter during the sample period. Although mean indicators of campaign performance are stronger for Kickstarter, median indicators are more similar across platforms. This suggests that while Kickstarter may host a disproportionately large number of 'high-performance' projects compared with other platforms, the performance of projects around the middle of the respective distributions appears more similar across the board.

[Insert Table 1 Here]

In aggregate across both successful and unsuccessful campaigns, a total of $918 million was raised based on around 11 million unique contributions. The aggregate sum of funding goals was $9.4 billion, meaning that campaigns in the sample collectively raised just under 10% of the sum of their targets. It should be noted that although the platforms themselves originate in particular countries, it is possible that both individual project funders and founders on any given platform may be based outside of the home country. We include data from funders and founders of all nationalities in our dataset, with any campaigns raising funds in currencies other than the US Dollar converted using the prevailing monthly exchange rate. The database also reports a range of additional information for each campaign, such as the platform, target, amount raised and number of funders, as well as controls for fundraising categories (e.g. art, business, film, technology). Although the exact naming of project categories is somewhat

heterogenous across the various platforms, our study uses the common set of categories exactly as reported by the Crowd Data Centre to allow for a consistent comparison between campaigns.

Table 2 contains an overall summary of statistics on project-level outcomes measured across all of the platforms in our sample. The data suggest that, on aggregate, 22.75% (46,804/205,659) of campaigns in the sample were successful in achieving their funding targets. While this number might be considered relatively high, it still only represents around half the level recorded by Mollick (2014) based on analysis of data from Kickstarter alone. Across the entire sample, campaigns in the sample are observed to raise an average of around $4,500 from around 54 individual contributors. It is noteworthy that the median ($315) is much smaller than the mean, suggesting that most projects receive a relatively trivial amount of funding. The situation is similar when we limit the analysis to only those campaigns that are successful in meeting their funding targets, we find that the average (median) amount raised by a campaign is just over $15,000 ($4,000).

[Insert Table 2 Here]

As an additional illustration of these disparities between mean and median amounts raised, Figure 1 illustrates the distribution of campaigns in our sample in terms of the percentage of funding targets achieved. The distribution of funding raised relative to the original target is very obviously non-normal and is both long-tailed and bi-modal, indicating that a relatively large number of campaigns raise a disproportionately low percentage of funds relative to their original targets. Indeed, around half of the total number of observations in our dataset raise amounts equating to less than 10% of their original funding goals. The proportion of campaigns spikes dramatically within the bracket of 100-109% funding relative to those in the 90-99% or 110%+ brackets, indicating relatively few ‘near misses’; projects tend to either raise

an amount almost exactly equal to their target, or else (effectively) raise nothing. Indeed, although not directly reported in Figure 1, the modal campaign in our sample actually has 0 backers and earns $0. The results illustrate that rewards-based crowdfunding is dominated by a small number of disproportionately successful campaigns, whereas most others perform relatively poorly when measured against these reported averages.

[Insert Figure 1 Here]

4. ANALYSIS

The broad overview of our dataset provided in the previous section indicates that the amounts raised by crowdfunding projects is typically relatively small. In order to further explore our primary research question, we now focus our attention on the relative performance of 'Business' campaigns, which explicitly attempt to raise funds in order to support the business functions of start-ups and other small business activities. Table 3 reports some key variables of each category reported in our data sample. It can be seen that a total of 9,502 campaigns are listed in the 'Business' category, accounting for 4.62% of the total number of observations within the sample. Given that the average proportion of campaigns in each category is only 2.5%, this suggests that business-related projects are fairly well represented in rewards-based crowdfunding. Indeed, 'Business' campaigns constitute the eighth most represented category behind film (12.59%), music (10.32%), community (8.49%), technology (7.38%), art (6.66%), publishing (5.66%) and food (4.88%). However, the data also show that the success rate for these campaigns is much lower than the average observed across other categories. Only about 4.6% of business-related reward-based crowdfunding campaigns meet or exceed their original targets compared to the roughly 23% average success rate observed across the whole dataset

