

Confidence Spillovers in Competitive Environments: Evidence from Entrepreneurship

Isaac Hacamo[†] and Kristoph Kleiner[†]

[†]Indiana University

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Confidence and Competition in Entrepreneurship

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- Many waged workers with high potential forgo entrepreneurship due to low self-confidence (Camerer and Lovo, 1999; Koellinger et al., 2007; Holm et al., 2013).
- This hypothesis prevails in a range of other competitive settings:
 - Women are less likely to enter competitive environments or careers despite equal ability (Gneezy et al., 2003; Niederle and Vesterlund, 2007).
 - Leads to underrepresentation in finance, management, and politics (Flory et al., 2014; Buser et al., 2014; Kanthak and Woon, 2015)
- Critical to understand how agents form their self-confidence, and whether simple policies that promote confidence can encourage agents to compete.

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- **This paper:** Examines whether interacting with a confident agent promotes confidence and entry into entrepreneurship.
 - Prior work has suggests preferences for competition are influenced by societal factors (Gneezy et al., 2009; Andersen et al., 2013)
 - We instead examine whether simple policies can override these factors and encourage less confident agents towards competitive environments.
- **Our setting:** We analyze young managers randomly connected to high confident peers.
 - Observe an increase in entrepreneurship following treatment.
 - Confirm a change in confidence through direct surveys following treatment.
 - The results are greatest for female managers that are (i) lower confidence and (ii) less likely to enter entrepreneurship.
 - No evidence treated entrepreneurs start lower quality firms.

Takeaway: Many waged workers with high potential would create a firm if only they held more self-confidence.

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Empirical Setting

Three Challenges

- ▶ Develop a exogenous treatment to entrepreneurial confidence
- ▶ Detailed employment histories including new firm starts
- ▶ Measures of entrepreneurial confidence before and after treatment

Framework

- ▶ We argue individuals enter entrepreneurship based on their expected ability as an entrepreneur (Lucas, 1978).
- ▶ We hypothesize individuals inaccurately estimate their abilities relative to their peers, rather than the full population. [▶ See theoretical framework.](#)
- ▶ When **peers are confident** in their abilities despite little evidence of actual ability, **individuals may update their own beliefs** of their place in the distribution.
- ▶ **Key Insight:** Focus on interactions with agents confident in their entrepreneurial abilities despite no prior experience.
 - ▶ Different from prior research that examine interactions with prior or current entrepreneurs (Nanda and Sorensen 2010, Lerner and Malmendier 2013).
 - ▶ We can therefore disentangle a confidence boost from a spillover of knowledge or resources.

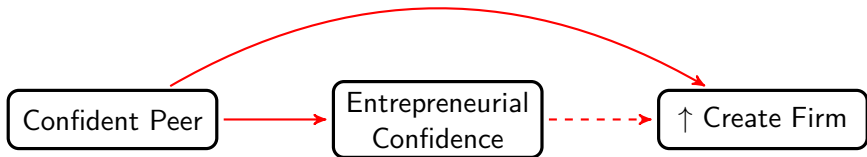
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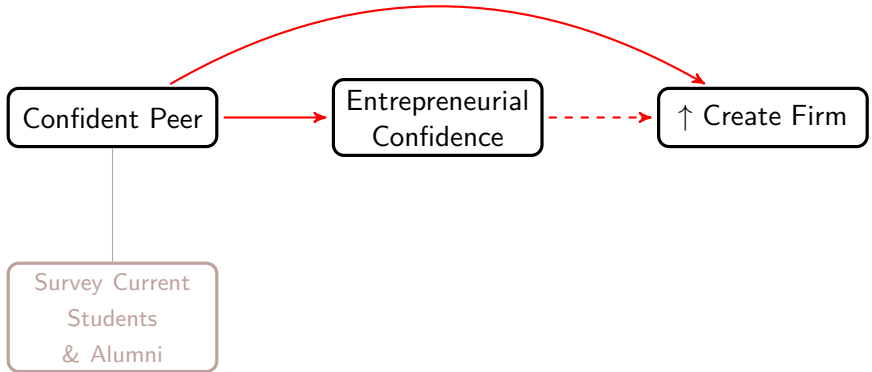
Setting

- ▶ We introduce an experimental setting using data from Indiana University - Kelley MBA students graduating from 2003-2013 and current students graduating in 2021.
- ▶ Exogenous variation in peers: Forced (Random) assignment of students into cohorts (60 students) and teams (4 students). Students in the **same cohort take the core MBA classes** together. Students in the **same team have work together on course projects and a large case study**.
- ▶ The assignment “function” of MBA office aims to create diverse cohorts/teams in four dimensions: nationality, race, gender, personality type, and GMAT scores.
- ▶ Measures of career plans: Students list intended major on the MBA application prior to enrollment.
- ▶ Detailed employment histories: resumes from *LinkedIn*.
- ▶ Directly survey past and current students before and after interaction.

