

Peter Younkin
Assistant Professor
Strategy & Organization
Desautels Faculty of Management
McGill University

Keyvan Kashkooli
Assistant Professor
Management & Organizations
Anderson School of Management
UCLA

Submission to the Berkeley Crowdfunding Conference

Given the prospective nature of the conference we thought it best to offer an outline of our crowdfunding-related research projects and an extended abstract of one working paper, rather than to submit a paper. If we have erred and you'd prefer to see a draft of our paper, please contact us and we'll oblige.

At present, we have three research streams on crowdfunding, and welcome the opportunity to discuss these with others interested in the setting and its potential relevance. The streams are as follows:

1) Gender and the assessment of value.

One of the persistent problems in entrepreneurship is the underrepresentation of women and minorities. For instance, while women control more than 50% of U.S. private wealth and, although increasing rapidly, they constitute less than a quarter of the angel investing community (Kauffman Foundation). There is widespread interest in the degree to which crowdfunding will allow new forms of entrée for entrepreneurs from such underrepresented groups. We approach this issue differently. Working with a Bay Area venture capital fund that focuses on increasing the number of female accredited investors, we are investigating whether the JOBS act and the increase in equity-based crowdfunding opportunities will serve to entice more female investors.

Specifically, we are interested in four questions: how do female investors calculate the value of different projects?, How does their valuation process evolve when they are "trained" by experienced investors? Do angel investment groups that share responsibility for due diligence on the entrepreneurial management team, the venture itself, and quality of the crowdfunding platform perform better than individual angel investors? Do pooled investment strategies shift risk assessments and valuations? We will run a series of experiments later this fall assessing the effectiveness of these different investor-training models to test hypotheses drawn from social psychology, economics, and sociology.

2) The influence of framing on project attributes.

Why do ordinary people choose to give money to strangers? Either as a loan, a philanthropic gift, or as a means of investing in an uncertain venture ordinary people are able to crowdfund an increasing variety of projects around the world. Some of these are openly philanthropic, others offer investment opportunities, and still others operate as vague forms of pre-purchasing rare objects. Our interest is in how these initial frames alter the influence of the

qualitative aspects of each project. In essence, do married women garner a bonus in one setting but a penalty in the other?

Using data on several thousand projects from three different crowdfunding platforms we test a series of hypotheses on the modifying effect of different cognitive frames on the motivation for small-scale, individual-level contributions.

3) A market or a community?

How do people determine the monetary value of an idea? Venture capitalists with years of experience vary widely in how they assess similar notions. Yet at the heart of crowdfunding lies the assumption that ordinary individuals, without any expertise or training, can make fair assessments about ambiguous ideas from unknown aspirants. The question of how they make these assessments, and whether they treat the decision as investments, gifts, or the costs of membership in a community of funders, is an essential one. Put differently, do contributors view their participation in crowdfunding as an exchange? And, if so, how do they determine the amount of their contribution and what counts as an equal value return?

The attached extended abstract describes our first efforts to consider this question, including the results of our initial analyses.

A Crowd or a Community?

Comparing three explanations for the decision to donate to a crowdfunding project

Peter Younkin
Desautels Faculty of Management
McGill University
Peter.younkin@mcgill.ca

&

Keyvan Kashkooli
Anderson School of Management
UCLA
keyvan.kashkooli@anderson.ucla.edu

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Introduction and Hypotheses

How do people determine the monetary value of an idea? Experienced venture capitalists with vary widely in how they assess similar notions. Yet at the heart of crowdfunding lies the assumption that ordinary individuals, without any expertise or training, can make fair assessments about ambiguous ideas from unknown aspirants. The question of how they make these assessments, and whether they treat the decision as investments, gifts, or the cost of membership in a community of funders, is an essential one. Put differently, do contributors view their participation in crowdfunding as an exchange? And, if so, how do they determine the amount of their contribution and what counts as an equitable return?

Using a sample of 510 *Kickstarter* projects we test claims that project-based crowdfunding operates as a philanthropic enterprise, a community, or a market. We find evidence of all three elements, suggesting that this is not simply a new method for pre-ordering products. Instead, both legitimacy and social embeddedness improve performance. More significantly, the legitimacy of the founders and their degree of embeddedness moderates the influence of other variables, reducing penalties and enhancing rewards. These results suggest a surprisingly robust role of social factors in what are often popularly characterized as atomized exchanges between anonymous actors.