and 45% for campaigns in the most successful category (comics). The number is broadly comparable to ~3% of entrepreneurs who are successful in acquiring funding via angel investors (Pope, 2011). Nevertheless, the monetary amounts raised by 'Business' projects are also observed to be relatively low. On average, a business-related crowdfunding project is able to raise only around $1,000. Even when limiting the analysis to successful projects only, the average amount a campaign founder tends to raise in support of their business is around $10,000. These numbers might be considered to be somewhat trivial when compared to the typical amounts raised from other funding sources; such as own capital ($100,000), family and friends ($250,000) or angel investors ($500,000) (Cumming and Johan, 2009, p8-9).

[Insert Table 3 Here]

In order to provide additional evidence on the performance of business projects while controlling for a range of other relevant factors, we present the results of a series of multiple regressions in Table 4. To check for robustness, we perform regressions on three different measures of campaign performance; a binary measure of success/failure; the percentage of funding raised relative to the target; and the absolute dollar amount raised. We choose to estimate a logit model given the binary nature of the 'Success' variable, while Tobit regression models are estimated for both the percentage of funding achieved relative to target and the absolute amount raised, which is appropriate given that both variables are censored at a lower limit of zero. In all cases, OLS coefficient estimates are also presented side-by-side for comparison, although the findings are broadly consistent no matter which modelling approach is used. The general functional form of our regressions can be summarised as follows;

$$Y_i = \alpha + \beta \cdot CAT_i + \gamma \cdot PLAT_i + \delta \cdot TIME_i + \theta \cdot CNTRY_i + \varphi \cdot \ln(DUR_i) \quad (1)$$
$$+\omega \cdot \ln(TAR_i) + \varepsilon_i$$

Where Y_i represents the respective outcome of campaign i, CAT represents a vector of variables controlling for the category of the campaign, $PLAT$ represents a vector of controls for the online platform on which the campaign was hosted and $CNTRY$ represents a vector of controls for the country in which campaign was initiated. DUR and TAR are continuous variables representing the duration and funding targets of each campaign respectively. Given that we have previously established that a majority of our continuous variables are highly skewed, we take the natural logs of both of these variables in all model specifications, meaning that coefficient estimates can be interpreted in percentage terms. We also take the natural log of the dependent variable 'Amount Raised', which is the dependent variable in one of our regression specifications. The values of the estimated β coefficients allow us to address our research question relating to the performance of business campaigns relative to those in other categories.

Although not reported, Variance Inflation Factor (VIF) scores for each variable do not indicate a problem of multicollinearity in any of our specifications. The maximum VIF is found to be 2.59 and the average is 1.45; both of which being well below the accepted threshold of 10. We further demonstrate that the level of correlation between the funding goal and the actual amount raised is sufficiently low (correlation coefficient +0.045) that it is appropriate to include the former as an independent variable in a model where the latter features as the dependent variable. Additionally, given that the Kickstarter and Indiegogo platforms outperform others in terms of numbers of projects and amounts raised, we further check robustness of our results by re-estimating the models only using campaigns from Kickstarter and Indiegogo, as well as campaigns from Indiegogo and the other platforms (i.e. excluding Kickstarter). The results are substantively the same no matter what subset of data we apply to the models; hence we report preferred results below using data from the whole sample.

[Insert Table 4 Here]