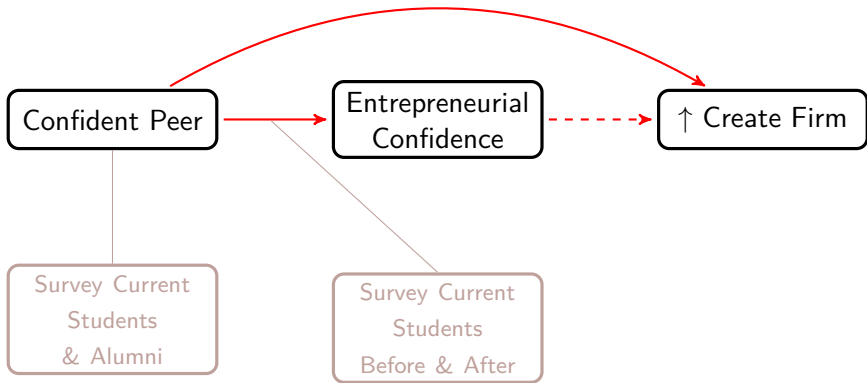
Roadmap



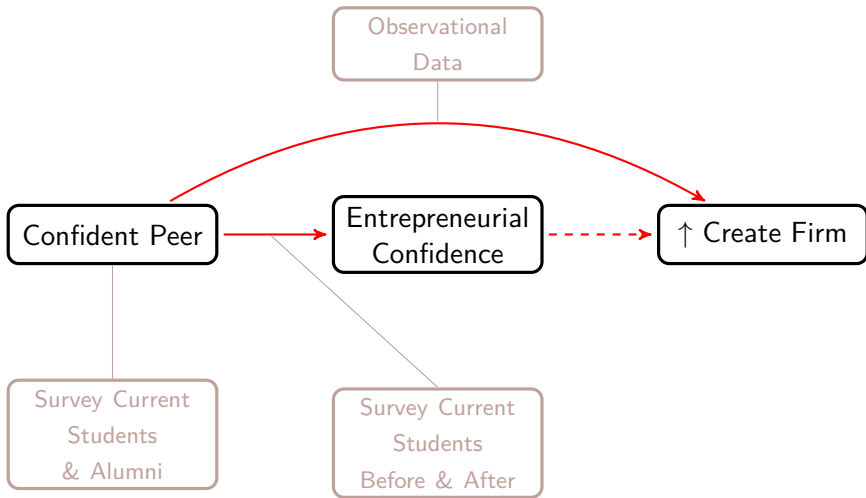
Roadmap



Roadmap



Roadmap



Data

Data Sources

- Admissions Data:
 1. Full names, nationality, ethnicity, race, cohort, team, intended major
- Employment Data:
 1. Constructed from LinkedIn
 2. The site contains self-reported data on education backgrounds including major, and employment histories with firm name, occupation, and job description, graduating major.
 3. We use several methods to identify entrepreneurship:
 - Founder
 - Owner/CEO/CFO and started in the founding year
 - Self-Employed/Entrepreneur and the firm had no prior employees
- Start-up Data: For each firm created by our entrepreneurs, we identify the # profiles on LinkedIn that report to work(ed) for the specific firm. We measure survival rate using resume, and double check whether firm was indeed created by our entrepreneur. We measure venture capital funding from Crunchbase.

Kelley MBAs and Entrepreneurship

Three facts about entrepreneurial skills of Kelley-MBAs:

- Four percent of individuals become entrepreneurs following graduation. [▶ See graph.](#)
- 35% new firms employ at least ten workers. [▶ See graph](#)
- Four percent of firms receive venture capital funding and two percent are acquired or enter an IPO.

Treatment Effect on Confidence

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Treatment Effect on Confidence

- To shock entrepreneurial confidence, we want to identify individuals who have high confidence for entrepreneurship without holding any prior experience.
- We identify individuals who intend to major in entrepreneurship prior to enrolling the MBA and have never created a firm prior to the MBA.
- **Question:** Are students intending to major in entrepreneurship actually more confident?

Confirming Entrepreneurial Confidence

- To confirm our conjecture that students intending to major in entrepreneurship are more confident, we directly survey incoming students prior to interaction.
- As these students have not yet interacted, we can rule out concerns that majoring in confidence impacts career paths, which impacts confidence.
- We **directly contacted individuals** from the Kelley MBA class of 2021 in the summer of 2019 (incoming students).
- We contacted 137 students, and receive 125 responses (over 90% response rate).
- In additional results, we also survey students from the classes of 2003-2013 to confirm the results continue to hold for our primary data sample.

Survey: Current and Incoming Students

Question 1 (Relative Confidence): Do you believe you would be worse, equal, or better at starting a company relative to the other MBA students at Kelley?

- Five potential responses (i.e., Better than 50% of students) [▶ See details](#)

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Question III (Overconfidence): Among past IU graduates that started a firm, only 5-10% employ ten or more workers within the first year. What is the likelihood you personally start a firm that employs ten or more workers within the first year?

- Nine potential responses (i.e., 0-1%, 10-15%) [▶ See details](#)

Entrepreneurial Confidence across Intended Major

Do students intending to major in entrepreneurship report higher rates of overconfidence? (**Incoming Students**)

$$Confidence_i = \alpha + \beta \times Intended\ Entrepreneur_i + Controls_i + YearFE_i + \varepsilon_i$$

	Relative Entrepreneurial Confidence		Alternate Measure 1		Alternate Measure 2	
	(i)	(ii)	(i)	(ii)	(i)	(ii)
Intended Entrepreneur	0.512*** (3.04)	0.459*** (2.66)	0.275* (1.90)	0.226* (1.76)	0.872** (2.52)	0.922*** (2.63)
Prior Entrepreneur		0.149 (0.49)		0.491** (2.22)		0.092 (0.19)
Gender FE	No	Yes	No	Yes	No	Yes
Nationality FE	No	Yes	No	Yes	No	Yes
Race FE	No	Yes	No	Yes	No	Yes
N	125	125	125	125	125	125
R-squared	.051	.16	.035	.15	.047	.16

Rejecting Alternative Behavioral Traits

- Our identification requires that peers primarily influence entrepreneurship through increased confidence and not other channels.
- Therefore we confirm intended entrepreneurs are similar to other students according to alternate behavioral measures.
- Each measure is based on prior academic evidence:
 - Economic Optimism (Bengtsson et al. 2014).
 - Noneconomic Optimism (Puri and Robinson 2007).
 - Risk Aversion (Parker 2009).
 - Ambiguity Aversion (Knight 1921).
 - Preferences for Independence (Cooper et al. 2013).
 - Preferences for Workplace Variety (Aastebro et al. 2011).

