

# ONLINE APPENDIX

for

## LEARNING TO QUIT? A MULTI-YEAR, MULTI-SITE FIELD EXPERIMENT WITH INNOVATION-DRIVEN ENTREPRENEURS

### Summary of Appendices and Supplementary Analysis

- A. Further Documentation of Timing of Experiment, Data Collection, and Variable Construction
  - 1. **Structure and Timing of Experiment Across Sites**
  - 2. **Procedure for Processing Surveys and External Data**
  - 3. **Variable Definitions and Detailed Information on Variable Construction:** The sources and algorithm for the construction of all the variables in the analysis.
  - 4. **Differential Attrition Analysis:** Provides an analysis of differential attrition across treatment and control as well as documentation of the surveys as viewed by enrolled startups.
  
- B. Robustness to Inverse Hyperbolic Sine
  
- C. Treatment Heterogeneity
  
- D. Survey Instruments
  
- E. Curriculum Description

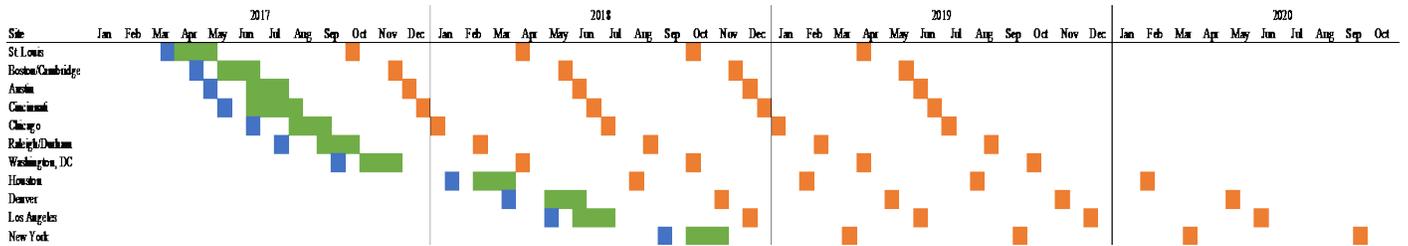
## Appendix A: Further Documentation of Timing of Experiment, Data Collection, and Variable Construction

In this Appendix we provide more detailed information about the structure of the experiment, how we collected our data, and how we constructed the variables used in our analysis. In the first section, we provide more details about the timing of the experiment. In the second section, we provide detailed descriptions of the data collected and how it was processed. In the third section, we discuss the procedures used to process the raw data into the final variables and dataset. Lastly, the fourth section provides an analysis of the response rates across the waves of surveys and provides a differential attrition analysis.

### Appendix A1: Structure and Timing of Experiment Across Sites

Our experiment was conducted across twelve sites and over multiple years. The flow of the experiment across all sites is shown in Figure A1. In addition, the timing of the execution of our study in tabular form is presented in Table A1. Enrollment began in March of 2017 and continued through September of 2018. Our staggered roll-out of the experiment was designed to allow us to use the same trainers across all sites in our study, to ensure consistency of training.

**Figure A1: GANTT Chart of Experiment Timing by Site**



Legend: ■ – Enrollment Start ■ – Coursework ■ – Follow-Up Survey Administered

**Table A1: Site Location and Timing of Study**

<b>Location</b>	<b>Enrollment Start</b>	<b>Coursework</b>	<b>Follow-On #1</b>	<b>Follow-On # 2</b>	<b>Follow-On #3</b>	<b>Follow-On # 4</b>
St. Louis	3/13/17	4/10-5/15 (2017)	10/1/17	4/12/18	10/12/18	4/12/19
Boston	4/25/17	5/24-6/28 (2017)	11/15/17	3/15/18	11/15/18	5/15/19
Cambridge	4/25/17	5/24-6/28 (2017)	11/15/17	3/15/18	11/15/18	5/15/19
Austin	5/2/17	6/14-8/2 (2017)	12/1/17	6/1/18	12/1/18	6/1/19
Cincinnati	5/16/17	6/28-8/9 (2017)	12/20/17	6/20/18	12/20/18	6/20/19
Chicago	6/19/17	7/26-9/13 (2017)	1/15/18	7/15/18	1/15/19	7/15/19
Raleigh/Durham	7/24/17	8/30-10/10 (2017)	2/20/18	8/20/18	2/20/19	8/20/19
Washington, DC	9/8/17	10/18-11/29 (2017)	4/10/18	10/10/18	4/10/19	10/10/19
Houston	1/30/18	2/19-3/26 (2018)	8/10/18	2/10/19	8/10/19	2/10/20
Denver	4/1/18	5/1-6/5 (2018)	11/1/18	5/1/19	11/1/19	5/1/20
Los Angeles	5/2/18	6/6-7/17 (2018)	12/1/18	6/1/19	12/1/19	6/1/20
New York	9/11/18	10/3-11/14 (2018)	3/26/19	9/26/19	3/26/20	9/26/20