Despite distinguishing between three different measures of campaign performance, the results are largely consistent across all model specifications. The coefficients reported in the logit regressions can be interpreted as log-odds ratios, which can be converted to conventional odds-ratios by taking the exponential of the estimated coefficient. These results indicate that business campaigns are $(1 - e^{-1.192})$, or approximately 70% less likely to succeed compared with those in the reference category ('Film'). Correspondingly, the Tobit regression results also show that Business projects raise around 33% less towards their target funding level, while the estimates relating to the natural log of the amount raised suggest they raise $(1 - e^{-2.838})$ or approximately 94% fewer dollars in total compared with the base case. Note that in each case, the OLS regression results at least somewhat underestimate the negative performance of projects in the 'Business' category. These results demonstrate that, across all measures of campaign performance, those relating to 'Business' perform relatively poorly against those from nearly every other category; the one exception being 'Crafts'. Indeed, campaigns that perform better than the base case are almost exclusively related to the creative sectors; specifically including 'Comics', 'Dance', 'Music' and 'Theatre'. This suggests that rewards-based crowdfunding is much better suited to the support of entrepreneurial activity as it relates to the creative and cultural activities, but does not seem offer anywhere near the same level of support to overtly-commercial projects in the 'Business' category.

Our regression results also demonstrate some degree of heterogeneity of performance across crowdfunding platforms. The uniformly negative platform controls demonstrate that projects on Kickstarter tend to enjoy the best outcomes, with projects on Indiegogo only being around 20% as likely to succeed and raising about 70% less in total than those on Kickstarter when controlling for other relevant factors. We also see evidence of seasonality in the performance

of crowdfunding campaigns, with worse performance generally observed during the late summer and in the base month of December relative to other months. This is likely to reflect diminished availability of funders and/or a reduction in propensity to contribute to crowdfunding campaigns during the summer and Christmas vacation periods. We also observe strong evidence that campaigns based in the US (and to a lesser extent, Canada and the UK) tend to perform better compared with international projects originating outside of these countries. This is likely to partly be a consequence of the Anglo-American nature of the sampled platforms, but may also indicate a degree of 'home country' bias in terms of campaign performance.

Our results further demonstrate that longer campaign durations universally associate with poorer performance, suggesting that founders should ideally organise their campaigns to run over a shorter, more focused period of fundraising. Finally, although campaigns with higher targets associate with larger absolute dollar amounts raised, the relationship is shown to be relatively inelastic. This is reinforced by the negative relationship observed between the size of the target and both the likelihood of success and the proportion of the funding target achieved. This finding strongly supports the argument that the crowd generally seems more willing to support smaller campaigns with relatively lower funding goals, which may be at odds with business crowdfunding campaigns that would presumably seek to raise (relatively) larger sums.

We acknowledge that entrepreneurial activity is obviously not limited merely to campaigns within the 'Business' category, as campaigns in many other categories can clearly also be regarded as having an entrepreneurial component. However, our decision to focus on campaigns within this category allows us to investigate the performance of projects that are overtly related to business activity and to compare against projects where the commercial and

operational aspects of the project are less heavily emphasised. To complement this line of argument, we also briefly investigate whether rewards-based crowdfunding is an effective means by which to raise funds to support the development of and manufacture of specific products and services by highlighting the performance of projects in the 'Technology' category. This is an area in which rewards-based crowdfunding has particular potential to support entrepreneurial and small business activities by essentially funding R&D activity through 'pre-ordering'. There are several well-known examples of highly successful technology start-ups acquiring initial funding through rewards-based crowdfunding, including the Pebble Smart Watch and the Oculus Rift virtual reality headset. However, the regression results presented in Table 3 show that projects in the 'Technology' category are also less likely to successfully achieve their funding targets and raise lower amounts than the base case of projects in 'Film' and other more successful categories. Relative to the base case, we show that 'Technology' campaigns are approximately $(1 - e^{-0.552})$ = 42% less likely to succeed and raise approximately $(1 - e^{-1.211})$ = 70% fewer dollars in total. This further supports our argument that rewards-based crowdfunding is currently geared towards the funding of artistic and creative endeavours, as opposed to general business activities or even technology start-ups. This calls into question the extent to which claims relating to the suitability of rewards-based crowdfunding for providing seed capital.

Altogether, the analysis of these data indicates that business-related campaigns currently represent a fairly significant share of rewards-based crowdfunding activity in the US, Canada and UK. However, our regression results indicate that the performance of business campaigns on rewards-based crowdfunding platforms is generally poor compared with those in other categories.

