

# Fund What You Trust?

## Social Capital and Moral Hazard in Crowdfunding

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ABFER 2018



THE UNIVERSITY OF HONG KONG  
Faculty of Business and Economics

*“Our community is built on trust and communication”*

*Rules of Kickstarter*



# Crowdfunding

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- \* Crowdfunding is an increasingly important source of financing for new ventures and a fast-growing part of the Fintech industry.
- \* By industry estimates, the global volume of crowdfunding surpassed that of angel investing in 2015.
- \* Crowdfunding may be on its way to surpass the venture capital industry.



# We focus on reward-based crowdfunding

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- \* There are loan, equity, charity, and reward-based crowdfunding.
- \* In reward-based crowdfunding like Kickstarter, campaign backers commit funds in return for a promise to receive a reward.
- \* The reward is typically the product to be manufactured by the project being funded.



# Benefits of reward-based crowdfunding

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- \* Allows the entrepreneur to learn about the demand before investing in production.
- \* Removes potential barriers to financing due to biased investment decisions like gender.
- \* Complementary source of financing in addition to traditional forms of venture capital and angel investors.



# Moral hazard is the main cost in reward-based crowdfunding

- \* The theory suggests that moral hazard is the key determinant of crowdfunding campaign (Strausz, 2017 AER).
- \* A higher moral hazard risk predicts a lower likelihood of campaign success.
  - \* Backers commit funds before the entrepreneur invests in production.
  - \* Entrepreneur could embezzle the funds without investing and delivering the promised reward.



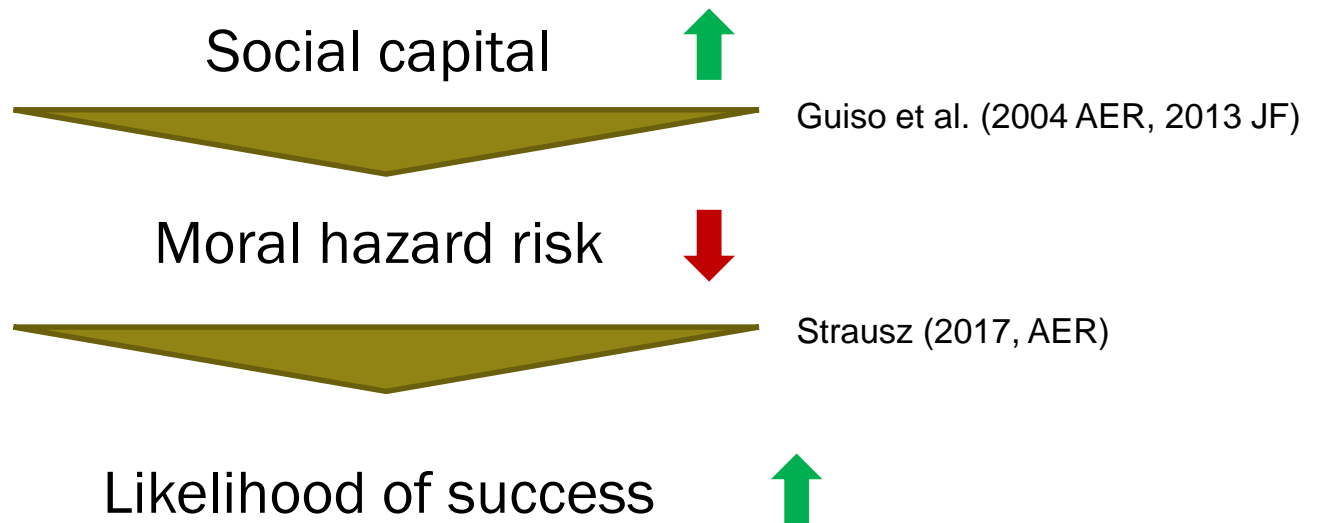
# Measuring moral hazard by SK

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- \* Ideally, we would like to directly test the relation between moral hazard and performance at the campaign level. But this is not feasible.
- \* The innovation of our paper is to exploit the tendency of regional social capital to generate trustworthy behavior through social norms, thereby mitigating the moral hazard in crowdfunding.



# The main hypothesis



- \* We hypothesize that entrepreneurs who reside in the U.S. counties with high levels of social capital have higher campaign success rates.





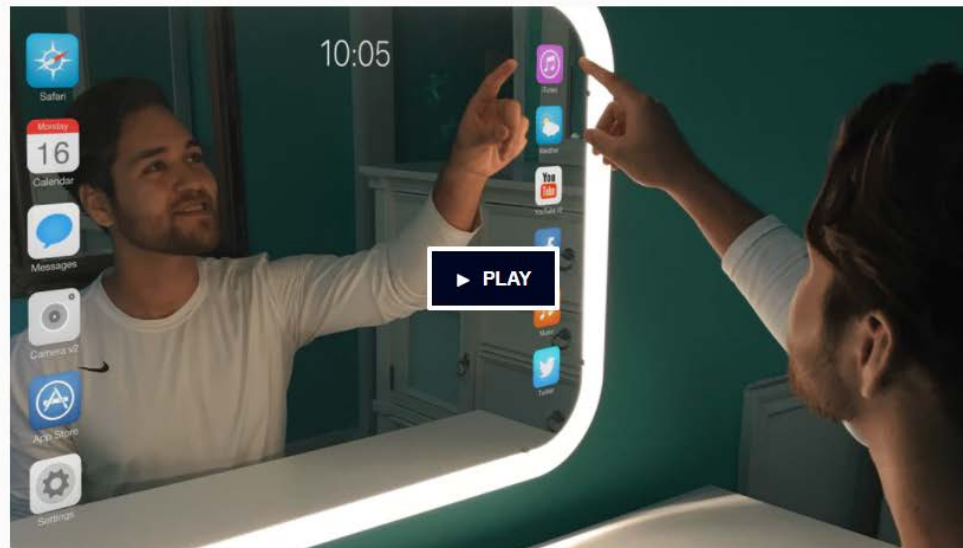
# How does a Kickstarter campaign work?



By Stephen Bonnain  
First created

## Eve Smart Mirror: Interactive Smart Mirror with an App Store

The Eve Smart Mirror is a touchscreen mirror that allows you to download over 500+ Applications like Uber, SoundCloud, Twitter, etc.



Hardware Houston, TX

**\$20,141**

pledged of \$10,000 goal

76

backers

21

days to go

Back this project

Remind me



All or nothing. This project will only be funded if it reaches its goal by Fri, November 17 2017 5:53 PM AWST.

[https://www.kickstarter.com/projects/743717037/eve-smart-mirror-interactive-smart-mirror-with-an?ref=category\\_location](https://www.kickstarter.com/projects/743717037/eve-smart-mirror-interactive-smart-mirror-with-an?ref=category_location)

# Creator overview

The image shows a screenshot of a web application interface. On the left, there is a sidebar with the text "ABOUT US" and a profile picture of Stephen Bonnain. Below the profile picture, it says "By Stephen Bonnain" and "First created". The main content area is titled "About the creator" and features a close button (X) in the top right corner. The profile name "Stephen Bonnain" is prominently displayed, followed by the location "Houston, TX". A paragraph of text reads: "My name is Stephen Bonnain, I'm the co-founder at Eve Mirrors. We are truly trying to build something that is of a kind but investing in my and my teams' product, we not only guarantee your satisfactory but we will exceed your expectations." Below this, there is a "Websites" section with links to "evemirror.com", "instagram.com", "facebook.com", and "twitter.com". At the bottom, there is a green checkmark next to the name "Dalton Metzler" and a lock icon next to the text "Last login Oct 26 2017". The background of the main content area is a blurred image of a smartphone home screen with various app icons like Calendar, Messages, and Settings.

ABOUT US

By Stephen Bonnain  
First created

Ev  
Wi  
The  
Appl

ABOUT THE CREATOR

Stephen Bonnain

Houston, TX

My name is Stephen Bonnain, I'm the co-founder at Eve Mirrors. We are truly trying to build something that is of a kind but investing in my and my teams' product, we not only guarantee your satisfactory but we will exceed your expectations.

**Websites**

[evemirror.com](http://evemirror.com)  
[instagram.com](https://www.instagram.com)  
[facebook.com](https://www.facebook.com)  
[twitter.com](https://twitter.com)

✓ Dalton Metzler

🔒 Last login Oct 26 2017

📍 Hardware 📍 Houston, TX

Back this project

will only be funded if it reaches its goal by Fri, M AWST.