In this proposal we outline our *early* efforts to separate these threads and to identify the degree to which project-based funding (as opposed to platforms that offer equity or are explicitly nonprofit) is a philanthropic, an economic, or a social act. In so doing, we draw upon research on the social embeddedness of economic actors (Granovetter, 1985), the role of legitimacy in uncertain exchanges (Akerlof, 1970; Resnick, Kuwabara, Zeckhauser, & Friedman, 2000), and on the construction of markets for goods of uncertain value (Anteby, 2010; Fourcade, 2011; Healy, 2000, 2006; Zelizer, 1979). We compare the above to claims in economics on the role of ‘warm glow’ in motivating philanthropic donations (Andreoni, 1990) and social-psychology accounts of the role of status in promoting pro-social behavior (Willer, 2009).

From these different disciplines we draw competing explanations about the degree to which backers respond to market, philanthropic, or social signals that we test with four hypotheses:

H1: Greater legitimacy will increase the likelihood of success and the amount raised.

H2: Friends and charitable signals will increase the likelihood of success and the amount raised.

H3: Greater embeddedness within the community will increase the likelihood of success and the amount raised.

H4: The degree of embeddedness will reduce the need for external forms of legitimacy and the penalties associated with being illegitimate.

Data and Method

We estimate our hypotheses using a unique data set of 510 *Kickstarter* projects randomly selected from all the projects begun during April 2012. Of these 510, 235 were successful, raising over \$14 million in total. While early work on crowdfunding has used large-N samples to assess initial trends and predictors of success (Agarwal, Catalini, & Goldfarb, 2010; Kuppuswamy & Bayus, 2013; Mollick, 2013) we adopt an alternate strategy that provides a detailed look at a limited set of project's qualitative characteristics to isolate the specific mechanisms behind the broader patterns. Specifically, we used a team of RAs to code multiple dimensions of each video, photograph, reward, and description. The RAs were trained prior to coding and display high degrees of inter-rater reliability (Krippendorff's Alpha $>.8$ for all included categories). This method enables us to assess the quality of projects as experienced by the audience of prospective contributors such as the content of the video, the production quality, length, use of music; the race, gender and experience of the founding team, even their attractiveness. This yielded a wealth of data on these projects, only a small portion of which we incorporate into the first study.

The primary dependent variables are a binary assessment of whether the project succeeded (reached its goal) or not, and a continuous measure of the log of the amount raised (plus \$1 to prevent the exclusion of unfunded projects). We estimated the likelihood of success using logistic regressions and employed a naïve OLS regression to predict the total amount raised per project. Tests of collinearity, normality, and endogeneity verified the appropriateness of these methods. Results are displayed with standard errors clustered by project category.

The independent variables are operationalized as follows. In lieu of a direct measure of legitimacy we assess the degree of professionalism of the presentation as a proxy for signaling

the seriousness and capabilities of the founders. Therefore, *Legitimacy* is measured using a set of qualitative binary variables: 1) Did the founder display formal credentials? 2) Did the video appear professionally edited? 3) Did the founder thank the audience? 4) Were there errors in the project description or video? 5) Did the founder offer specific details about how the project would proceed? 6) Does the founding team include a famous affiliate? 7) Do they receive endorsements from blogs, newspapers, or the site itself? And, a count of prior successful projects with the same founding team.

Charitable Signals were measured first as a count of the number of times a project mentioned the benefit of the project to: environmental causes, educational causes, disadvantaged groups, or their own need to overcome some adversity (e.g. a flood, tornado, recent disability). Second, we use a binary for whether the founders pledge to donate either some of the proceeds raised or some portion of the project itself. Finally, we consider the degree to which the projects benefit from friends supporting one another with the square root of the number of Facebook friends the founder has at the start of the project.

Embeddedness is measured in three ways. First, we use a continuous measure of other *Kickstarter* projects supported by a member of the founding team, and the square of this variable, to capture the hypothesized nonlinear relationship. Second, we measure the average number of other projects backed by a focal project's backers. In other words, was the project primarily supported by new entrants to the site or by active members? This helps capture the difference between projects that drew upon the existing community versus those that relied upon outside support. Finally, we measure the average time (in months) that the backers of a project were members of the community.