**Appendix A2: Procedure for Processing Surveys and External Data**

Our process in going from raw survey data to variables in our analysis proceeded in the following steps: Raw Qualtrics data → raw data after name disambiguation → drop effective non-responses → multiple response adjustment → incorporation of external data → final variable construction → analysis data. In the sections below, we detail each step.

**A2.1 Name Disambiguation:**

One of the key data management concerns when working with startup businesses is tracking business name changes. As a part of this longitudinal study, we frequently encountered the issue that the businesses would report under different names during the follow up surveys. In each of the follow up surveys, we elicited both the original name of the business and any name changes. Often the founders would report the new alias as well as providing their original name. Some businesses would just report the new name as the official business name. With the combination of information tracked in the survey and additional confirmation using information from correspondence with the company, social media, and company websites, we were able to connect the small business reported under the new name back to our existing sample. We tracked each

business using a unique 4-digit numeric identifier and added each new alias to a table whenever a business reported using a new name (Alias List).

### **A2.2 Drop Effective Non-Responses:**

Sometimes a respondent would open the survey link but not complete the survey. If the respondent did not provide a valid company name then the response could not be traced back to the Alias List and matched to the business registered in the experiment.

Of the 69 responses that were dropped due to missing company name, 65 had a completion rate of less than 1%; in other words less than 6 of the 528 questions on the survey were completed. The remaining 4 responses without a company name had a completion rate less than 20%. Insufficient information was available in those responses to match them back to the registered company.

There were 10 responses that had text in the company name box, but the information entered in the company name box did not match to a valid company name in the Alias List. In most instances, these were obviously invalid responses including tests from the research team, e.g. “test” entered in the company name box.

Overall, 79 responses received via Qualtrics were dropped because they could not be matched to the registered companies. In most cases, these were also incomplete responses.

### **A2.3 Multiple Surveys Adjustment:**

For each of the follow up surveys sent at six-month intervals, the primary contact for the company was sent the initial request to complete the survey. If a response was not received for the primary contact from the company, then a follow up request would be sent to the secondary (and sometimes also the tertiary) contacts for each company. The initial survey invitation to the primary contact was not recalled and therefore it was possible for us to receive multiple responses from the same company for the same wave of the follow up. In the event that multiple responses were received from the same company during the same wave, the following procedures were applied to create one record that maximized the number of questions answered.

There were 273 instances of duplicate submissions for a given company for a given follow up for a total of 546 duplicate records that were combined. The first step in creating the composite record is to identify the pairs of responses based on company and follow up. The pairs were then sorted based first on percentage of the survey completed and then based on time of submission

(earliest first). The most complete record (or earliest record if both responses have the same percentage completion) is considered the primary response. The composite record is created on a question-by-question basis. If the primary response has a response for a given question then the response to the question from the primary record is maintained for the composite record. If there is not a response to a question for the primary record then the response to that question from the secondary record (less complete or later response) is added to the composite response, if available. Composite records for pairs were created in Excel using a formula. The same rules were applied for the 84 instances of triplicate and the 2 instances of quadruplicate responses.

**Table A2.1: Tracing Qualtrics Responses in the Sample**

	Observations
Full set of raw responses in Qualtrics	2835
Dropped due to missing or invalid company name	(79)
Multiple Submissions Dropped	
Duplicates	(546)
Triplicates	(84)
Quadruplicates	(8)
Composite responses added to dataset	
Duplicates	273
Triplicates	28
Quadruplicates	2
<b>Total Responses in the Final Sample</b>	<b>2421</b>

Multiple responses were submitted by 241 unique companies, 104 companies from the treatment group and 137 from the control group.