Results

Question 1: Does treatment increase entry to entrepreneurship?

Empirical Specification

We evaluate the effect of cohort members (or team members) that (1) worked previously as entrepreneur or (2) intend to major in entrepreneurship on several outcome variables:

$$\begin{aligned} \text{Entrepreneur}_{i,T} &= \alpha + \beta \times \text{Treatment}_i + \gamma \times \text{Experienced Peer}_i \\ &+ \text{Intended Entrepreneur}_i + \text{Controls}_i + \text{YearFE}_i + \varepsilon_i \end{aligned}$$

- Entrepreneur_{i,T} dummy denoting if student i is entrepreneur within T years of graduation.
- Treatment is a discrete var. equal to # cohort (or team) members intending to major in entrepreneurship and no past ent. experience.
- Experienced Peer is a discrete var. equal to cohort (or team) members with prior entrepreneurship endeavors.
- Controls: Fixed effects for gender, nationality, race, GMAT score, Undergrad major, and intended major

Peer Influence and Firm Creation: Cohort Effects

Does treatment at cohort-level affect the likelihood worker i becomes an entrepreneur within 3 years after graduation? Cohorts have between 50 to 60 students.

$$\begin{aligned} \text{Entrepreneur}_{i,T \leq 3} &= \alpha + \beta \times \text{Treatment}_i + \gamma \times \text{Experienced Peer}_i \\ &+ \text{Intended Entrepreneur}_i + \text{Controls}_i + \text{YearFE}_i + \varepsilon_i \end{aligned}$$

	Linear		Probit	
	(i)	(ii)	(i)	(ii)
Treatment	0.003* (1.96)	0.004*** (3.37)	0.041** (2.08)	0.069*** (3.68)
Experienced Peer		-0.006*** (-3.20)		-0.098*** (-2.93)
Intended Entrepreneur	0.020** (2.67)	0.018** (2.42)	0.270*** (2.87)	0.250** (2.46)
Year FE	Yes	Yes	Yes	Yes
Gender FE	No	Yes	No	Yes
Nationality FE	No	Yes	No	Yes
Race FE	No	Yes	No	Yes
GMAT FE	No	Yes	No	Yes
Undergrad Major FE	No	Yes	No	Yes
N	2102	2102	2102	2102
R-squared	.016	.035	.038	.090
Marginal Effect			0.0053	0.0052

- Treatment increases entrepreneurship by 12% relative to the mean

Peer Influence and Firm Creation: Team-Level

Does team-level treatment affect the likelihood worker i becomes an entrepreneur within 3 years after graduation? Teams, which are defined within a cohort, have 4 to 5 students.

	Linear		Probit	
	(i)	(ii)	(i)	(ii)
Treatment	0.013* (1.95)	0.012* (1.78)	0.284* (1.91)	0.263* (1.73)
Experienced Peer		-0.020** (-2.20)		-0.472* (-1.65)
Intended Entrepreneurs	0.025*** (3.11)	0.022*** (2.85)	0.427*** (3.60)	0.379*** (3.04)
Year FE	Yes	Yes	Yes	Yes
Team Size FE	Yes	Yes	Yes	Yes
Gender FE	No	Yes	No	Yes
Nationality FE	No	Yes	No	Yes
Race FE	No	Yes	No	Yes
GMAT FE	No	Yes	No	Yes
Undergrad Major FE	No	Yes	No	Yes
N	2102	2102	2102	2102
R-squared	.018	.041	.062	.129
Marginal Effect			0.015	0.016

- Treatment increases entrepreneurship by 32% relative to the mean

Peer Influence and Quality Firms

- Permanent effects: Control group does not catch up with treated group, suggesting treatment does not alter the timing of entry, but whether an individual ever enters entrepreneurship

▶ See results

- Employment: Peer influence equally affects creation of small and large firms.

▶ See results

- Survival: Peer influence equally affects creation of short- and long-lived firms.

▶ See results

Question 2: Does entrepreneurship increase due to confidence?

Peer Influence and Confidence: Class of 2021

Does treatment at the team-level affect the relative entrepreneurial confidence of the student?

$$\Delta \text{Confidence}_i = \alpha + \beta \times \text{Treatment}_i + \gamma \times \text{Entrepreneur Major}_i + \theta \times \text{Initial Confidence}_i + \text{Controls}_i + \text{YearFE}_i + \varepsilon_i$$

	Team-Level Peer			
	(i)	(ii)	(iii)	(iv)
Treatment (Peer Intending to Major in Entre)	0.334* (1.96)			
Treatment (Peer with High Relative Confidence)		0.323*** (2.75)		
Treatment (Peer with High Absolute Confidence)			0.212 (1.59)	
Treatment (Peer with High Overconfidence)				0.322*** (3.33)
Intended Entrepreneur	0.202 (0.92)	0.096 (0.46)	0.103 (0.48)	0.055 (0.26)
Prior Entrepreneur	0.171 (0.48)	0.165 (0.50)	0.161 (0.44)	0.167 (0.54)
Gender FE	Yes	Yes	Yes	Yes
Nationality FE	Yes	Yes	Yes	Yes
Race FE	Yes	Yes	Yes	Yes
Initial Confidence Measures	Yes	Yes	Yes	Yes
N	105	105	105	105
R-squared	.3	.33	.29	.33