5. CONCLUSION

This study has presented unique evidence on the current state of rewards-based crowdfunding activity and has resultantly made a number of unique contributions to the emergent literature on the subject. We are the first study to analyse data on the performance of projects hosted across a sample of rewards-based crowdfunding platforms. The data used in our study have been collected on a consistent and systematic basis over the course of an eighteen-month period between January 2014 and June 2015 in order to establish the nature and pattern of activity across the sector. To our knowledge, no other study to-date has attempted to provide such a broad perspective on rewards-based crowdfunding activity, instead limiting their enquiries to data obtained from a single website (usually Kickstarter). We also uniquely focus our analysis on the relative performance of business projects on rewards-based crowdfunding platforms in order to determine the extent to which the approach is leading to widespread access to seed funding for start-ups and small enterprises.

Our dataset shows that, in general, the outcomes of rewards-based crowdfunding projects are typically highly skewed, both in terms of value, success and type of activity. The distribution of activity is dominated by a disproportionately small number of high-value and/or successful campaigns, whereas a significant majority raise very small amounts and/or are unsuccessful in achieving their funding goals. A multiple regression analysis of rewards-based crowdfunding activity which controls for a comprehensive variety of campaign characteristics, including project category, shows that although business campaigns are one of the most heavily represented, they perform relatively poorly across all outcome measures compared with almost all other types of campaign; most notably those relating to artistic and creative ventures. Contrary to arguments presented elsewhere in the literature, this calls into question the extent to which rewards-based crowdfunding really is a means by which large numbers of start-ups

and small businesses are able to access essential seed funding. By contrast, our findings suggest that rewards-based crowdfunding is presently far better suited to the support of artistic and creative endeavours.

Of course, one reason why much attention has been devoted to small businesses raising seed capital via rewards-based crowdfunding is that equity crowdfunding has been heavily restricted over this period of analysis, particularly in the US and Canada. However, in October 2015, the Securities and Exchange Commission approved the final implementation of Title III of the JOBS act, which respectively enables anyone to invest in securities for start-up companies regardless of income, while also allowing start-ups and small businesses to raise up to $1m through equity crowdfunding within a 12-month period (Securities and Exchange Commission, 2015). These significant regulatory changes create the potential for growth in both the supply and demand of equity crowdfunding in the US over the coming months and years. However, whether equity-based crowdfunding can serve as a genuine alternative to the rewards-based model for businesses looking to raise start-up capital remains to be seen. In the analysis of rewards-based projects presented in this study, we see limited evidence of widespread support for overtly business (and even technology) related campaigns; especially when compared with those in the creative and cultural sectors. While it is possible that the changing regulatory environment may help equity crowdfunding develop into a mainstream source of capital for firms slightly further along the funding escalator, our findings suggest that start-ups looking to rewards-based platforms as a source of seed capital are unlikely to enjoy many of the benefits promised elsewhere in the literature.

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Table 1: Summary of rewards-based crowdfunding platforms in dataset

Platform	Country	Funding Model(s)	Launched	Number of Projects	Proportion Successful	Mean (Median) Amount Raised	Mean (Median) Pledge	Mean (Median) No. of Funders
Kickstarter	US	AoN	2009	93,340	33%	$6,495 ($435)	$63 ($36)	80 (9)
Indiegogo	US	AoN; KiA	2007	103,768	14%	$2,841 ($260)	$53 ($35)	33 (6)
Crowdfunder.co.uk	UK	AoN; KiA	2012	3,151	25%	$3,031 ($405)	$58 ($25)	27 (7)
Fundrazr	Canada	AoN; KiA	2008	830	22%	$2,066 ($813)	$96 ($59)	26 (13)
Rockethub	US	KiA	2010	4,114	6%	$831 ($0)	$33 ($0)	9 (0)
Sponsume	UK	KiA	2010	416	10%	$1,189 ($448)	$32 ($24)	23 (8)

Notes: Funding models are 'All-or-Nothing' (AoN) where the founder is required to achieve their funding target or else receives nothing and 'Keep it All' (KiA) which allows founders to retain the amounts raised regardless of whether or not the funding target is met.
Reported figures are aggregated across both successful and unsuccessful projects.
Wile Sponsume ceased trading in May 2015, it was actively hosting campaigns for a majority of our sample period (January 2014 – June 2015).