# Strausz (2017, AER) campaign page

KICKSTARTER

## An Economic Theory of Crowdfunding

A Theory of Crowdfunding  
- a mechanism design approach with demand  
uncertainty and moral hazard

Roland Strausz\*

November 2, 2015

Help a theoretical economist  
to raise money for a  
submission fee and to gain 1st-  
hand experience in  
crowdfunding for his paper.

Created by  
Roland Strausz

36 backers pledged €170 to help bring this  
project to life.

[Campaign](#) [FAQ](#) [Updates <sup>13</sup>](#) [Comments <sup>8</sup>](#) [Community](#)

### About this project

📍 Berlin, Germany 🏛️ Academic

**€170**  
pledged of €110 goal

**36**  
backers

Yes, I am currently writing an academic paper on the subject of crowdfunding with the intention to publish it in an academic, peer-reviewed journal. Submissions to academic journals require a submission fee of about \$100, which I want to fund through crowdfunding. Since fees are about 10%, I have set the goal at €110. Any excess in contributions will be used for financing

### Support this project

[Pledge €1 or more](#)

If you think it is cool to crowdfund a paper on crowdfunding and want to fund me for the fun of it then this pledge of €1 is just for you.

ESTIMATED DELIVERY  
**Jul 2016**

10 backers

AER submission  
fee is 100 USD

# Kickstarter Data

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- \* Web-crawled near-comprehensive sample of Kickstarter campaigns from April 2009 to August 2017.
  - \* Initial data captures 86% of all campaigns.
- \* We include all US campaigns.
  - \* Estimate gender and race based on entrepreneur name.
  - \* Assign social capital index value based on location county.
- \* Final sample of 223,679 campaigns.
  - \* The largest sample of reward-based crowdfunding data used to date in the literature.



# Summary of the sample

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	# campaigns
Kickstarter total	364,332
Our raw data - all campaigns	315,017
<i>Coverage</i>	86%
Of which based in the US and location available	240,807
Of which completed	227,752
Of which all data available for	223,679

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# Number of campaigns by year

	Outcome			Total
	Successful	Unsuccessful	Suspended	
2009	386	463		849
2010	3,702	4,706	15	8,423
2011	10,859	12,938	42	23,839
2012	16,019	21,130	48	37,197
2013	16,361	20,058	45	36,464
2014	15,945	30,059	151	46,155
2015	13,309	23,269	287	36,865
2016	9,652	14,146	95	23,893
2017	4,587	5,366	41	9,994
Total	90,820	132,135	724	223,679



# How we measure social capital

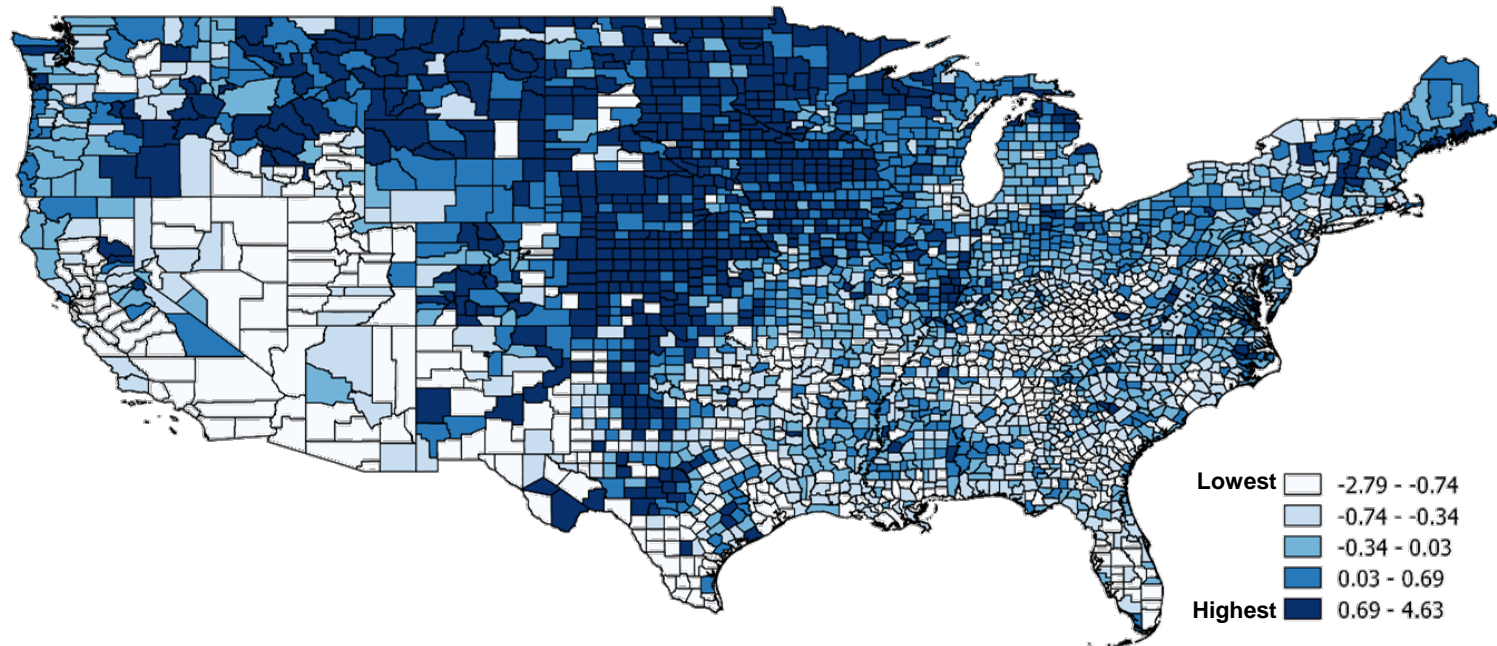
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- \* Methodology similar to that of Rupasingha, Goetz, and Freshwater (2006, JSE).
- \* Three proxies for social capital level:
  - \* Association density (10 different types of associations<sup>1</sup>).
  - \* Registered (charitable) organization density.
  - \* Voter turnout in presidential elections.
- \* Principal component analysis to calculate a social capital index based on these proxies for each US county.

*Including civic and social organizations, bowling centers, golf courses and country clubs, fitness and recreational sports centers, sports teams and clubs, religious organizations, political organizations, labor unions and similar labor organizations, business associations, and professional organizations*



# Social capital index by county (2014)



- \* By construction, the mean of the SK index is zero and standard deviation one across all counties.



# SK and campaign outcomes

- \* Logit regressions: Expected: +

$$Successful_j = \alpha_0 + \alpha_1 \times SK_j + \beta \times X_j + \epsilon_j$$

- \* OLS regressions:

Expected: +

$$\ln(1 + Pledged/Goal)_i = \alpha_0 + \alpha_1 \times SK_i + \beta \times X_i + \epsilon_i$$

where *Successful<sub>j</sub>* is a dummy taking value 1 if campaign *j* is successful, and *Pledged/Goal* the ratio of amount pledged to goal. We include gender and race fixed effects, year-month joint fixed effects (101 months), state fixed effects (50 states), campaign number fixed effects, and sub-category-year joint fixed effects (169 sub-categories times 9 years).



	Successful			ln(1+Pledged/Goal)	
	(1) Logit	(2) Logit	(3) OLS	(4) OLS	(5) OLS
Social capital (SK)	0.1620*** (0.0269)	0.1688*** (0.0242)	0.0291*** (0.0044)	0.0218*** (0.0057)	0.0206*** (0.0046)
ln(Personal income)		0.0945*** (0.0092)	0.0162*** (0.0017)		0.0137*** (0.0018)
ln(PI per capita)		0.0171 (0.0547)	0.0035 (0.0095)		0.0245* (0.0134)
ln(Goal amount)		-0.4205*** (0.0146)	-0.0700*** (0.0024)		-0.0888*** (0.0036)
ln(Campaign length)		-0.4465*** (0.0331)	-0.0833*** (0.0070)		-0.0553*** (0.0090)
Staff pick		2.6260*** (0.1112)	0.4396*** (0.0133)		0.4791*** (0.0191)
Gender dummies	No	Yes	Yes	No	Yes
Race dummies	No	Yes	Yes	No	Yes
Year-month FE	No	Yes	Yes	No	Yes
State FE	No	Yes	Yes	No	Yes
Campaign N FE	No	Yes	Yes	No	Yes
Sub-category-Year FE	No	Yes	Yes	No	Yes
N	222,955	215,329	222,818	222,949	222,813
$R^2$			0.279	0.001	0.346
Pseudo $R^2$	0.002	0.211			

# Identification from a quasi-experiment

- \* Kickstarter announced a rule change on September 20, 2014 to strengthen entrepreneurs' obligation to provide backers with the promised rewards.
  - \* Old rule: "Project Creators agree to make a good faith attempt to fulfill each reward by its Estimated Delivery Date."
  - \* New rule: "When a project is successfully funded, the creator must complete the project and fulfill each reward" backers."
- \* Kickstarter also explicitly states that entrepreneurs who are unable to stand by the promises they made in their projects may be subject to legal action by backers.