Controls were included for the log of the amount requested, whether this was the first-project attempted by the founder, the overall clarity of the project, whether their description explained the use of the money they were raising, whether they had photos, and whether they had a video.

Preliminary Results and Discussion

The preliminary results, presented in tables 1 & 2, are illuminating. There is moderate support for the first hypothesis. While efforts to improve the quality of the presentation (professionally editing the video, including details about the cost and timeline, removing errors)

increase the likelihood of success and the amount raised, founder-specific variables do not generally remain significant in the full model. Only past success remains significant, increasing the likelihood of present success. Although still preliminary, these suggest a reduced relevance for traditional signals of legitimacy: college degree, formal training, external endorsements, which may allow for wider representation in the pool of founders going forward.

We find no support for the second hypothesis, and disaggregating the “charitable code” construct into a test of the respective elements actually reveals a robust penalty associated with some concepts (e.g. educational). However we find strong support for the third hypothesis, as the degree to which founders have already acted within the community increases their likelihood of success and the amount they raise. In addition, projects that attract more experienced backers tend to do better, although projects that attract more active backers are no more likely to succeed and raise slightly less than comparable projects.¹

Finally, as shown in figures 1-3, the degree of embeddedness moderates the influence of many signs of legitimacy. For instance, the advantage to having a high-quality video and the penalty to having written errors are both mitigated by the degree of embeddedness. In essence, backers forgive other members of their community for the same failings that they hold newcomers accountable. This is not surprising if we consider the site to be a community, but it is surprising if we assume that crowdfunding sites bring together anonymous actors for one-time exchanges. The evidence here shows both factors at play, backers in this context care strongly about project quality and founder behavior, but less about founder credentials or the social benefits of the work.

This complements recent work (Kuppuswamy & Bayus, 2013) on the social psychology of crowdfunding investors by implying a strong role for reciprocity, as even controlling for the perceived quality of the projects, backers were more likely to invest in projects run by active members of the community. Therefore, although crowdfunding may prove a viable means for entrepreneurs to get started, and even offer alternate pathways for previously excluded groups, the essential decisions of ‘worthiness’ remain framed by the social context.

¹ In a second set of regressions not included here we find that the embeddedness of a founder is a good predictor for the types of backers that they draw. With more embedded founders, founders who have themselves supported other projects, drawing a much higher percent of experienced backers, measuring experience in a number of different ways.

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Table 1: Estimating the Amount Raised

	(1)	(2)	(3)	(4)
Log (Goal)	0.210*	0.394***	0.192*	0.109
	(0.08)	(0.08)	(0.07)	(0.08)
First Project	-0.187	-0.313	-0.715	-0.503
	(0.32)	(0.46)	(0.37)	(0.27)
Clarity	-0.359	0.537	0.399	-0.449
	(0.52)	(0.26)	(0.40)	(0.56)
Costs Explained	1.055*	1.404**	1.212**	1.016**
	(0.37)	(0.44)	(0.36)	(0.33)
Photo	0.573	0.798**	.425*	0.257
	(0.27)	(0.24)	(0.20)	(0.23)
Video	1.402**	2.377***	1.675***	1.151*
	(0.43)	(0.36)	(0.32)	(0.39)
<i>Legitimacy</i>				
Credentials	0.281			0.176
	(0.15)			(0.14)
Quality of Video	1.272***			0.813**
	(0.23)			(0.23)
Offer "Thanks"	0.416			0.348
	(0.28)			(0.23)
Errors	-1.089***			-0.913**
	(0.24)			(0.25)
Detailed Explanation	1.266**			1.104*
	(0.37)			(0.36)
Famous Affilliate	2.903**			1.291
	(0.88)			(1.24)
Endorsements	0.198			0.267
	(0.34)			(0.40)
Past Success	1.564*			0.326
	(0.58)			(0.69)
<i>Charitable Signals</i>				
Charitable Codes		-0.285		-0.124
		(0.17)		(0.15)
Explicitly Philanthropic		0.270		0.094
		(0.40)		(0.21)
Log (# of Facebook Friends)		0.354		0.279
		(0.31)		(0.25)
<i>Embeddedness</i>				
Reciprocity			0.278***	0.201**
			(0.05)	(0.05)
Reciprocity^2			-0.008**	-0.006**
			(0.00)	(0.00)
Backer Embeddness			-0.034**	-0.030**
			(0.01)	(0.01)
Backer Experience			0.159***	0.149***
			(0.02)	(0.02)
Constant	1.015	-0.867	0.788	1.772*
Observations	510	510	510	510
r^2	0.33	0.22	0.39	0.46