Peer Influence and Confidence: Class of 2003-2013

Does treatment at the cohort or team-level affect the relative entrepreneurial confidence of the student?

$$\begin{aligned} \text{Confidence}_i &= \alpha + \beta \times \text{Treatment}_i + \gamma \times \text{Entrepreneur Major}_i + \theta \times \text{Founder}_i \\ &+ \phi \times \text{Intended Entrepreneur}_i + \text{Controls}_i + \text{YearFE}_i + \varepsilon_i \end{aligned}$$

	Cohort-Level Peer		Team-Level Peer	
	(i)	(ii)	(i)	(ii)
Treatment (Cohort-Level)	0.044*** (3.06)	0.036** (2.21)		
Treatment (Team-Level)			0.163* (1.75)	0.193** (2.50)
Intended Entrepreneur	0.499*** (4.19)	0.475*** (3.37)	0.471*** (4.07)	0.461*** (3.30)
Graduated Entrepreneur Major		0.335* (1.96)		0.311* (1.73)
Entrepreneur within 5y of MBA		0.710*** (3.34)		0.723*** (3.53)
Year FE	Yes	Yes	Yes	Yes
Gender FE	No	Yes	No	Yes
Nationality FE	No	Yes	No	Yes
Race FE	No	Yes	No	Yes
GMAT FE	No	Yes	No	Yes
Undergrad Major FE	No	Yes	No	Yes
N	373	373	373	373
R-squared	.087	.19	.084	.19

Question 3: Does treatment encourage less confident (but high potential) workers towards entrepreneurship?

Peer Influence on Firm Creation by Initial Confidence

We evaluate whether peer interaction disproportionately affects managers with lower confidence (defined as not intending to major in entrepreneurship). We provide results at the cohort-level below and find similar effects at the team-level.

	Low Confidence		High Confidence	
	(i)	(ii)	(i)	(ii)
Treatment	0.004** (2.11)	0.005** (2.45)	-0.001 (-0.33)	0.002 (0.83)
Experienced Peer		-0.005 (-1.53)		-0.010** (-2.58)
Year FE	Yes	Yes	Yes	Yes
Gender FE	No	Yes	No	Yes
Nationality FE	No	Yes	No	Yes
Race FE	No	Yes	No	Yes
GMAT FE	No	Yes	No	Yes
Undergrad Major FE	No	Yes	No	Yes
N	1367	1367	735	735
R-squared	.019	.033	.013	.076

Differences across Gender

We show three significant differences between males and females in our sample:

- Females are significantly less likely to become entrepreneurs. [▶ See table](#)
- Females are significantly less likely to want to major in entrepreneurship. [▶ See table](#)
- Using the survey results, we show that females are less confident in their entrepreneurial abilities (both in the classes of 2003-2013 and 2021). [▶ See table](#)

Peer Influence on Firm Creation by Gender

We evaluate whether peer interaction disproportionately affects women.

	All Peers		Peers by Gender	
	Female	Male	Female	Male
Treatment	0.008*** (3.12)	0.003* (1.83)		
Treatment (Female Peer)			0.010*** (3.47)	0.003 (1.56)
Treatment (Male Peer)			0.007** (2.32)	0.003 (1.24)
Experienced Peer	-0.017*** (-2.98)	-0.003 (-1.04)	-0.017*** (-2.95)	-0.003 (-0.98)
Intended Entrepreneur	0.008 (0.73)	0.022** (2.31)	0.014 (1.20)	0.025** (2.64)
Year FE	Yes	Yes	Yes	Yes
Nationality FE	Yes	Yes	Yes	Yes
Race FE	Yes	Yes	Yes	Yes
GMAT FE	Yes	Yes	Yes	Yes
Undergrad Major FE	Yes	Yes	Yes	Yes
N	539	1563	539	1563
R-squared	.083	.037	.084	.037

Proportion of Long-Term and Employer Firms

A shock to entrepreneurial confidence may lead to less capable individuals starting new firms, lowering the average rate of entrepreneurial success. We evaluate the impact of peers on the proportion of firm survival and growth as of 2019.

	Employment			Survival		
	2+ Emp	6+ Emp	10+ Emp	1+ Years	3+ Years	5+ Years
Treatment	0.001 (0.04)	0.039 (1.10)	0.051 (1.35)	0.012 (0.31)	0.078** (2.19)	0.072* (1.82)
Intended Entrepreneur	-0.006 (-0.09)	0.201 (1.40)	0.419*** (3.21)	0.200 (1.21)	0.447** (2.46)	0.297* (1.73)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Gender FE	Yes	Yes	Yes	Yes	Yes	Yes
Nationality FE	Yes	Yes	Yes	Yes	Yes	Yes
Race FE	Yes	Yes	Yes	Yes	Yes	Yes
GMAT FE	Yes	Yes	Yes	Yes	Yes	Yes
Undergrad Major FE	Yes	Yes	Yes	Yes	Yes	Yes
N	72	72	72	72	72	72
R-squared	.37	.49	.5	.41	.44	.37

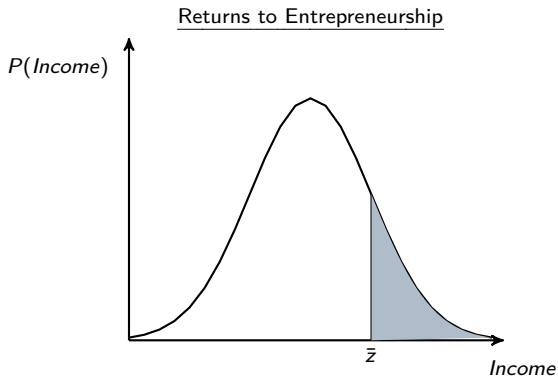
Three Implications

- **Our Findings:** Interacting with a confident agent increases confidence and entry into competitive environments without any decline in average ability.
 - Many waged workers with high potential would enter entrepreneurship if only they held more self-confidence.
 - Simple policies like daily interactions encourage less confident agents towards competitive environments.
 - Policies may increase the representation of women in entrepreneurial and management roles.