# Identification from a quasi-experiment

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- \* TechCrunch writes: “Kickstarter also reminds creators that they need to be honest and not make material misrepresentations in their communication to backers.”
- \* SlashGear titles its summary: “Kickstarter changes rules so nobody runs off with your money.”
- \* We anticipate that in general moral hazard issue gets weaker afterwards, thereby reducing the effect of SK on crowdfunding campaign outcomes.



# Identification from a quasi-experiment

Expected: -

$$\begin{aligned} \text{Successful}_i = & \alpha_0 + \alpha_1 \times \text{Post}_i \times \text{SK}_i + \alpha_2 \times \text{Post}_i \\ & + \alpha_3 \times \text{SK}_i + \beta \times X_i + \epsilon_i \end{aligned}$$

Expected: -

$$\begin{aligned} \ln(1 + \text{Pledged}/\text{Goal})_i = & \alpha_0 + \alpha_1 \times \text{Post}_i \times \text{SK}_i + \alpha_2 \times \text{Post}_i \\ & + \alpha_3 \times \text{SK}_i + \beta \times X_i + \epsilon_i \end{aligned}$$



Panel A: Diff-in-Diff regressions on *Successful*

	Actual			Placebo tests (logit)	
	(1) Logit	(2) Logit	(3) OLS	(4) - 1 year	(5) + 1 year
Post x SK	-0.0608** (0.0281)	-0.0584** (0.0283)	-0.0112** (0.0047)	0.0309 (0.0259)	-0.0250 (0.0331)
Post change	0.3432*** (0.1201)	-0.0727 (0.0962)	-0.0119 (0.0149)	-0.0291 (0.0756)	0.3243*** (0.1125)
Social capital (SK)	0.2198*** (0.0297)	0.2140*** (0.0284)	0.0268 (0.0584)	0.1442*** (0.0308)	0.1723*** (0.0414)
Controls	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
Campaign N FE	Yes	Yes	Yes	Yes	Yes
Sub-category FE	Yes	Yes	Yes	Yes	Yes
Year-month FE	No	Yes	Yes	Yes	Yes
County FE	No	No	Yes	No	No
N	83,552	83,552	83,135	78,165	64,652
$R^2$			0.295		
Pseudo $R^2$	0.228	0.237		0.193	0.335



Panel B: Diff-in-Diff regressions on  $\ln(1+Pledged/Goal)$

	Actual			Placebo tests	
	(1) OLS	(2) OLS	(3) OLS	(4) - 1 year	(5) + 1 year
Post x SK	-0.0144*** (0.0046)	-0.0133*** (0.0048)	-0.0127*** (0.0047)	0.0027 (0.0043)	-0.0052 (0.0051)
Post change	0.0501*** (0.0189)	-0.0002 (0.0130)	0.0002 (0.0133)	0.0010 (0.0164)	0.0413** (0.0179)
Social capital (SK)	0.0277*** (0.0048)	0.0258*** (0.0047)	0.0412 (0.0596)	0.0226*** (0.0061)	0.0174*** (0.0054)
Controls	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
Campaign N FE	Yes	Yes	Yes	Yes	Yes
Sub-category FE	Yes	Yes	Yes	Yes	Yes
Year-month FE	No	Yes	Yes	Yes	Yes
County FE	No	No	Yes	No	No
N	83,609	83,609	83,133	78,192	64,751
R <sup>2</sup>	0.322	0.330	0.350	0.265	0.440



# Triple diffs by product riskiness

Hardware and Product Design are most obviously related to developing and manufacturing a product that does not yet exist, making them more likely to fail to deliver and hence arguably more prone to moral hazard.

Expected: -

$$\begin{aligned} \text{Successful}_i = & \alpha_0 + \alpha_1 \times \text{Post}_i \times \text{Risky category}_i \times \text{SK}_i \\ & + \alpha_2 \times \text{Post}_i \times \text{SK}_i + \alpha_3 \times \text{Post}_i \times \text{Risky category}_i \\ & + \alpha_4 \times \text{Post}_i + \alpha_5 \times \text{Risky category}_i \times \text{SK}_i \\ & + \alpha_6 \times \text{SK}_i + \beta \times X_i + \epsilon_i \end{aligned}$$

Expected: -

$$\begin{aligned} \ln(1 + \text{Pledged}/\text{Goal})_i = & \alpha_0 + \alpha_1 \times \text{Post}_i \times \text{Risky category}_i \times \text{SK}_i \\ & + \alpha_2 \times \text{Post}_i \times \text{SK}_i + \alpha_3 \times \text{Post}_i \times \text{Risky category}_i \\ & + \alpha_4 \times \text{Post}_i + \alpha_5 \times \text{Risky category}_i \times \text{SK}_i \\ & + \alpha_6 \times \text{SK}_i + \beta \times X_i + \epsilon_i \end{aligned}$$





	Successful			ln(1+Pledged/Goal)		
	(1) Logit	(2) Logit	(3) OLS	(4) OLS	(5) OLS	(6) OLS
Post x Risky cat. x SK	-0.0969*** (0.0290)	-0.0855*** (0.0305)	-0.0092 (0.0066)	-0.0465*** (0.0054)	-0.0460*** (0.0046)	-0.0427*** (0.0074)
Post x SK	-0.0497* (0.0277)	-0.0473* (0.0278)	-0.0103** (0.0049)	-0.0110*** (0.0039)	-0.0097** (0.0041)	-0.0097** (0.0042)
Post x Risky cat.	0.9835* (0.5686)	1.1532* (0.6168)	0.2230** (0.1053)	0.1944 (0.1218)	0.2208* (0.1247)	0.2226* (0.1180)
Post change	0.2785*** (0.1028)	-0.1765 (0.1348)	-0.0287 (0.0200)	0.0383*** (0.0146)	-0.0165 (0.0195)	-0.0166 (0.0198)
Risky cat. x SK	-0.0606 (0.0398)	-0.0669 (0.0431)	-0.0196*** (0.0053)	0.0133 (0.0142)	0.0133 (0.0150)	0.0063 (0.0125)
Social capital (SK)	0.2198*** (0.0303)	0.2143*** (0.0289)	0.0217 (0.0569)	0.0263*** (0.0051)	0.0243*** (0.0050)	0.0340 (0.0581)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Campaign N FE	Yes	Yes	Yes	Yes	Yes	Yes
Sub-category FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-month FE	No	Yes	Yes	No	Yes	Yes
County FE	No	No	Yes	No	No	Yes
N	83,552	83,552	83,135	83,609	83,609	83,133
$R^2$			0.298	0.325	0.333	0.353
Pseudo $R^2$	0.230	0.240				

# Additional results

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- \* Campaign suspension.
- \* Cross-sectional variations of the SK effect in terms of the severity of moral hazard issue:
  - \* Entrepreneur characteristics (individual vs. team and new comers vs. veterans).
  - \* Campaign characteristics (small vs. large goal amount and ordinary vs. staff pick campaigns).
  - \* Regional characteristics (poor vs. rich counties and large city vs. suburban).
  - \* Campaign timing (high vs. low EPU and sentiment).