#### **A2.4 External Data Processing and External Data Acquired:**

A growing number of studies have explored the use of external “digital traces” as alternatives to survey measures of key dependent variables. In the main results of the paper, we opt to use external digital traces of both survival and external fundraising to ensure that we have the highest potential power in our studies and to minimize the impact of survey attrition on our ability to meaningfully analyze our results.

For external fundraising data, we focused on obtaining funding data from PitchBook. Since its introduction in 2007, PitchBook has increasingly become one of the most trusted sources for information about private financing in VC and private equity more broadly. To obtain PitchBook funding data, we engaged five undergraduate RAs to manually collect the PitchBook funding data for each startup in our sample. All RAs were provided with a list of all name variants for the startups in our sample obtained from the name disambiguation process described above. Each RA worked from a shared Google spreadsheet. Each row represented a unique `company_id` for the startup. RAs would “check out” a row by noting the date of the search and begin iteratively searching for the startup in PitchBook with each of the known name variants of the startup. If they found the startup in the database, they would record PitchBook’s unique identifier for that startup as well as detailed information about the funding round (close date, funding amount, and deal type). If they did not find entries for that row using any of the startup’s name variants, they would note that no information was available about the startup on PitchBook and move on. Further processing of the raw PitchBook data into the final VC dependent variables in our study are described below in Appendix A3.

For survival, we collected a number of different digital traces about the startup and the startup founders that were eventually used to create a final survival date. Because there are no established empirical procedures to correctly predict the shutdown date of a startup based on digital traces, we tried to be as expansive as possible in our data gathering. In Appendix A3 below, we provide a detailed explanation of how we used the reported shutdown dates of the startups that reported closure in our survey as “ground truth” data to derive an algorithm which minimized error in predicting shutdown. In Appendix Table A2.2, we detail the full list of variables we collected to derive our prediction algorithm. Each of the variables was hand collected by our team of undergraduate RAs using the procedure described above for our collection of the PitchBook data.

**Table A2.2: Variables Collected for Company Survival**

Level	Variable	Description	Source
Startup	Website Last Modified Date	Last date the website was updated	Company Website
Startup	Website Recent Post Date	If startup has dated content (e.g., blog), date of last post	Company Website
Startup	Android App Last Update Date	If startup has Android app, date of last review	Android App Store
Startup	Android App Last Review Date	If startup has Android app, date of last app update	Android App Store
Startup	Apple App Last Update Date	If startup has Apple app, date of last review	Apple App Store
Startup	Apple App Last Review Date	If startup has Apple app, date of last app update	Apple App Store
Startup	Twitter Last Post Date	If startup has Twitter handle, date of last post	Twitter
Startup	FaceBook Last Post Date	If startup has FaceBook site, date of last post	Facebook
Startup	LinkedIn Last Post Date	If startup has LinkedIn company profile, date of last post	LinkedIn
Founder	Startup Closure Date	If founder has LinkedIn profile and lists startup, month and year of closure	LinkedIn
Founder	New Job Start Date	If founder has LinkedIn profile, lists startup, but does not list closure, the month and year of starting a new fulltime job	LinkedIn

The next external data processing that we used for the study was for our pivoting variable. Pivoting by startups has become a large topic of interest in the study of entrepreneurship and entrepreneurial strategy. As the literature is still relatively nascent, the precise definition and measurement of a pivot has not reached a full consensus. For the analysis of our field experiment, we have adopted a definition from Camuffo et al. (2020) as this paper is the closest to ours in methodology and research question.

According to their paper, a pivot is defined as a “major change to its business model” (p. 576). Giving more structure to the word major, Camuffo et al. (2020) go on to note that a change is defined as major when the entrepreneur moved to a new idea for their business that “changed the core value proposition of the product or service offered or its target customers.” (p. 576). Lastly, they are careful to note that a pivot that involves only a change in customer must have a major change in customer. In their own words, Camuffo et al. (2020) note:

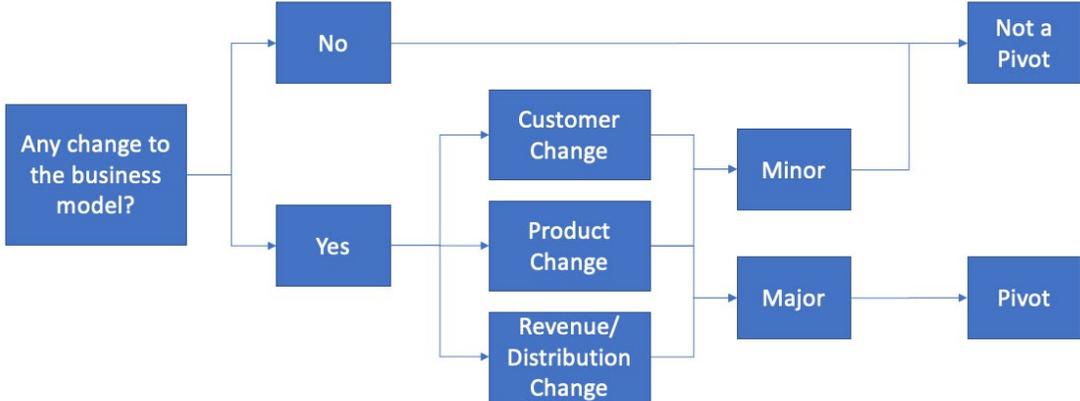
“We were careful in distinguishing a minor change in target customers from a major change. The former—the so-called zoom in or zoom out—consists of more narrowly or more broadly, respectively, identifying the same potential market without a change in target customers. The latter consists of a drastic change of target customers for a product or service (Ries 2011, Crilly 2018)”

For example, moving from airline pilots to physicians would be considered major as the human capital profile and industries of these customers are substantially different. In contrast, moving from pilots to airline pilots would not be considered major as this is merely a focusing of customers. A move to narrower customer definitions in this context is not major because a

substantial amount of the value created for airline pilots may be directly applicable to a broader set of pilots later in the development of the startup’s products. Thus, a focus on airline pilots does not preclude easily addressing hobby pilots later. In contrast, radical shifts in customer population require a substantial change in the product being created and, in some sense, more substantially foregoes addressing the previous customer.

To determine if a pivot happened, we had two undergraduate RAs read descriptions of the startup’s goals and their current “elevator” business pitch at two different contiguous time periods (e.g., follow-up 1 and follow-up 2). Based on the definition of a pivot provided in Camuffo et al. (2020), we developed the following conceptual algorithm described in Appendix Figure A2 below. The undergraduate RAs were asked to both read the theory section of the Camuffo et al. (2020) paper as well as code a few examples which were assessed for accuracy by the research team to assess conceptual fluency before beginning the task.

**Figure A2: Pivot Classification Algorithm**



Once they were trained, each RA was given a spreadsheet where each line represented one of the successive transitions in our data (e.g. follow-up 1 to follow-up 2) for each of the startup in our data. For each row, they read the elevator pitch and goals of the startup to determine whether there are any changes to the business model from one period to the next. If not, then there is no pivot. If they identify a change to one of three core aspects of business model, they next determine whether these changes are major or minor. Minor changes are defined using the logic from Camuffo et al. (2020) such that they represent a mere zoom in or zoom out in focus. Major

changes represent substantial departures from the previous period. A major change in any one of the three business model dimensions from one period to the next are defined as a pivot.

Overall, our pivot classification algorithm performed well. We had two research assistants that independently coded the data. The research assistants coded 2,006 transitions from our 553 enrolled startups. Overall, we observed 98.85% agreement between the two research assistants which is substantially higher than the expected agreement of 92.75% given the distribution of the data meaning that our interrater reliability has a statistically significant kappa of 0.8417 ( $Z=37.70$ ;  $P>Z$  0.000). The source of the small number of disagreements between research assistants was driven primarily by how they applied the concept of “major change” for more complex or indeterminate cases. This leads the research team to feel confident that our algorithm performed well.

To create the final variable, we combine the judgements of the two research assistants. Because each of the disagreements between the research assistants were marginal, we opted to take the approach that minimized false negatives and flagged a transition as a pivot whenever either of the research assistants identified it as one. Thus, our final pivot variable was the max of the independently coded pivot variables between the two research assistants.

The final outside data collection and processing we conduct is to determine what founders of shutdown startups do in their next role. For each founder who is associated with a startup that was determined by the procedure above to have shutdown during the course of the study, we use their LinkedIn profile (either provided in survey or identified for on LinkedIn by a member of the research team). Founders for whom we cannot identify a LinkedIn profile are not included in the analysis. We identify the founder’s next role after their time at the startup and the company that they work for. We code whether the founder of the shutdown startup in question identifies as a founder or co-founder or the company they list as their next role.