Table 2: Summary of statistics of reward-based crowdfunding activity

PANEL A: SECTOR LEVEL STATISTICS

Number of campaigns	% Successful campaigns	Sum of targets ($m)	Sum of amount raised ($m)	Total number of backers	Average pledge per backer ($)
205,659	22.75	9,419	916	11,081,350	57

PANEL B: PROJECT LEVEL STATISTICS

Variable	Mean	Median	Mode	Std Dev	Min	25%	75%	Max
% Funded	43.50	5.75	0	82.20	0	0.04	68.00	995.1
Target ($)	45,815	6,000	5,000	353,085	1	2,000	20,000	19,000,000
Amount Raised ($)	4,455	315	0	37,756	0	5	2,194	6,225,354
Number of Backers	54	7	0	433	0	1	33	105,857

Sample includes 205,659 reward-based crowdfunding campaigns traced and recorded in CrowdDataCentre from 01/01/2014 to 30/06/2015. Campaigns are individual crowdfunding projects launched via crowdfunding platforms to raise funds. Target represents the amount founders of crowdfunding campaigns seek to raise. Successful campaigns are projects which raise at least their funding target. The amount raised is amount of funds that a project collected during its crowdfunding campaign. % Funded is calculated as the amount raised by a project divided by its target. Backers are individuals who provide financial support for crowdfunding project. Average pledge per backers is calculated as the amount raised by a project divided by number of backers. Panel A of the table includes the aggregate numbers for all campaigns in the sample while panel B presents the statistics at the project level.

Table 3: Descriptive Statistics by Category

Categories	Number of projects	Percentage in whole sample	Success rate (%)	Amount raised per project (All projects) ($)		Amount raised per project (Only successful projects) ($)	
				Mean	Median	Mean	Median
Animals	2,951	1.44	14.44	1,564.68	190.00	5,781.12	1,700.00
Art	13,694	6.66	26.37	2,125.25	221.00	5,831.92	2,378.00
Business	*9,502*	*4.62*	*4.43*	*1,084.49*	*7.00*	*10,207.61*	*5,035.00*
Comic	2,589	1.26	45.50	5,346.89	1,081.00	5,485.65	2,043.26
Community	17,448	8.49	15.85	2,021.25	245.00	10,682.86	4,013.00
Crafts	1,121	0.55	19.80	1,144.64	55.00	6,824.55	2,350.00
Dance	2,052	1.00	37.23	2,599.75	1,085.00	4,379.12	1,678.00
Design	8,750	4.26	28.33	11,010.78	830.50	5,037.08	3,169.00
Education	8,788	4.27	14.82	3,201.00	315.00	33,126.61	11,620.00
Environment	2,074	1.01	13.26	2,735.60	308.00	11,079.41	2,602.50
Fashion	7,302	3.55	19.34	3,835.15	105.50	10,032.36	4,015.00
Film (Base)	25,883	12.59	25.80	5,056.05	640.00	552.50	552.50
Food	10,036	4.88	19.31	3,804.79	135.00	3,974.39	1,565.00
Games	1,498	0.73	45.53	15,002.67	1,826.50	17,437.49	4,692.00
Health	5,924	2.88	14.04	2,467.13	200.00	20,670.45	5,525.00
Music	21,224	10.32	35.34	3,158.43	835.00	16,529.25	7,585.00
Other	4,833	2.35	32.07	6,774.76	500.00	14,278.02	4,230.00
Photography	4,346	2.11	20.55	2,238.01	100.00	14,449.86	8,006.50
Politics	1,112	0.54	23.02	2,757.29	500.00	30,970.81	10,232.50
Publishing	11,630	5.66	26.47	3,022.32	146.00	10,083.60	3,265.00
Religion	1,316	0.64	15.05	1,811.60	175.00	4,044.85	1,081.66
Sports	2,886	1.40	15.87	1,694.66	250.00	7,004.27	4,033.00
Technology	15,177	7.38	13.98	11,252.54	115.00	16,869.61	5,010.00
Theatre	5,776	2.81	38.54	3,127.26	1,195.00	1,371.83	607.50
Video/Web	4,114	2.00	14.10	3,737.42	100.00	8,425.59	3,100.00
Video Games	9,058	4.41	23.91	8,296.83	176.00	8,091.47	2,000.00
Writing	2,942	1.43	15.70	1,393.70	195.00	9,477.68	4,052.50