# SK reduces the likelihood of campaign suspension

	(1) Logit	(2) Logit	(3) Logit	(4) Logit	(5) Logit
Social capital (SK)	-0.1227** (0.0566)	-0.2595*** (0.0899)	-0.2687*** (0.0901)	-0.4310*** (0.1537)	-0.0173 (0.0806)
ln(Personal income)		-0.0326 (0.0393)	-0.0340 (0.0393)	-0.0458 (0.0461)	0.0752** (0.0379)
ln(PI per capita)		0.4509** (0.1901)	0.4617** (0.1903)	1.0622*** (0.2987)	-0.0856 (0.1885)
ln(Goal amount)		-0.1178** (0.0470)	-0.1285*** (0.0493)	-0.1328*** (0.0481)	-0.1461*** (0.0439)
ln(Campaign length)		0.2712** (0.1223)	0.2360* (0.1235)	0.2504** (0.1241)	0.4108*** (0.1310)
Gender dummies	No	Yes	Yes	Yes	Yes
Race dummies	No	Yes	Yes	Yes	Yes
Campaign N FE	No	No	Yes	Yes	Yes
State FE	No	No	No	Yes	No
Year FE	No	No	No	No	Yes
N	223,679	223,678	220,964	218,906	220,118
Pseudo $R^2$	0.000	0.009	0.010	0.017	0.044

# SK effect is stronger for campaigns created by individual entrepreneurs

Panel A: Individual entrepreneur vs. a group or a company

	Successful		ln(1+Pledged/Goal)	
	(1) Logit	(2) OLS	(3) OLS	(4) OLS
Individual x SK	0.0557*** (0.0200)	0.0071** (0.0036)	0.0137*** (0.0044)	0.0116*** (0.0044)
Social capital (SK)	0.1333*** (0.0298)	0.0021 (0.0113)	0.0116* (0.0063)	0.0044 (0.0115)
Individual	-0.2901*** (0.0265)	-0.0496*** (0.0048)	-0.0546*** (0.0049)	-0.0536*** (0.0050)
County controls	Yes	Yes	Yes	Yes
Campaign controls	Yes	Yes	Yes	Yes
Race controls	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes
State FE	Yes	No	Yes	No
Campaign N FE	Yes	Yes	Yes	Yes
Sub-category-Year FE	Yes	Yes	Yes	Yes
County FE	No	Yes	No	Yes
N	215,329	222,412	222,813	222,407
R <sup>2</sup>		0.292	0.345	0.359
Pseudo R <sup>2</sup>	0.208			

# SK effect is weaker for entrepreneurs with prior track record

Panel B: Prior track record

	Successful		ln(1+Pledged/Goal)	
	(1) Logit	(2) OLS	(3) OLS	(4) OLS
Social capital (SK)	0.1847*** (0.0253)	0.0098 (0.0110)	0.0252*** (0.0047)	0.0166 (0.0107)
2nd campaign x SK	-0.0512* (0.0265)	-0.0073 (0.0046)	-0.0142*** (0.0051)	-0.0142*** (0.0052)
3rd campaign x SK	-0.1757*** (0.0505)	-0.0309*** (0.0088)	-0.0436*** (0.0091)	-0.0448*** (0.0091)
4th or higher x SK	-0.2058*** (0.0779)	-0.0413*** (0.0114)	-0.0688*** (0.0193)	-0.0736*** (0.0197)
2nd campaign	0.2569*** (0.0433)	0.0503*** (0.0078)	0.0669*** (0.0107)	0.0657*** (0.0104)
3rd campaign	0.2720*** (0.0648)	0.0526*** (0.0110)	0.1066*** (0.0154)	0.1030*** (0.0148)
4th or higher	0.6747*** (0.1155)	0.1101*** (0.0167)	0.2536*** (0.0324)	0.2429*** (0.0314)
County controls	Yes	Yes	Yes	Yes
Campaign controls	Yes	Yes	Yes	Yes
Gender and race	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes
State FE	Yes	No	Yes	No
Sub-category-Year FE	Yes	Yes	Yes	Yes
County FE	No	Yes	No	Yes
<b>T</b> N	215,395	222,448	222,849	222,443
<b>F</b> $R^2$		0.294	0.345	0.359
Pseudo $R^2$	0.210			



# SK effect is weaker for large campaigns and staff-pick campaigns

	Successful				ln(1+Pledged/Goal)			
	(1) Logit	(2) OLS	(3) Logit	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS
Large x SK	-0.0337* (0.0189)	-0.0109*** (0.0035)			-0.0056* (0.0030)	-0.0045 (0.0032)		
Staff pick x SK			-0.1024*** (0.0359)	-0.0026 (0.0056)			-0.0283*** (0.0064)	-0.0151** (0.0068)
Social capital (SK)	0.1820*** (0.0238)	0.0116 (0.0111)	0.1737*** (0.0241)	0.0069 (0.0109)	0.0232*** (0.0049)	0.0141 (0.0109)	0.0226*** (0.0046)	0.0131 (0.0108)
County controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Campaign controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gender and race	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	No	Yes	No	Yes	No	Yes	No
Campaign N FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sub-category-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County FE	No	Yes	No	Yes	No	Yes	No	Yes
N	215,329	222,412	215,329	222,412	222,813	222,407	222,813	222,407
R <sup>2</sup>		0.294		0.294	0.346	0.360	0.346	0.360
Pseudo R <sup>2</sup>	0.211		0.211					



# SK effect is stronger for campaigns located at poorer counties and larger cities

	Successful				ln(1+Pledged/Goal)			
	(1) Logit	(2) OLS	(3) Logit	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS
High PI/Capita x SK	-0.0102 (0.0250)	-0.0230*** (0.0087)			-0.0035 (0.0051)	-0.0251*** (0.0083)		
Large city x SK			0.1417*** (0.0253)	0.0090 (0.0054)			0.0192*** (0.0043)	0.0096* (0.0054)
Large city			0.1826*** (0.0204)	0.0314*** (0.0057)			0.0286*** (0.0039)	0.0322*** (0.0049)
Social capital (SK)	0.1746*** (0.0246)	0.0152 (0.0114)	0.0737*** (0.0266)	0.0014 (0.0110)	0.0220*** (0.0049)	0.0212** (0.0107)	0.0067 (0.0051)	0.0064 (0.0115)
County controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Campaign controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gender and race	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	No	Yes	No	Yes	No	Yes	No
Campaign N FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sub-category-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County FE	No	Yes	No	Yes	No	Yes	No	Yes
N	215,329	222,412	215,329	222,412	222,813	222,407	222,813	222,407
R <sup>2</sup>		0.294		0.294	0.346	0.360	0.346	0.360
Pseudo R <sup>2</sup>	0.211		0.211					





# SK effect is stronger for campaigns at high EPU and low sentiment periods

	Successful				ln(1+Pledged/Goal)			
	(1) Logit	(2) OLS	(3) Logit	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS
High EPU x SK	0.0083 (0.0180)	0.0088*** (0.0032)			0.0054* (0.0030)	0.0091*** (0.0030)		
High sent. x SK			-0.0110 (0.0175)	-0.0086** (0.0035)			-0.0024 (0.0027)	-0.0056** (0.0028)
Social capital (SK)	0.1652*** (0.0241)	0.0024 (0.0110)	0.1938*** (0.0302)	0.0195 (0.0141)	0.0184*** (0.0045)	0.0076 (0.0106)	0.0259*** (0.0056)	0.0237** (0.0111)
County controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Campaign controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gender and race	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	No	Yes	No	Yes	No	Yes	No
Campaign N FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sub-category-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County FE	No	Yes	No	Yes	No	Yes	No	Yes
N	215,329	222,412	178,842	182,062	222,813	222,407	182,490	182,059
R <sup>2</sup>		0.294		0.272	0.346	0.360	0.303	0.320
Pseudo R <sup>2</sup>	0.211		0.199					





# Goal amount

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- \* Strausz's (2017) model predicts that moral hazard affects the likelihood of campaign success is through the higher-than-efficient goal amounts required.
- \* This is to incentivize the entrepreneur to invest in production instead of appropriating the funds.
- \* If social capital mitigates moral hazard, it should thus have a negative relationship with goal amounts.



# Goal amount

	(1) OLS	(2) OLS	(3) OLS
Social capital (SK)	-0.0942*** (0.0142)	-0.0212** (0.0101)	-0.0224** (0.0101)
ln(Personal income)		0.0478*** (0.0035)	0.0478*** (0.0035)
ln(PI per capita)		0.2050*** (0.0188)	0.2056*** (0.0187)
Gender dummies	No	Yes	Yes
Race dummies	No	Yes	Yes
Year-month FE	No	Yes	Yes
State FE	No	Yes	Yes
Campaign N FE	No	Yes	Yes
Sub-category FE	No	Yes	No
Sub-category-Year FE	No	No	Yes
N	222,954	222,918	222,818
$R^2$	0.002	0.193	0.205

# Alternative Stories

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- \* Social capital may also be related to:
  - \* Risk aversion
    - \* If SK is negatively related to risk attitude, then high SK may be related to campaign outcome due to low goal amount set by risk-averse creators.
  - \* Quality of project
    - \* Projects from high SK counties might have higher qualities that are hard to control for.
  - \* Social network
    - \* SK is proxied for how many friends who are willing to back up the creators.