Thank you!

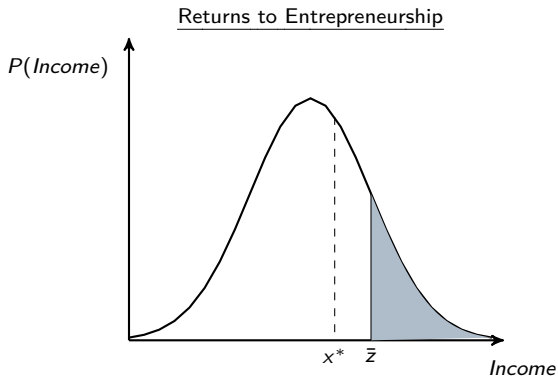
Framework

- \bar{z} is the threshold above which an individual decides to be an entrepreneur (Lucas, 1978)
- x^* is the perceived position in the distribution of returns.



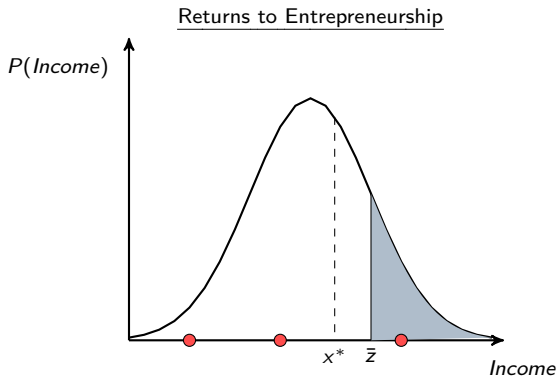
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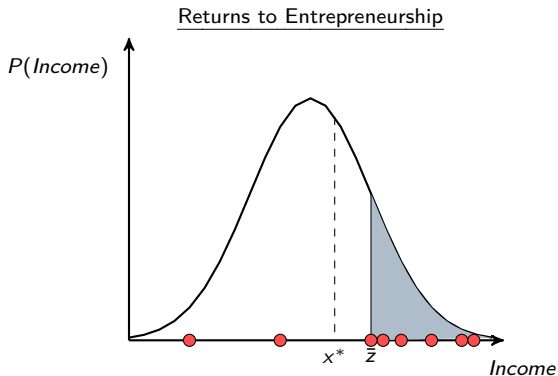
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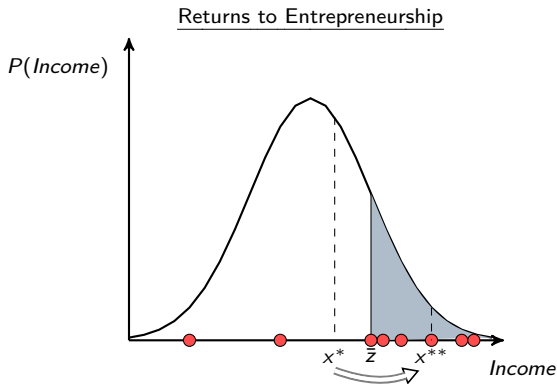
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Interactions with individuals in the right hand side of the distribution might lead to an update upwards in confidence (position in the distribution of returns)

Entrepreneurial Confidence across Intended Major

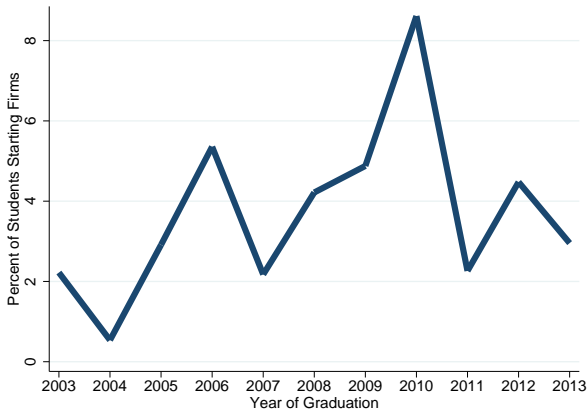
Do students intending to major in entrepreneurship report higher rates of overconfidence? (**Alumni**)

$$Confidence_i = \alpha + \beta \times Intended\ Entrepreneur_i + Controls_i + YearFE_i + \varepsilon_i$$

	Relative Confidence		Alternate Measure 1		Alternate Measure 2	
	(i)	(ii)	(i)	(ii)	(i)	(ii)
Intended Entrepreneur	0.468*** (3.70)	0.459*** (3.17)	0.214** (2.11)	0.144 (1.27)	0.197 (1.07)	0.199 (1.07)
Graduated Entrepreneur Major		0.327* (1.89)		0.185 (1.31)		0.202 (0.39)
Entrepreneur within 5y of MBA		0.704*** (3.29)		0.768*** (3.92)		0.592 (1.26)
Female Student	-0.221 (-1.64)	-0.185 (-1.46)	-0.278*** (-3.20)	-0.257** (-2.65)	-0.546** (-2.41)	-0.596** (-2.32)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Nationality FE	No	Yes	No	Yes	No	Yes
Race FE	No	Yes	No	Yes	No	Yes
GMAT FE	No	Yes	No	Yes	No	Yes
Undergrad Major FE	No	Yes	No	Yes	No	Yes
N	373	373	372	372	372	372
R-squared	.086	.18	.045	.16	.03	.089

