Proposal for the Advancing the Science of Science Funding small grant schema

Title: Risk perception and the crowdfunding of scientific projects
Date: September 29th, 2018

Proponents (PIs):
Dr. Chiara Franzoni, Associate Professor, School of Management, Politecnico di Milano, Leonardo da Vinci 32, Milan, Italy 20133; chiara.franzoni@polimi.it
CV: http://www.dig.polimi.it/uploads/media/Curriculum_CV_franzoni2018.pdf

Dr. Henry Sauermann, Associate Professor, ESMT Berlin and National Bureau of Economic Research, Schlossplatz 1, 10178 Berlin, Germany; henry.sauermann@esmt.org
CV: https://www.esmt.org/henry-sauermann

---

1. Partnering organization

We would like to explore a collaboration with Experiment.com (100 Avenue of Americas, FL 3 New York, NY 10013). Experiment.com is a web platform for the crowdfunding of scientific research projects. It is at present the largest platform for the crowdfunding of science, in terms of both the total number of projects funded (840) and the amount raised ($8M).
We have just completed an exploratory study using Experiment.com data, providing descriptive insights into the creators seeking funding, the projects they seek funding for, and the characteristics of the crowdfunding campaign (Sauermann, Franzoni, and Shafi 2018). For that study, we interacted repeatedly with Cindy Wu, Co-founder and general manager of Experiment.com (Cindy also participated in the NBER Advancing the Science of Science Funding Workshop). Our work with Experiment.com, data and our discussions with Cindy Wu, as well as scientists who have used Experiment.com have given us rich insights into the platform and new ideas for continuing our work in a new project. Preliminary discussion with Cindy Wu has confirmed the interest to explore new studies to conduct in collaboration. (see email attached)

2. Research idea

Background. Large funding programs are often criticized for being overly-conservative, with potentially negative implications for the pace of scientific discovery (Mazzucato 2015). Some observers have argued that crowdfunding could provide an alternative channel to support early-stage and high-risk projects that are unlikely to be funded in the traditional system (Cha, 2015). Our study of Experiment.com campaigns also provides preliminary evidence in support of this view, in the form of no correlation between funding success and the use of a language underlying risk and uncertainty in project descriptions (Sauermann, Franzoni, and Shafi 2018). This view is also corroborated by the observation that most crowdfunding campaigns provide little preliminary data or information about the feasibility of the project. Furthermore, follow-on interviews with scientists who received funding indeed suggest that some scientists see crowdfunding as suitable for early stage and risky work.
Although it is intriguing that the crowd may not care about risk when funding scientific research, it is not clear whether this is indeed the case, and if so, why. As such, we would like to study the perception of risk involved in research from the perspective of both scientists who use crowdfunding and of potential backers. In addition to furthering our understanding of the potential of crowdfunding for scientific research, the results of this study could also speak to important issues in the broader literature, such as differences between risk perceptions of experts and non-experts (Sjoberg 1999) or the potential of involving non-professional "citizens" in different stages of the research process (Bonney et al., 2014; Franzoni and Sauermann, 2014).

Research questions. Research questions that we could address in this project include:

- RQ1: What are relevant dimensions of perceived risk in the context of scientific research generally, and in crowdfunding in particular?
- RQ2: Are there systematic differences in the *perception* of risk concerning science projects between experts (professional scientists) and non-experts (potential backers in the crowd)?
- RQ3: What motivates scientists to start crowdfunding campaigns for their work? In particular, how important is the goal to support high-risk research and/or early-stage/pilot projects?
- RQ4: What motivates backers to support crowdfunding campaigns? In particular, what role does risk perception play in their funding decisions?

- RQ5: How does the perceived risk of research proposed in crowdfunding campaigns relate to actual project failure and other substantive project outcomes (for funded projects, but also for projects that are not funded but proceed anyways)?

Data and methodology. Answering the above research questions would require a range of different methods. Potential approaches include:

- **Interviews with creators and backers** would help us to explore RQ1 and also help us design approaches to address the other questions.
- **A survey of creators** at the time of starting a project could provide insights into RQ2 and RQ3. A follow-up survey after 1 year (sent to creators of successful as well as unsuccessful projects) could provide insights into RQ5.
- **An experimental study** could provide causal evidence regarding the effects of risk perception on funding decisions (RQ2; RQ4). For example, we could manipulate information about stated risk involved in the research proposals that seek crowdfunding (e.g. "the risk of failure of this project is: 80%"). Manipulations could further involve factors such as *salience* (e.g. displaying the risk measure near the project title V. at the bottom of the page), *gain/loss* framing (e.g. displaying likelihood of success V. risk of failure), or *objective/ subjective* nature of the information (e.g. presented as % V. presented as an expert's opinion).
- **Data from the actual campaign websites**, including "lab notes" that provide updates on the progress of research projects, as well as "project outcome" tabs could provide additional evidence for RQ5.