# SK and risk aversion

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- \* Risk-averse entrepreneurs may ask lower goal amounts, thereby increasing the likelihood of campaign success rate.
- \* If SK is positively related to entrepreneurs' risk aversion, the omitted risk aversion variable may also explain our main result.



# SK and risk aversion

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- \* First, SK is likely to represent something of an economic safety net, so we anticipate that SK should be negatively related to risk aversion.
- \* Second, the existing literature suggests that individuals in high-social-capital areas make more risky investments. For example, Guiso et al. (2004) show that high social capital is associated with significantly more investment in stocks and less in cash.



# SK and risk aversion

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- \* As a robustness check, we also perform an analysis controlling for the entrepreneur's cultural uncertainty aversion. We follow the methodology used by Pan, Siegel, and Wang (2017), exploiting the differences in risk attitudes between different cultures by the last names.
- \* We assign each entrepreneur a risk appetite value based on Hofstede's (2001) Uncertainty Avoidance Index (UAI).



	Successful			ln(1+Pledged/Goal)	
	(1) Logit	(2) Logit	(3) OLS	(4) OLS	(5) OLS
Social capital (SK)	0.1773*** (0.0275)	0.2271*** (0.0322)	0.0379*** (0.0054)	0.0275*** (0.0063)	0.0294*** (0.0053)
Uncertainty avoidance	0.0008 (0.0005)	0.0029*** (0.0005)	0.0005*** (0.0001)	0.0002 (0.0002)	0.0004*** (0.0001)
ln(Personal income)		0.1122*** (0.0106)	0.0188*** (0.0019)		0.0170*** (0.0019)
ln(PI per capita)		-0.0623 (0.0656)	-0.0093 (0.0109)		0.0090 (0.0134)
ln(Goal amount)		-0.4544*** (0.0159)	-0.0736*** (0.0026)		-0.0915*** (0.0037)
ln(Campaign length)		-0.4642*** (0.0348)	-0.0853*** (0.0069)		-0.0580*** (0.0071)
Staff pick		2.6762*** (0.1162)	0.4408*** (0.0150)		0.4742*** (0.0182)
Gender dummies	No	Yes	Yes	No	Yes
Race dummies	No	Yes	Yes	No	Yes
Year-month FE	No	Yes	Yes	No	Yes
State FE	No	Yes	Yes	No	Yes
Campaign N FE	No	Yes	Yes	No	Yes
Sub-category-Year FE	No	Yes	Yes	No	Yes
N	111,652	108,030	111,515	111,652	111,515
$R^2$			0.282	0.001	0.350
Pseudo $R^2$	0.002	0.218 <sup>39</sup>			



# SK and quality of project

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- \* Creators from high social capital counties might come up with better quality projects that are controlled in our regressions.
- \* The concern can be mitigated by our SK\*experience results.
  - \* If both measures are an indicator of project quality, we should not find a negative coefficient for the interaction term.





# SK and network

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- \* The construction of social capital index contains the flavour of the social network at the regional level.
- \* So our results may be a social network phenomenon but not a moral hazard story.
  - \* Ting Xu (2017) shows that on average, only 19% of campaign backers are from the same city as the entrepreneur.
  - \* Our identification of post\*SK is at odds with this alternative story.



# Conclusion

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- \* We study the impact of moral hazard issues on crowdfunding campaigns.
- \* Our innovation is utilizing the well-documented tendency of social capital to generate trustworthy behaviour and thereby mitigate moral hazard
- \* We find a strong positive relationship between social capital and crowdfunding success rates.
- \* The effect of social capital is strongest among campaigns likely to be more prone to suffer from moral hazard.



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# Thank You

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# APPENDIX



# Summary statistics

## *Campaign volumes*

	Mean	Std	p25	p50	p75
<b>Campaign volumes</b>					
Campaigns/capita	0.008	0.020	0.000	0.000	0.000
Sought/capita	0.128	0.538	0.000	0.000	0.000
Sought/PI	3.088	12.672	0.000	0.000	0.000
<b>County variables</b>					
SK	-0.001	0.980	-0.644	-0.168	0.444
Population ('000)	88.730	189.061	11.026	25.770	67.234
PI ('000)	3.943	9.900	0.376	0.879	2.473
PI/capita ('000)	37.746	9.860	31.039	35.753	42.163
<b>Timing variables</b>					
EPU	131.802	31.940	107.566	125.683	155.159
Sentiment	-0.275	0.215	-0.349	-0.246	-0.174
N	97,402				



# Summary statistics

## *Cross-sectional campaign data*

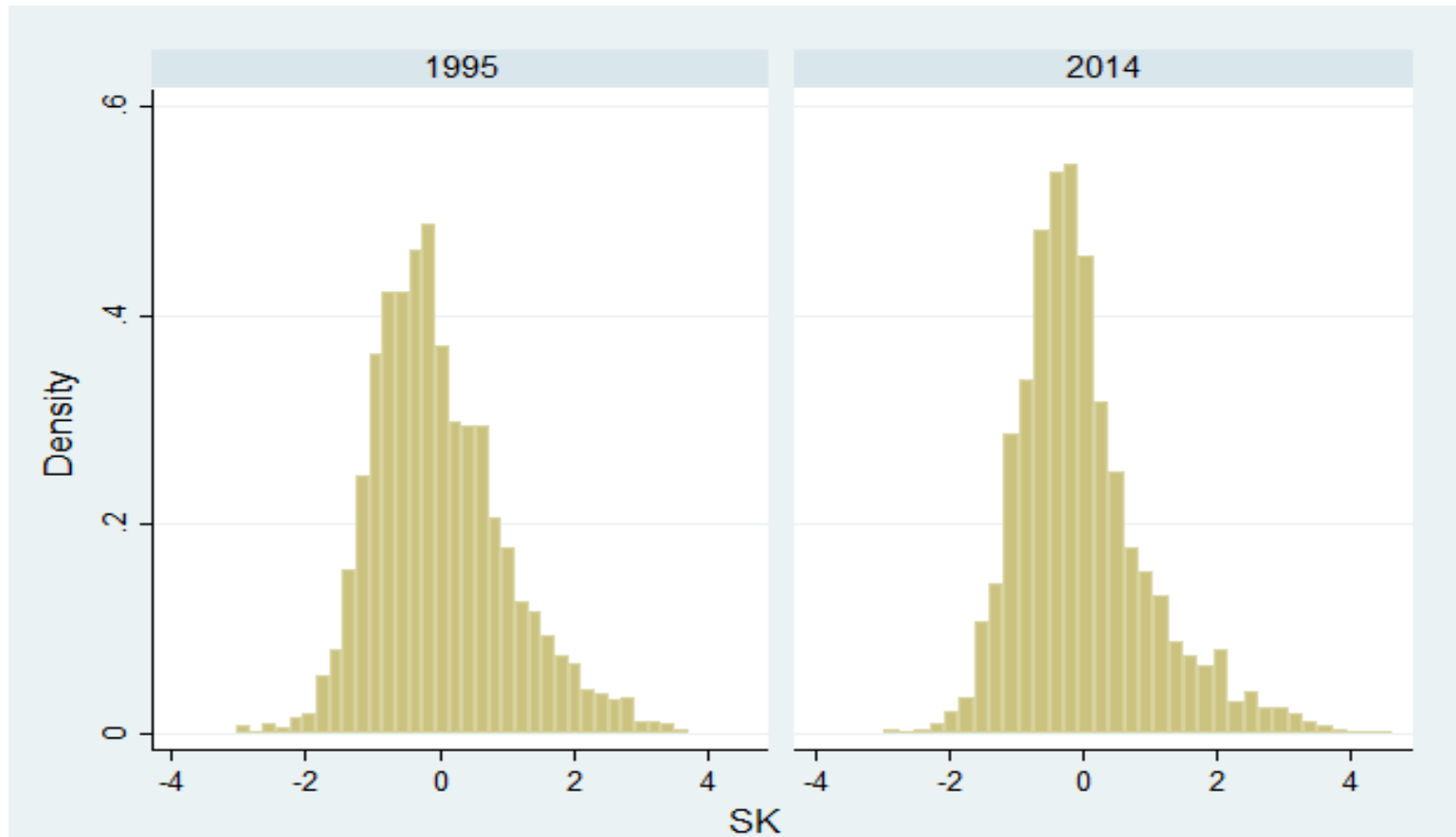
	Mean	Std	p25	p50	p75
<b>Campaign outcomes</b>					
Successful	0.406	0.491	0.000	0.000	1.000
Failed	0.506	0.500	0.000	1.000	1.000
Canceled	0.085	0.279	0.000	0.000	0.000
Suspended	0.003	0.057	0.000	0.000	0.000
Pledged/Goal	0.792	1.467	0.008	0.205	1.091
Amount pledged ('000)	17.445	40.137	2.000	5.000	15.000
\$ per backer	69.664	72.014	27.500	50.000	84.459
<b>County variables</b>					
SK	-0.488	0.661	-1.058	-0.430	-0.024
Personal income ('000)	112.120	143.750	18.189	51.414	147.538
PI per capita ('000)	55.511	26.681	41.025	47.986	55.881
<b>Campaign variables</b>					
Goal amount ('000)	17.445	40.137	2.000	5.000	15.000
Camp. length (days)	34.380	12.860	30.000	30.000	38.000
Staff pick	0.074	0.262	0.000	0.000	0.000