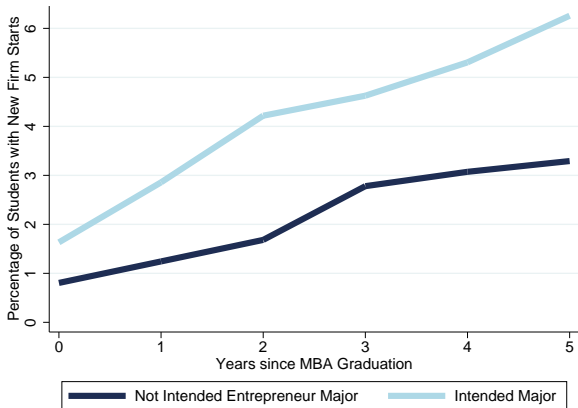
Appendix: Entrepreneurship across Graduation Classes

Data Summary I: Four percent of students start firms following graduation (within 3 years).



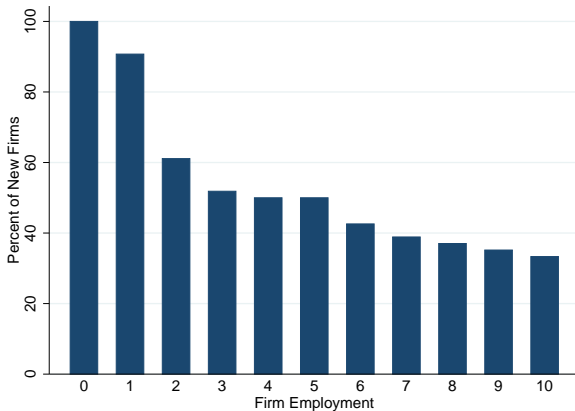
Appendix: Entrepreneurship across Intended Major

Data Summary II: Intent to major in entrepreneurship predicts firm creation



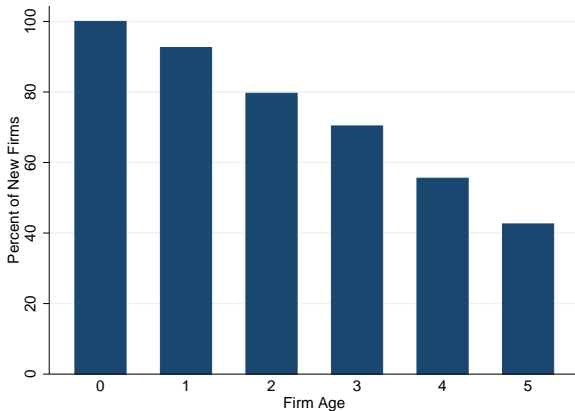
Appendix: New Firm Employment

Data Summary III: Half of new firms employ at least five workers



Appendix: New Firm Survival

Data Summary IV: Nearly 40% of new firms survive at least five years



Example of Questions

- **Economic optimism:** Over the past 90 years, the US stock market has observed an average return of 9% a year. What will be the average annual US stock market return over the next ten years?
- **Non-economic optimism:** Among people born in the US in 1919, 1.4% are still alive in 2019. What is the likelihood you live to age 100?
- **Risk aversion:** How much would you pay for a lottery ticket that gives you a 50% probability of winning \$500 and 50% of winning nothing?
- Go here to see the results on other traits: [▶ See results](#)

Appendix: Survey 1 - Question 1

Q2: How confident are you in your ability to start a company?

1. Not confident
2. Not very confident
3. Somewhat confident
4. Confident
5. Very confident

▶ Go back

Appendix: Survey 1 - Question 2

Q1: Do you believe you would be worse, equal, or better at starting a company relative to the other MBA students at Kelley?

1. Bottom 10% of students
2. Better than 10% of students
3. Better than 30% of students
4. Better than 50% of students
5. Better than 70% of students

▶ Go back

Appendix: Survey 1 - Question 3

Q3: Among past IU graduates that started a firm, only 5 to 10% employ 10 or more workers within the first year. What is the likelihood you personally start a firm that employs 10 or more workers within the first year?

1. 0-1%
2. 1-2%
3. 2-5%
4. 5-10%
5. 10-15%
6. 15-20%
7. 20-30%
8. 30-50%
9. 50-100%

▶ Go back

Alternate Behavioral Traits across Intended Major

Do students intending to major in entrepreneurship report other behavioral traits?

$$Trait_i = \alpha + \beta \times Intended\ Entrepreneur_i + Controls_i + YearFE_i + \varepsilon_i$$

	Optimism		Risk/Ambiguity Aversion		Preferences	
	Economic	Noneconomic	Risk	Ambiguity	Independence	Variety
Intended Entrepreneur	-0.365* (-1.67)	1.035** (2.12)	0.084 (0.23)	0.166 (0.51)	0.042 (0.26)	0.202 (1.31)
Prior Entrepreneur	0.001 (0.00)	-0.555 (-0.89)	0.800 (1.55)	0.690 (1.43)	0.196 (0.76)	0.317 (1.60)
Gender FE	Yes	Yes	Yes	Yes	Yes	Yes
Nationality FE	Yes	Yes	Yes	Yes	Yes	Yes
Race FE	Yes	Yes	Yes	Yes	Yes	Yes
N	125	124	125	125	125	125
R-squared	.034	.043	.081	.077	.08	.065

Permanent Influence on Firm Creation

Treatment may only influence the timing of firm creation, rather than the decision to start a firm. We evaluate whether peer influence dissipates within T years of MBA graduation:

	Firm Creation X Years after MBA Graduation				
	1 Year	2 Years	3 Years	4 Years	5 Years
Treatment	0.002** (2.28)	0.001* (2.02)	0.004*** (3.37)	0.004*** (3.27)	0.004*** (3.16)
Experienced Peer	-0.004** (-2.59)	-0.005*** (-3.04)	-0.006*** (-3.20)	-0.005** (-2.42)	-0.006** (-2.51)
Intended Entrepreneur	0.014** (2.15)	0.023*** (3.72)	0.018** (2.42)	0.024** (2.39)	0.032*** (3.04)
Year FE	Yes	Yes	Yes	Yes	Yes
Gender FE	Yes	Yes	Yes	Yes	Yes
Nationality FE	Yes	Yes	Yes	Yes	Yes
Race FE	Yes	Yes	Yes	Yes	Yes
GMAT FE	Yes	Yes	Yes	Yes	Yes
Undergrad Major FE	Yes	Yes	Yes	Yes	Yes
N	2102	2102	2102	2102	2102
R-squared	.034	.039	.035	.037	.04

Long-Term and Employer Firm Creation

Treatment may only influence the creation of bad firms. Good entrepreneurs select into entrepreneurship regardless of context conditions (Lucas 1978). We can measure entrepreneurial success based on employment size and survival.

	Employment			Survival		
	2+ Emp	6+ Emp	10+ Emp	1+ Years	3+ Years	5+ Years
Treatment	0.003** (1.98)	0.004*** (2.61)	0.003*** (2.76)	0.004** (2.16)	0.003* (1.70)	0.003* (1.91)
Experienced Peer	-0.007** (-2.39)	-0.004* (-1.71)	-0.003 (-1.48)	-0.008** (-2.35)	-0.006* (-1.88)	-0.006** (-2.20)
Intended Entrepreneur	0.015** (2.25)	0.017*** (3.11)	0.012** (2.41)	0.016* (1.85)	0.013* (1.76)	0.014** (2.18)
Constant	-0.132 (-0.89)	-0.130 (-1.08)	-0.115 (-1.06)	-0.180 (-0.99)	-0.124 (-0.78)	-0.109 (-0.78)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Gender FE	Yes	Yes	Yes	Yes	Yes	Yes
Nationality FE	Yes	Yes	Yes	Yes	Yes	Yes
Race FE	Yes	Yes	Yes	Yes	Yes	Yes
GMAT FE	Yes	Yes	Yes	Yes	Yes	Yes
Undergrad Major FE	Yes	Yes	Yes	Yes	Yes	Yes
N	2102	2102	2102	2102	2102	2102
R-squared	.035	.041	.038	.034	.024	.02

Academic Performance of Intended Entrepreneurs

Students intending to major in entrepreneurship do not outperform other students in the classroom. Students with a high number of intended entrepreneur peers do not outperform other students in the classroom.

	Cohort-Level Peers		Team-Level Peers	
	(i)	(ii)	(i)	(ii)
Treatment	-0.005 (-1.07)	-0.002 (-0.52)		
Treatment			0.020 (0.82)	0.029 (1.35)
Intended Entrepreneur	0.011 (0.35)	-0.026 (-1.05)	0.015 (0.49)	-0.024 (-0.94)
Year FE	Yes	Yes	Yes	Yes
Nationality FE	No	Yes	No	Yes
Race FE	No	Yes	No	Yes
GMAT FE	No	Yes	No	Yes
Undergrad Major FE	No	Yes	No	Yes
N	1933	1933	1933	1933
R-squared	.13	.35	.13	.35

Peer Influence and Risk-Aversion/Optimism: Team Effects

Does treatment at the team-level affect the risk-aversion of the student?

$$\Delta \text{Risk - Aversion}_i = \alpha + \beta \times \text{Treatment}_i + \gamma \times \text{Entrepreneur Major}_i + \theta \times \text{Initial Confidence}_i + \text{Controls}_i + \text{YearFE}_i + \varepsilon_i$$

	Δ Optimism		Δ Risk/Ambiguity Aversion		Δ Preferences	
	Economic	Noneconomic	Risk	Ambiguity	Independence	Variety
Treatment	-0.024 (-0.10)	0.378 (0.84)	0.671*** (2.81)	0.164 (0.67)	-0.081 (-0.51)	0.141 (1.10)
Intended Entrepreneur	0.070 (0.26)	0.533 (0.94)	0.724** (2.38)	0.158 (0.49)	-0.258 (-1.36)	0.183 (1.17)
Prior Entrepreneur	-0.810* (-1.86)	-1.711*** (-2.85)	-0.649 (-1.19)	0.797 (1.43)	0.023 (0.09)	-0.056 (-0.23)
Gender FE	Yes	Yes	Yes	Yes	Yes	Yes
Nationality FE	Yes	Yes	Yes	Yes	Yes	Yes
Race FE	Yes	Yes	Yes	Yes	Yes	Yes
Initial Confidence Measures	Yes	Yes	Yes	Yes	Yes	Yes
N	104	104	105	105	104	105
R-squared	.53	.31	.48	.47	.25	.41

Firm Creation across Gender

We evaluate whether the women in our sample are less likely to enter entrepreneurship.

$$\begin{aligned} \text{Entrepreneur}_{i,T} &= \alpha + \beta \times \text{Female Student}_i + \text{Intended Entrepreneur}_i \\ &+ \text{Controls}_i + \text{YearFE}_i + \varepsilon_i \end{aligned}$$