Table 2: Estimating the Likelihood of Success

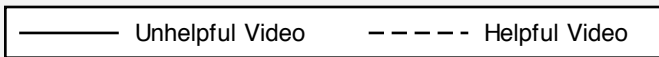
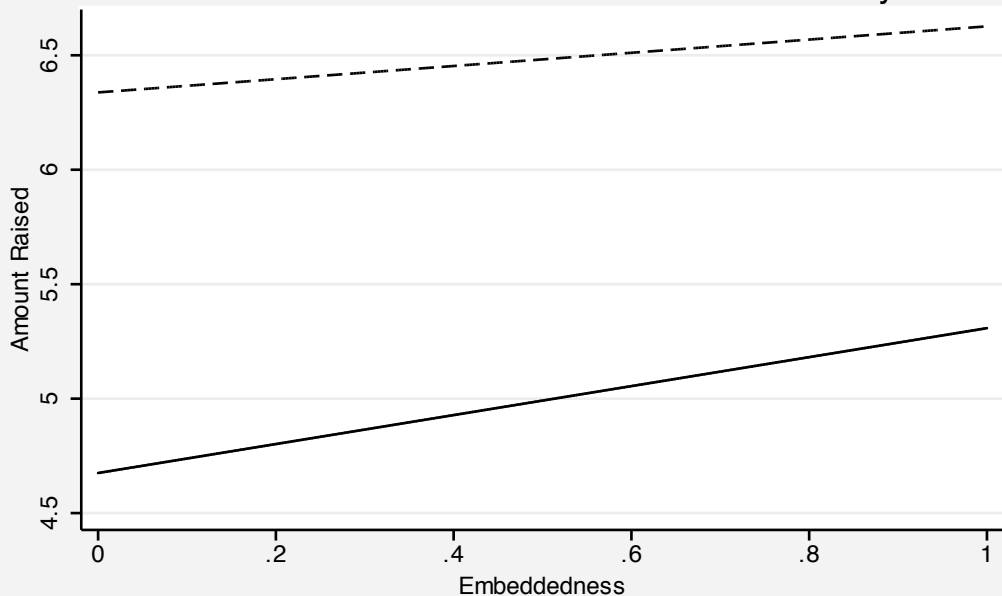
	(1)	(2)	(3)	(4)
Log (Goal)	-0.641*** (0.09)	-0.432*** (0.08)	-0.777*** (0.10)	-0.990*** (0.13)
First Project	-0.452* (0.22)	-0.239 (0.30)	-0.939*** (0.21)	-1.129*** (0.19)
Project Clarity	0.817 (0.45)	0.974* (0.40)	1.048* (0.52)	0.463 (0.51)
Costs Explained	0.057 (0.31)	0.315 (0.31)	0.188 (0.31)	-0.109 (0.30)
Photo	0.249 (0.29)	0.368 (0.25)	0.131 (0.30)	0.073 (0.35)
Video	0.937** (0.29)	1.376*** (0.27)	1.204*** (0.28)	0.899** (0.31)
<i>Legitimacy</i>				
Credentials	0.378* (0.15)			0.365 (0.20)
Quality of Video	0.911*** (0.23)			0.783** (0.28)
Offer "Thanks"	0.223 (0.13)			0.169 (0.21)
Errors	-0.813*** (0.21)			-0.775*** (0.21)
Detailed Explanation	0.875*** (0.26)			1.081*** (0.30)
Famous Affilliate	2.604* (1.21)			1.997 (3.17)
Endorsements	0.477 (0.62)			0.437 (0.65)
Past Success	1.864*** (0.56)			1.622* (0.73)
<i>Charitable Signals</i>				
Charitable Codes		-0.099 (0.10)		0.000 (0.14)
Explicitly Philanthropic		0.021 (0.31)		-0.115 (0.36)
Log (# of Facebook Friends)		0.203 (0.27)		0.083 (0.27)
<i>Embeddedness</i>				
Reciprocity			0.285*** (0.06)	0.230** (0.07)
Reciprocity^2			-0.006** (0.00)	-0.005 (0.00)
Backer Embeddness			-0.062 (0.05)	-0.051 (0.04)
Backer Experience			0.148*** (0.04)	0.148*** (0.03)
Constant	2.456** (0.83)	1.107 (0.75)	3.351*** (0.86)	4.919*** (1.08)
Observations	510	510	510	510
Pseudo r^2	0.2	0.1	0.27	0.33