Table 4: Regression Results for Project Outcomes

	Success				% Funded				Ln(Amount Raised $)			
	Logit		OLS		Tobit		OLS		Tobit		OLS	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Category Controls												
Animals	-0.363	***	-0.053	***	-11.108	***	-6.008	***	-0.901	***	-0.774	***
	(0.057)		(0.007)		(1.391)		(0.978)		(0.077)		(0.059)	
Art	-0.372	***	-0.053	***	-6.431	***	-2.744	***	-0.754	***	-0.666	***
	(0.026)		(0.004)		(0.971)		(0.804)		(0.041)		(0.033)	
Business	-1.192	***	-0.086	***	-33.294	***	-10.916	***	-2.838	***	-2.140	***
	(0.053)		(0.003)		(0.909)		(0.515)		(0.056)		(0.039)	
Comic	0.428	***	0.110	***	35.975	***	33.950	***	0.634	***	0.566	***
	(0.043)		(0.010)		(2.473)		(2.348)		(0.066)		(0.057)	
Community	-0.130	***	-0.022	***	-0.772		1.816	***	-0.537	***	-0.474	***
	(0.028)		(0.004)		(0.768)		(0.584)		(0.040)		(0.032)	
Crafts	-1.318	***	-0.222	***	-32.971	***	-22.743	***	-2.312	***	-2.034	***
	(0.078)		(0.012)		(3.528)		(3.065)		(0.114)		(0.090)	
Dance	0.421	***	0.086	***	12.032	***	8.118	***	0.871	***	0.736	***
	(0.050)		(0.010)		(1.387)		(1.187)		(0.069)		(0.059)	
Design	-0.126	***	-0.026	***	24.380	***	22.525	***	0.250	***	0.246	***
	(0.029)		(0.005)		(1.564)		(1.439)		(0.047)		(0.040)	
Education	-0.128	***	-0.025	***	-3.199	***	-0.926		-0.419	***	-0.358	***
	(0.035)		(0.004)		(0.859)		(0.621)		(0.049)		(0.039)	
Environment	-0.118	*	-0.013	*	-1.017		2.652	**	-0.526	***	-0.430	***
	(0.067)		(0.008)		(1.555)		(1.068)		(0.096)		(0.075)	
Fashion	-0.748	***	-0.121	***	-20.992	***	-11.378	***	-1.617	***	-1.306	***
	(0.035)		(0.005)		(1.337)		(1.074)		(0.057)		(0.045)	
Food	-0.759	***	-0.118	***	-22.944	***	-15.400	***	-1.370	***	-1.149	***
	(0.032)		(0.005)		(0.980)		(0.766)		(0.048)		(0.039)	
Games	0.282	***	0.079	***	76.641	***	74.545	***	0.650	***	0.620	***
	(0.057)		(0.013)		(5.116)		(4.969)		(0.096)		(0.087)	
Health	-0.146	***	-0.022	***	-2.566	**	3.139	***	-0.922	***	-0.734	***
	(0.041)		(0.005)		(1.247)		(0.942)		(0.062)		(0.048)	
Music	0.252	***	0.055	***	3.931	***	4.386	***	0.085	**	0.082	***
	(0.021)		(0.004)		(0.672)		(0.546)		(0.034)		(0.029)	
Other	-0.172	***	-0.029	***	-3.793	**	-0.467		-0.509	***	-0.398	***