# Summary statistics

## *Cross-sectional campaign data*

	Mean	Std	p25	p50	p75
<b>Entrepreneur variables</b>					
Female	0.186	0.389	0.000	0.000	0.000
Male	0.470	0.499	0.000	0.000	1.000
No gender	0.344	0.475	0.000	0.000	1.000
White	0.550	0.497	0.000	1.000	1.000
Black	0.014	0.119	0.000	0.000	0.000
Asian	0.022	0.146	0.000	0.000	0.000
Hispanic	0.038	0.192	0.000	0.000	0.000
No race	0.375	0.484	0.000	0.000	1.000
N prior campaigns	0.416	2.371	0.000	0.000	0.000
N prior succ.	0.256	1.909	0.000	0.000	0.000
N prior failed	0.115	0.722	0.000	0.000	0.000
N prior canceled	0.045	0.303	0.000	0.000	0.000
N prior suspended	0.000	0.020	0.000	0.000	0.000
<b>Timing variables</b>					
EPU	124.595	36.149	93.501	114.654	157.496
Sentiment	-0.183	0.146	-0.305	-0.195	-0.082
N	223,679				

# Distribution of social capital index across counties





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# APPENDIX – DEFINITIONS OF SOCIAL CAPITAL



# What is social capital?

- \* Networks of relationships and communities around economic agents have an impact on their behaviour and also enable them to do things they otherwise could not - this is generally referred to as social capital
- \* The literature includes a vast number of different precise definitions for social capital. Durlauf and Fafchamps (2005) summarise the common elements of different definitions:
  - 1 \* *Social capital generates positive externalities for members of a group*
  - 2 \* *These externalities are achieved through shared trust, norms, and values and their consequent effects on expectations and behaviour*
  - 3 \* *Shared trust, norms, and values arise from informal forms of organizations based on social networks and associations*



# What is social capital?

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- \* The concept of social capital has inspired a vast amount of literature across economics, social sciences, and a number of other disciplines
- \* However (or perhaps as a result), the definition of social capital remains elusive:
  - \* *“Social capital...refers to features of social organization, such as trust, norms, and networks that can improve the efficiency of society...” (Putnam, 1993)*
  - \* *“...those persistent and shared beliefs and values that help a group overcome the free rider problem in the pursuit of socially valuable activities” (Guiso, Sapienza, and Zingales, 2011)*
  - \* *“Social capital generally refers to trust, concern for one’s associates, a willingness to live by the norms of the community and to punish those who do not” (Bowles and Gintis, 2002)*