Table 3: Interaction Effects

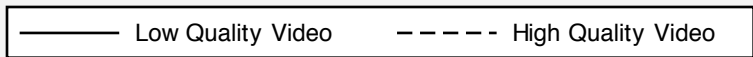
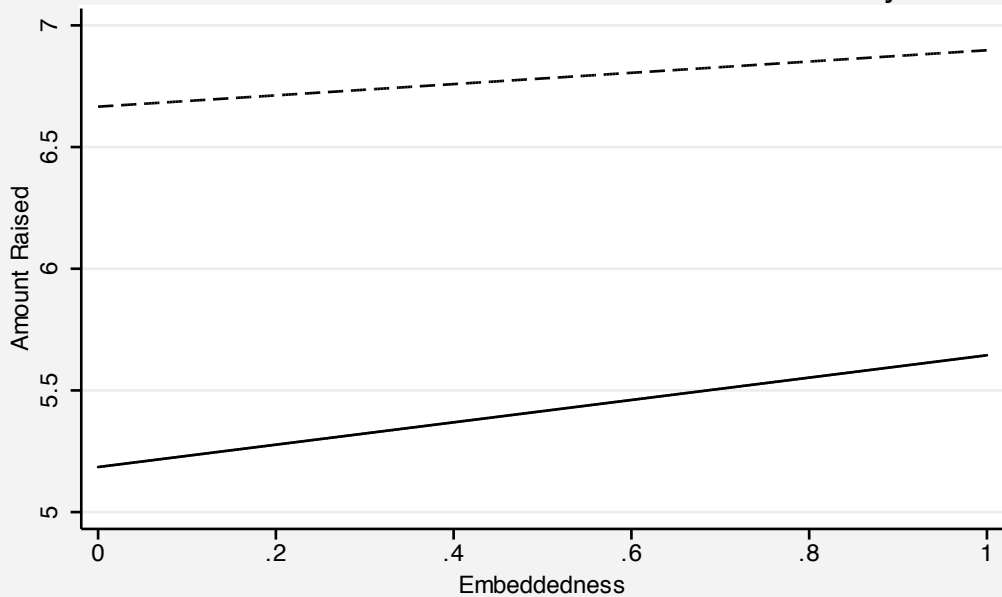
	(1)	(2)	(3)
	<i>Amount Raised</i>		
<i>Legitimacy</i>			
Credentials	0.216 (0.14)	0.212 (0.15)	0.207 (0.15)
Quality of Video		1.482*** (0.26)	1.180*** (0.21)
Offer "Thanks"	-0.053 (0.25)	0.311 (0.26)	0.295 (0.24)
Errors	-1.033** (0.30)	-0.819* (0.30)	-1.120** (0.33)
Detailed Explanation	1.142** (0.28)	1.175* (0.39)	1.227* (0.40)
Famous Affilliate	2.001* (0.88)	1.998* (0.80)	2.118* (0.91)
Endorsements	0.184 (0.29)	0.199 (0.31)	0.367 (0.35)
Past Success	0.589 (0.57)	0.568 (0.63)	0.702 (0.62)
<i>Embeddedness</i>			
Reciprocity	0.762*** (0.16)	0.517*** (0.10)	0.341*** (0.05)
Reciprocity^2	-0.031* (0.01)	-0.014** (0.00)	-0.009*** (0.00)
<i>Interactions</i>			
Reciprocity*Detailed	-0.436* (0.15)		
Reciprocity^2*Detailed	0.022 (0.01)		
Reciprocity*Video Quality		-0.259* (0.11)	
Reciprocity^2*Video Quality		0.007 (0.01)	
Reciprocity*Errors			0.305* (0.12)
Reciprocity^2*Errors			-0.017* (0.01)
Constant	0.813 (0.85)	0.988 (0.86)	2.936*** (0.54)
Observations	510	510	510
Pseudo r^2	0.4	0.39	0.4

Models control for: Log(goal), first time backer, project clarity, picture,

The Effect of Embeddedness on Video Clarity



The Effect of Embeddedness on Video Quality



The Effect of Embeddedness on The Error Penalty