All of these approaches would benefit from close collaboration with Experiment.com. For example, we would like to draw on their knowledge and experience to design meaningful survey questions and on their networks to reach respondents. The experimental study might also be best implemented on the existing Experiment.com platform, with existing backers as subjects. Of course, we would seek to minimize the workload needed on the part of Experiment.com as well as the influence on their existing operations.

3. Resources and funding needed

The above ideas are very early-stage. As such, we request funding to do preliminary work and explore the different possibilities in a meeting with Experiment.com leadership. The requested funding will not cover all the costs of the actual research but we are confident that those costs could be covered by follow-up grants or existing internal resources at the proponents' institutions. The activities that we plan on undertaking include:

- 3 working meetings among the proponents, of approx. 2 days each, requiring EU-area flights and one night hotel each.
- 1 working meeting with the partner organization of 1 day, requiring intercontinental (EU-US) flights and two nights hotel.
- Defraying partner institution costs for technical feasibility study (experimental design on Experiment.com platform and for online surveys using existing Experiment.com databases)

No salary or fringe benefits are claimed. With respect to the above list of activities, the following costs are envisaged:

	Description	Franzoni	Sauermann	**TOTAL**
TRAVEL				
	3 meetings of 2 days among the proponents (Europe)	$ 1.800	$ 1.800	$ 3.600
	1 meeting proponents + partner organization (overseas)	$ 1.550	$ 1.550	$ 3.100
OTHER	Technical feasibility study experiment.com			$ 3.300
				$ 10.000

4. References

- Bonney, R., Shirk, J.L., Phillips, T.B., Wiggins, A., et al., 2014. Next steps for Citizen Science. Science 343, 1436-1437.
- Cha, A., 2015. Crowdfunding propels scientific research, Washington Post.
- Mazzucato, M. 2015. *The Entrepreneurial State. Debunking Public vs. Private Sector Myths*. New York: Anthem Press.
- Sauermann, H., Franzoni, C., Shafi, K. 2018. *Crowdfunding Scientific Research*. NBER Working paper n. 24402, NBER: Cambridge, MA.
- Sjoberg, L. 1999. Risk Perception by the Public and by Experts: A Dilemma in Risk Management. *Human Ecology Review* 6(2):1–9.

Attach: Letter of interest from potential partner organization

--
From: Cindy Wu <cindy@experiment.com>
Subject: Re: Your interest to investigate a potential collaboration with us
Date: 29 September 2018 18:12:21 CEST
To: Chiara Franzoni <chiara.franzoni@polimi.it>
Cc: Henry Sauermann <henry.sauermann@esmt.org>, Denny Luan <denny@experiment.com>

Sounds good to me! Let me know if you need anything additional from our end.

Cindy

On Sat, Sep 29, 2018 at 8:03 AM, Chiara Franzoni <chiara.franzoni@polimi.it> wrote:
Dear Cindy,

The Science of Science Funding program of NBER is going to assign mini-grants of $10K to teams of scientists that wish to collaborate with a private or public institution to advance the field.
Henry and I are about to submit a proposal which would involve collaborating with you, as we informally discussed in August.

If successful, the grants would pay only travel money to do meetings on our side. On yours, we are asking to compensate your time for checking the technical feasibility. We are putting in budget about 1/3 of the grant ($3.3K) for that.

At this stage, nothing is binding, in the sense that there is no definite commitment required on your side. There is no need of your formal approval. What you should be willing to do is to discuss with us whether a joint study is a good idea.
If you are willing to do so, it would be helpful if you can express your interest to investigate a potential collaboration to work with us by replying favourably to this email.
Thank you and all the best from Milan!

Chiara

--
Chiara Franzoni (Ph.D.)
Associate Professor

School of Management
Polytechnic University of Milan
Phone: +39-02-2399-4823
Email: chiara.franzoni@polimi.it

Mailing address: Piazza Leonardo da Vinci 32, Milan ITALY 20133

Office: 3.14. Building BL26. Bovisa campus. Via R. Lambruschini 4/b Milan

--