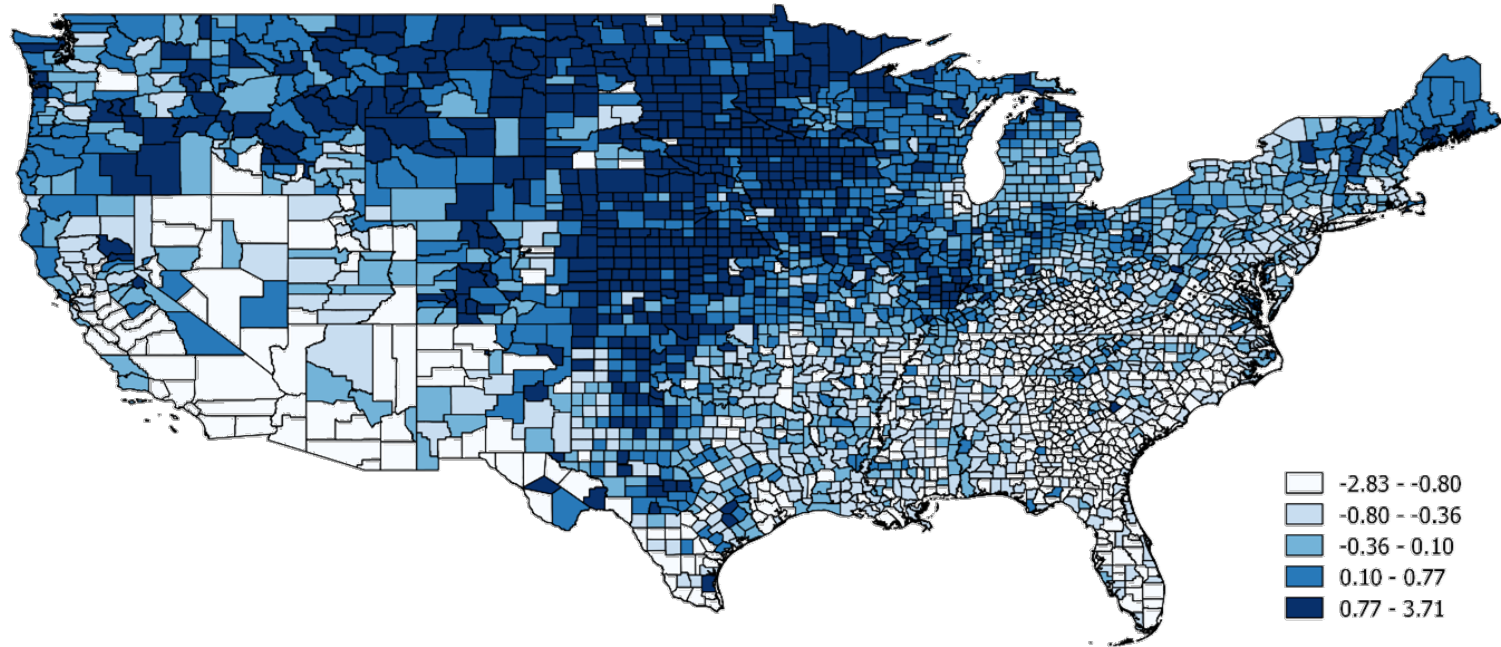


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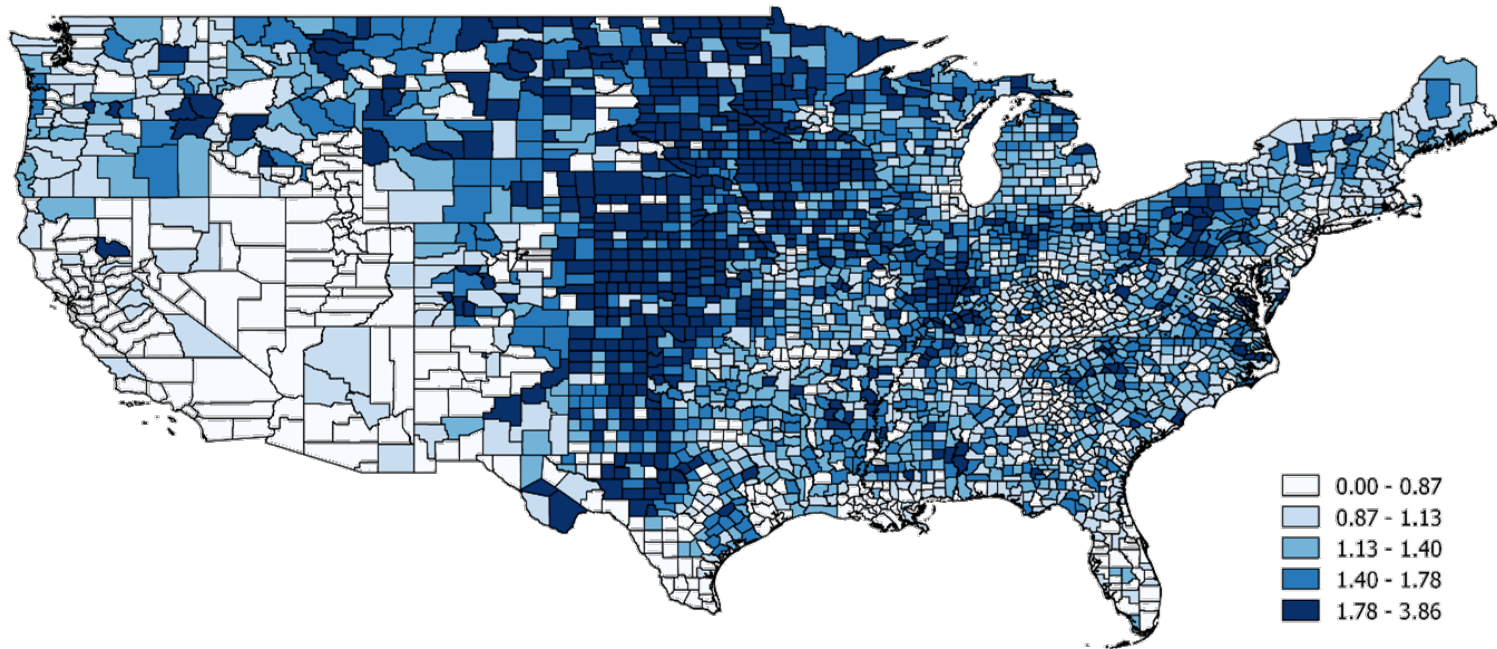
# APPENDIX – SK COMPONENTS



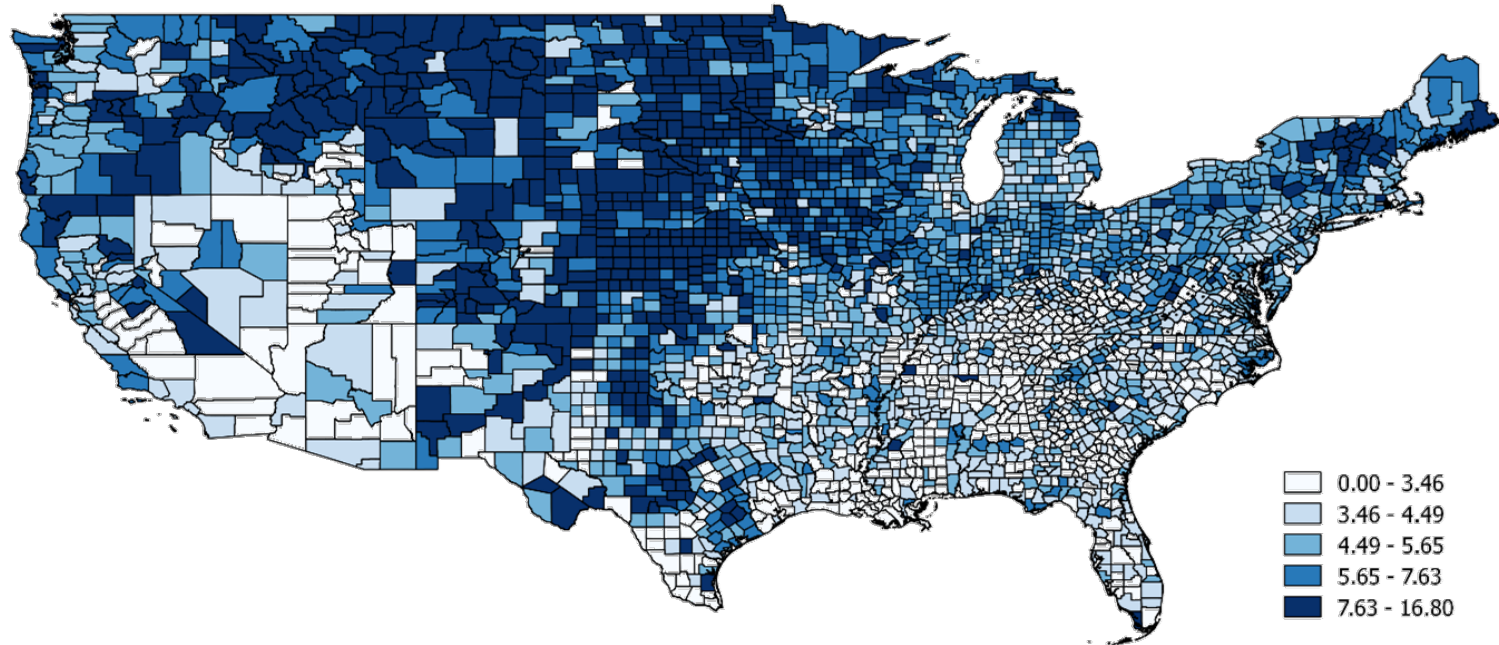
# Social capital estimate by county (1995)