	Firm Creation (X+ Years)				
	1+ Years	2+ Years	3+ Years	4+ Years	5+ Years
Female Student	-0.012* (-1.68)	-0.020** (-2.43)	-0.027*** (-2.80)	-0.030*** (-2.97)	-0.032*** (-3.07)
Intended Entrepreneur	0.013** (2.11)	0.022*** (2.96)	0.015* (1.79)	0.021** (2.30)	0.029*** (3.04)
Year FE	Yes	Yes	Yes	Yes	Yes
Nationality FE	Yes	Yes	Yes	Yes	Yes
Race FE	Yes	Yes	Yes	Yes	Yes
GMAT FE	Yes	Yes	Yes	Yes	Yes
Undergrad Major FE	Yes	Yes	Yes	Yes	Yes
N	2102	2102	2102	2102	2102
R-squared	.034	.038	.033	.035	.038

Intended Entrepreneur across Gender

We evaluate whether the women in our sample are less likely to intend to major in entrepreneurship.

$$\begin{aligned} \text{Intended Entrepreneur}_{i,T} &= \alpha + \beta \times \text{Female Student}_i \\ &+ \text{Controls}_i + \text{YearFE}_i + \varepsilon_i \end{aligned}$$

	Firm Creation (X+ Years)				
	1+ Years	2+ Years	3+ Years	4+ Years	5+ Years
Female Student	-0.012* (-1.68)	-0.020** (-2.43)	-0.027*** (-2.80)	-0.030*** (-2.97)	-0.032*** (-3.07)
Intended Entrepreneur	0.013** (2.11)	0.022*** (2.96)	0.015* (1.79)	0.021** (2.30)	0.029*** (3.04)
Year FE	Yes	Yes	Yes	Yes	Yes
Nationality FE	Yes	Yes	Yes	Yes	Yes
Race FE	Yes	Yes	Yes	Yes	Yes
GMAT FE	Yes	Yes	Yes	Yes	Yes
Undergrad Major FE	Yes	Yes	Yes	Yes	Yes
N	2102	2102	2102	2102	2102
R-squared	.034	.038	.033	.035	.038

Entrepreneurial Confidence across Gender

We evaluate whether the women in our sample report lower rates of confidence.

$$\begin{aligned} \text{Confidence}_i &= \alpha + \beta \times \text{Female}_i + \gamma \times \text{Intended Entrepreneur}_i \\ &+ \text{Controls}_i + \text{YearFE}_i + \varepsilon_i \end{aligned}$$

	Relative Entrepreneurial Confidence	
	(i)	(ii)
Female Student	-0.600*** (-3.52)	-0.521*** (-2.99)
Intended Entrepreneur	0.484*** (2.95)	0.459*** (2.66)
Prior Entrepreneur		0.149 (0.49)
Nationality FE	No	Yes
Race FE	No	Yes
N	125	125
R-squared	.14	.16

Peer Influence and Majoring in Entrepreneurship

Do confident peers impact the likelihood of obtaining entrepreneurial training?

- Confident individuals impact the likelihood that their peers switch majors towards entrepreneurship. [▶ See results](#)

Are individuals who intend to major in entrepreneurship more likely to become entrepreneurs?

- Majoring in Entrepreneurship is associated with a higher likelihood of starting a firm. [▶ See results](#)

Peer Influence on Majoring in Entrepreneurship

The prior results find no evidence that a shock to confidence lowers the rate of entrepreneurial success. One possible explanation is that a shock to confidence early in the career increases participation in entrepreneurial training programs. We test whether peers influence others to switch to an entrepreneurship major.

$$\begin{aligned} \text{Entrepreneur Major}_i &= \alpha + \beta \times \text{Treatment}_i + \gamma \times \text{Experienced Peer}_i \\ &+ \text{Intended Entrepreneur}_i + \text{Controls}_i + \text{YearFE}_i + \varepsilon_i \end{aligned}$$

	Graduating with an Entrepreneurship Major	
	(i)	(ii)
Treatment	0.024** (2.50)	0.023** (2.33)
Intended Entrepreneur	0.079*** (6.14)	0.080*** (6.13)
Year FE	Yes	Yes
Gender FE	No	Yes
Nationality FE	No	Yes
Race FE	No	Yes
GMAT FE	No	Yes
Undergrad Major FE	No	Yes
N	2102	2102
R-squared	.04	.058

Majoring in Entrepreneurship and Firm Creation

But are students who major in entrepreneurship more likely to become entrepreneurs?

$$\begin{aligned}
 \text{Entrepreneur}_{i,T} &= \alpha + \beta \times \text{Entrepreneurship Major}_i + \text{Intended Entrepreneur}_i \\
 &+ \text{Controls}_i + \text{YearFE}_i + \varepsilon_i
 \end{aligned}$$

	Firm Creation X Years after MBA Graduation				
	1 Year	2 Years	3 Years	4 Years	5 Years
Graduated Entrepreneur Major	0.061** (2.25)	0.096*** (3.02)	0.092*** (2.88)	0.085*** (2.67)	0.111*** (3.18)
Intended Entrepreneur	0.008 (1.21)	0.014* (1.77)	0.008 (0.89)	0.014 (1.42)	0.020* (1.94)
Year FE	Yes	Yes	Yes	Yes	Yes
Gender FE	Yes	Yes	Yes	Yes	Yes
Nationality FE	Yes	Yes	Yes	Yes	Yes
Race FE	Yes	Yes	Yes	Yes	Yes
GMAT FE	Yes	Yes	Yes	Yes	Yes
Undergrad Major FE	Yes	Yes	Yes	Yes	Yes
N	2102	2102	2102	2102	2102
R-squared	.043	.054	.044	.043	.05