	(0.037)		(0.007)		(1.553)		(1.359)		(0.062)		(0.052)	
Photography	-0.672	***	-0.110	***	-23.748	***	-14.817	***	-1.516	***	-1.250	***
	(0.043)		(0.007)		(1.458)		(1.117)		(0.068)		(0.053)	
Politics	0.276	***	0.041	***	13.315	***	11.926	***	0.233	**	0.169	*
	(0.076)		(0.012)		(2.170)		(1.740)		(0.112)		(0.092)	
Publishing	-0.622	***	-0.113	***	-22.649	***	-15.074	***	-1.486	***	-1.263	***
	(0.027)		(0.005)		(1.028)		(0.846)		(0.046)		(0.038)	
Religion	-0.441	***	-0.061	***	-18.023	***	-8.342	***	-1.313	***	-1.058	***
	(0.080)		(0.010)		(2.070)		(1.392)		(0.119)		(0.091)	
Sports	-0.126	**	-0.022	***	-4.813	***	-0.612		-0.682	***	-0.570	***
	(0.054)		(0.007)		(1.413)		(1.014)		(0.079)		(0.061)	
Technology	-0.552	***	-0.072	***	-0.601		4.503	***	-1.211	***	-1.021	***
	(0.029)		(0.004)		(1.084)		(0.897)		(0.044)		(0.035)	
Theatre	0.538	***	0.109	***	18.990	***	13.982	***	1.156	***	0.990	***
	(0.032)		(0.007)		(0.904)		(0.785)		(0.043)		(0.037)	
Video/Web	-0.530	***	-0.071	***	-20.593	***	-9.408	***	-1.576	***	-1.249	***
	(0.049)		(0.006)		(1.378)		(0.964)		(0.072)		(0.054)	
Video Games	-0.282	***	-0.049	***	13.732	***	17.817	***	-0.863	***	-0.673	***
	(0.030)		(0.005)		(1.625)		(1.429)		(0.051)		(0.041)	
Writing	-0.151	***	-0.034	***	-8.378	***	-2.913	***	-0.865	***	-0.710	***
	(0.054)		(0.007)		(1.525)		(1.099)		(0.081)		(0.062)	
Platform Controls												
Crowdfunder	-0.626		-0.121	***	-11.627		-17.692	***	0.661	***	0.476	***
	(0.051)	***	(0.009)		(1.427)	***	(1.208)		(0.067)		(0.056)	
Fundrazr	-0.667		-0.121	***	16.285		-2.410		2.675	***	2.152	***
	(0.099)	***	(0.013)		(1.743)	***	(1.667)		(0.060)		(0.052)	
Indiegogo	-1.063		-0.178	***	-29.296		-23.431	***	-0.747	***	-0.580	***
	(0.015)	***	(0.002)		(0.537)	***	(0.436)		(0.024)		(0.019)	
Rockethub	-1.422		-0.187	***	-58.243		-26.754	***	-2.901	***	-1.849	***
	(0.072)	***	(0.005)		(1.664)	***	(0.806)		(0.095)		(0.058)	
Sponsume	-1.937		-0.298	***	-38.267		-30.520	***	-0.971	***	-0.769	***
	(0.168)	***	(0.015)		(3.093)	***	(1.975)		(0.194)		(0.148)	
Time Controls												
Jan	0.339	***	0.056	***	11.122	***	8.175	***	0.582	***	0.502	***
	(0.032)		(0.005)		(1.143)		(0.976)		(0.046)		(0.038)	