# SK components – Association density (2014)

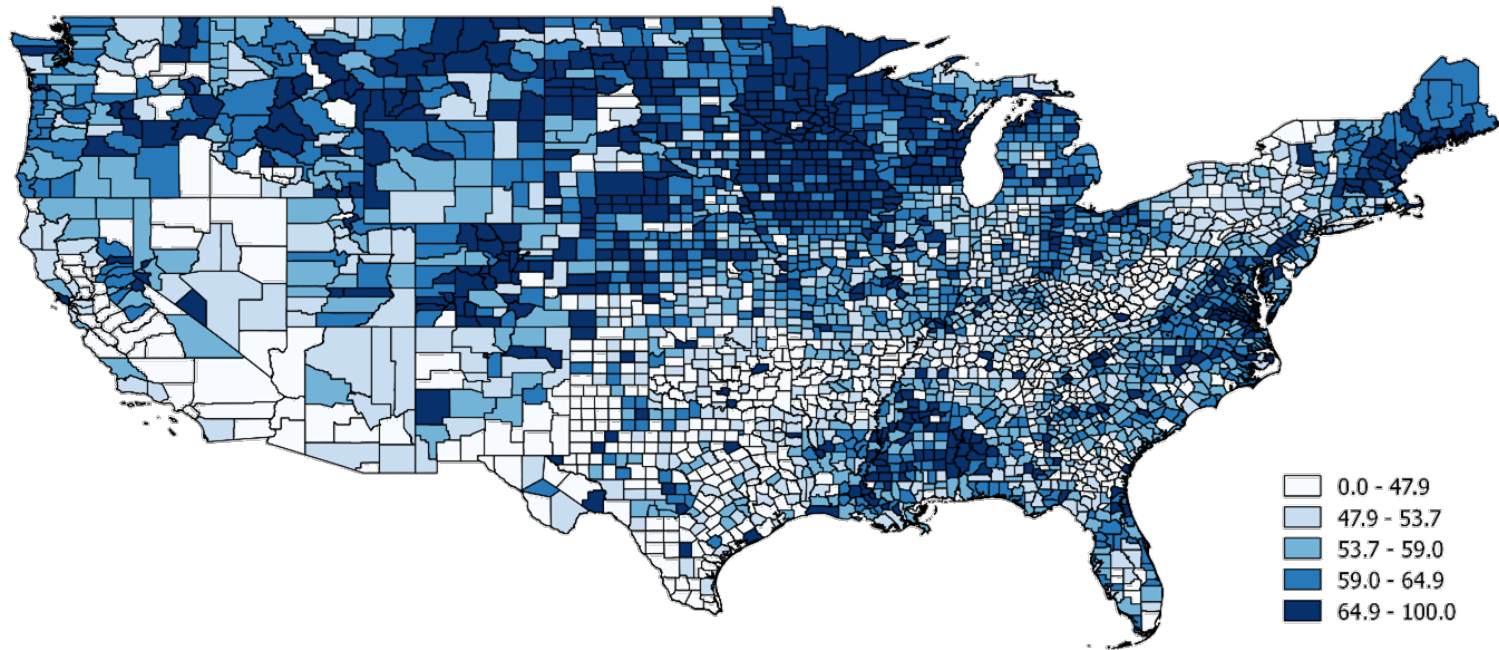


# SK components – Reg. org. density (2014)





# SK components – Voter turnout (2012)



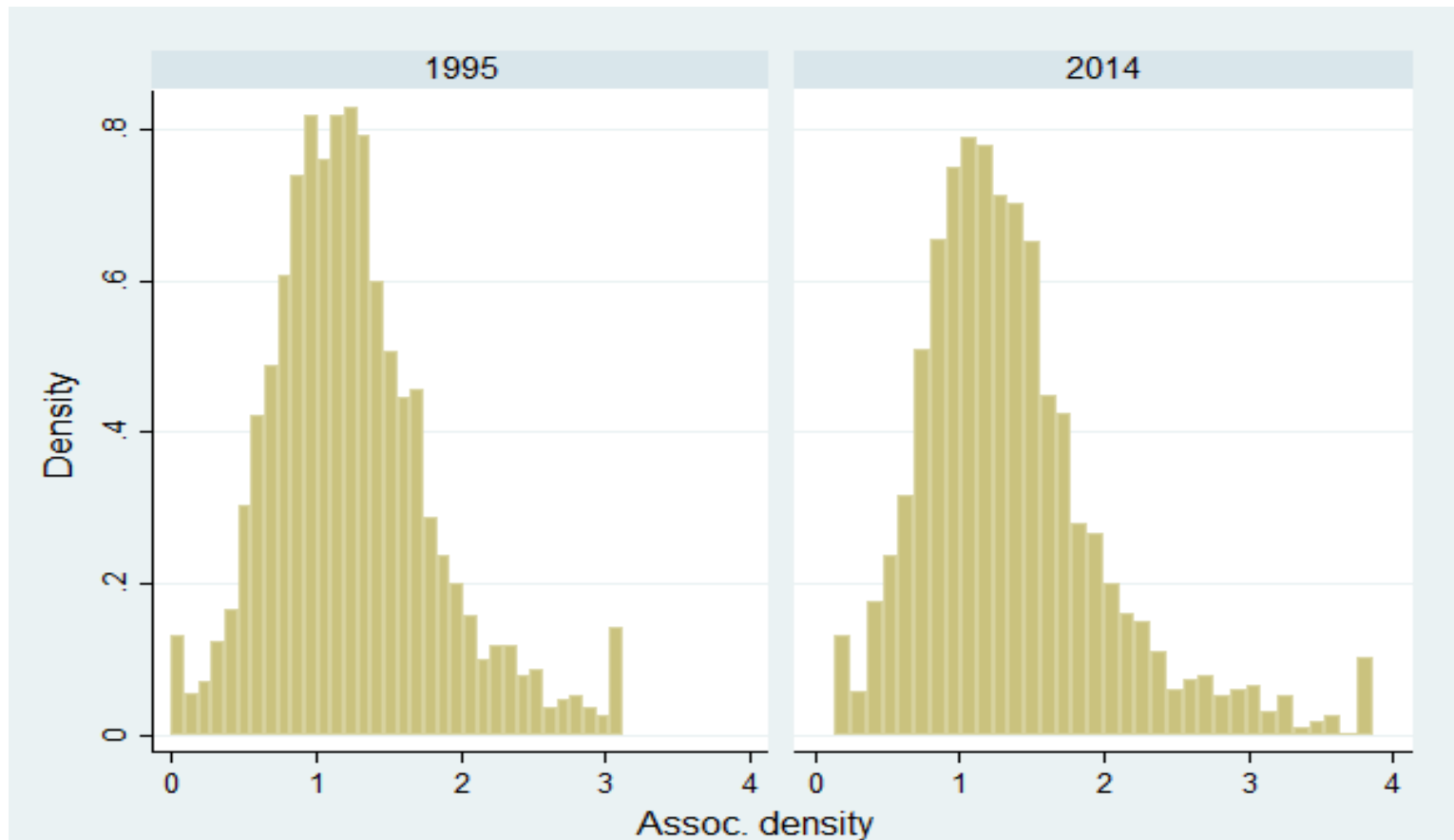


# Correlations of social capital components

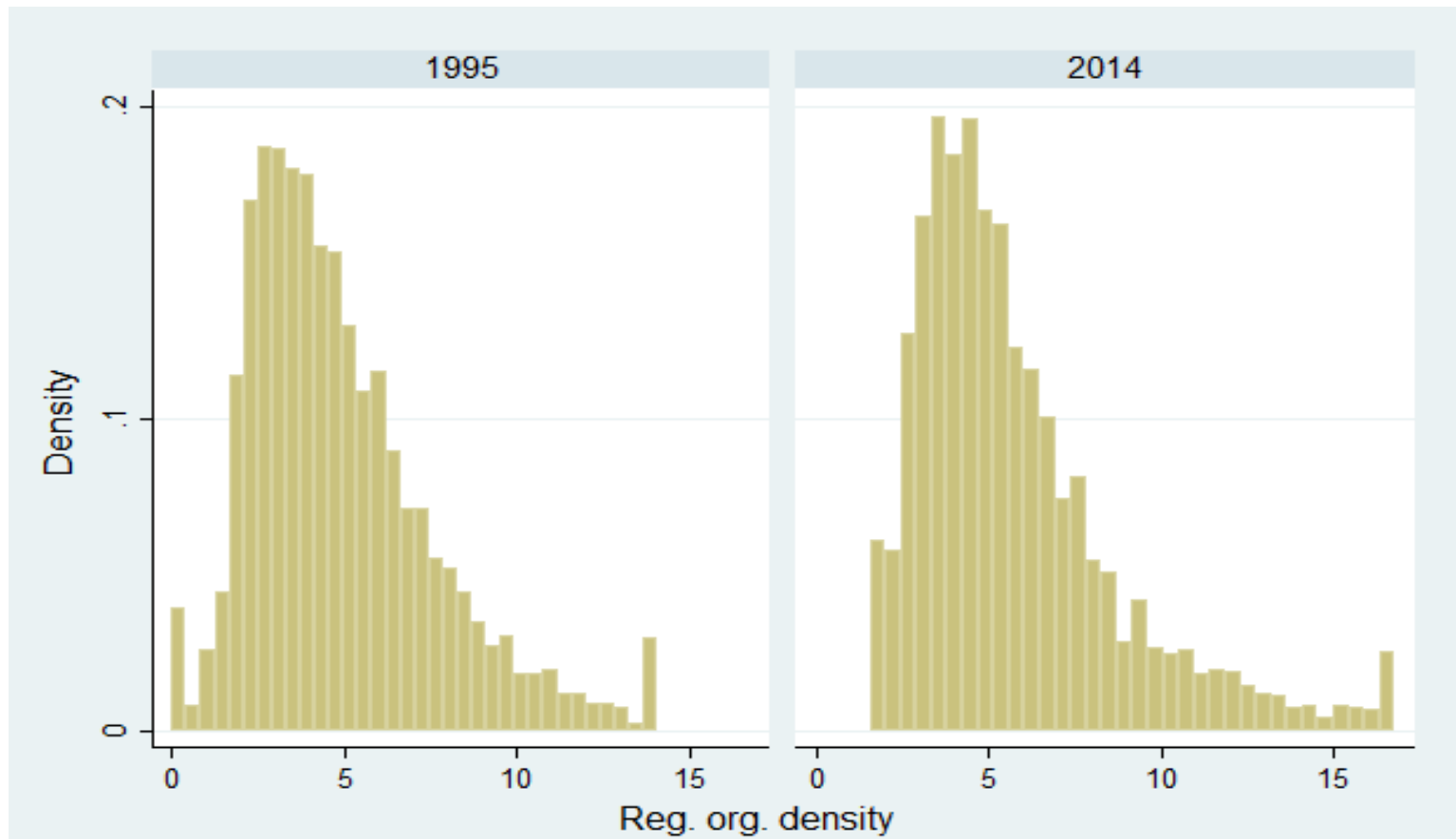
	SK	SK(t-1)	Assoc. density	Reg. org. density	Voter turnout	SK (Rupa. et al.)
SK	1					
SK(t-1)	0.994	1				
Assoc. density	0.819	0.808	1			
Reg. org. density	0.879	0.875	0.635	1		
Voter turnout	0.675	0.676	0.333	0.513	1	
SK (Rupa. et al.)	0.955	0.951	0.765	0.839	0.662	1



# Distribution of association density



# Distribution of registered organization density



# Distribution of voter turnout