Feb	0.149	***	0.029	***	-1.990	*	1.503	*	-0.446	***	-0.353	***				
	(0.030)		(0.004)		(1.087)		(0.904)		(0.045)		(0.036)					
Mar	0.186	***	0.035	***	-3.461	***	1.898	**	-0.552	***	-0.400	***				
	(0.028)		(0.004)		(1.010)		(0.834)		(0.042)		(0.034)					
Apr	0.216	***	0.039	***	3.290	***	4.308	***	-0.011		0.013					
	(0.029)		(0.004)		(1.007)		(0.845)		(0.041)		(0.034)					
May	0.231	***	0.041	***	6.580	***	5.224	***	0.287	***	0.243	***				
	(0.028)		(0.004)		(0.999)		(0.846)		(0.041)		(0.034)					
Jun	0.271	***	0.047	***	4.702	***	4.870	***	0.146	***	0.152	***				
	(0.029)		(0.004)		(1.044)		(0.881)		(0.043)		(0.035)					
Jul	0.291	***	0.051	***	1.370		4.749	***	-0.235	***	-0.137	***				
	(0.033)		(0.005)		(1.192)		(0.984)		(0.050)		(0.040)					
Aug	-0.150	***	-0.010	**	-12.225	***	-4.507	***	-0.989	***	-0.764	***				
	(0.033)		(0.005)		(1.181)		(0.958)		(0.049)		(0.039)					
Sep	-0.044		0.002		-10.964	***	-3.595	***	-0.889	***	-0.674	***				
	(0.034)		(0.005)		(1.197)		(0.966)		(0.051)		(0.040)					
Oct	0.157	***	0.030	***	-2.349	**	1.083	***	-0.373	***	-0.276	***				
	(0.033)		(0.005)		(1.159)		(0.956)		(0.049)		(0.039)					
Nov	0.204	***	0.037	***	1.994		3.982		-0.155	***	-0.104	***				
	(0.033)		(0.005)		(1.218)		(1.023)		(0.049)		(0.040)					
Country Controls																
US	0.447	***	0.054	***	20.817	***	10.781	***	1.355	***	1.056	***				
	(0.017)		(0.002)		(0.541)		(0.410)		(0.024)		(0.019)					
UK	0.357	***	0.044	***	13.398	***	6.859	***	0.850	***	0.648	***				
	(0.024)		(0.004)		(0.888)		(0.715)		(0.038)		(0.030)					
Canada	0.344	***	0.036	***	16.664	***	7.441	***	1.206	***	0.921	***				
	(0.028)		(0.004)		(1.003)		(0.830)		(0.041)		(0.033)					
Project-Specific Controls																
ln(Target $)	-0.307	***	-0.044	***	-12.052	***	-9.509	***	0.178	***	0.174	***				
	(0.004)		(0.000)		(0.162)		(0.125)		(0.006)		(0.005)					
ln(Duration)	-0.095	***	-0.012	***	-2.968	***	-2.221	***	-0.132	***	-0.101	***				
	(0.009)		(0.001)		(0.329)		(0.262)		(0.015)		(0.012)					
Intercept	1.916	***	0.718	***	148.605	***	136.532	***	3.805	***	4.085	***				
	(0.049)		(0.008)		(1.966)		(1.581)		(0.078)		(0.062)					
F / Wald Chi^2	21752.80	***	667.44	***	430.59	***	457.19	***	488.95	***	549.38	***				
(Psuedo) R^2	0.117		0.394		0.013		0.099		0.022		0.101					
N	205,553		205,553		205,553		205,553		205,553		205,553					

Success is binary variable which takes value of one if campaign meets or exceeds its funding target and zero otherwise. All variables in category, platform, time and country controls are dummy variables which takes value of one if the campaign is listed in this category, platform, time and country. Other variables are defined in table 1.

Base cases are: Film (Category); Kickstarter (Platform); December (Time); International (Country).

***, ** and *, indicate significance of parameter estimates at the 1%, 5%, and 10% level respectively. Standard errors are presented in parentheses.

Figure 1: Proportion of Campaigns Achieving Percentage of Funding Target