### **Appendix A3: Variable Definitions and Detailed Information on Variable Construction**

After all surveys received were assigned to their `company_id` and harmonized using the procedures described above and external data was hand collected from our team of undergraduate RAs, we then had to process the variables into their final state. This section details all the variables in our final data set and describes how they were coded into their final version from the raw data described above.

## **Outcome Variables:**

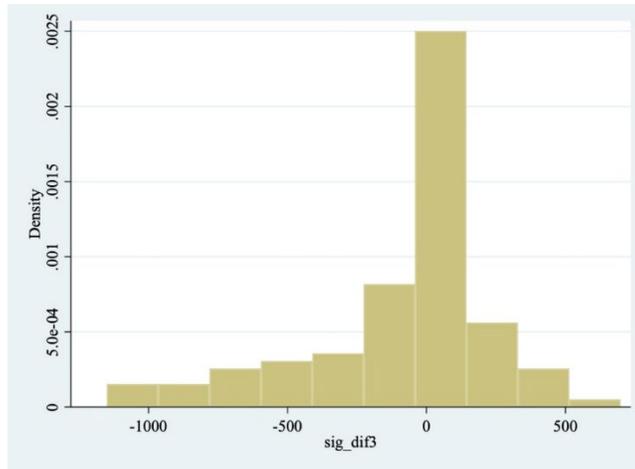
We first describe the construction of our outcome variables. We proceed step by step and define the construction of each variable.

### *Survival/Shutdown:*

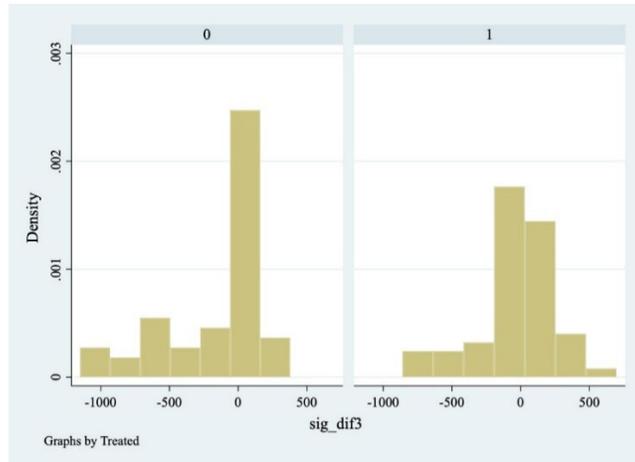
The time to shutdown variable is constructed by aggregating the large number of external signals of operation detailed in Appendix A2 and our follow-up survey, Q103. In the survey question, we ask the startups whether they have shut down and the date of closure if they have. While we received data on a number of closures, our information was far from complete. Indeed, the claw-back procedures work poorly in the case of closed startups because our contract is with the startup and not the founders. In order to get a broader measure of startup closure, we use the survey responses we obtained as “ground truth” measures of startup closure for those startups that we have both external and internal information. We then took our large number of measures of startup closure dates and attempted to create an “order of precedence” for which variables to use first and last. For example, if we have information on all of our shutdown variables—which of the dates should we use first to obtain our shutdown date, and which should we use last in order to minimize error in our ground truth data. This order of precedence is key because we do not have all variables for all startups, so we will want to use the best variables first when we have them but resort to less reliable shutdown signals when they are available. We explored all potential orderings of the variables into order of precedence and picked the variable ordering with the lowest amount of error when compared to our ground truth data available for the subset of closed firms in our survey data. Using this order of precedence, we constructed a shutdown date for all the startups in our sample for which we had at least one signal which suggested that they had indeed shutdown. In Figure A3, we show how our algorithm to construct our time to shutdown variable performed on our ground truth sample. Overall, the variable is clearly centered around zero with a large peak around the correct shutdown date as revealed by the ground truth data. A Kolmogorov-Smirnov test of the equality of distributions cannot reject the null that the treatment and control distributions are equal ( $p=0.34$ ). Startups that exited via acquisition are marked as survivors, not deaths. We construct an indicator for each followup period as to whether the startup is still operating, and an indicator as to whether the startup survived to endline.

**Figure A3: Difference between predicted closure and observed closure**

**Panel A: Overall**



**Panel B: By Treatment Status**



*{Raise}*:

The data for this dependent variable in the data set used in the main paper derives from the PitchBook data detailed in Appendix A2. We create a startup-level variable which is set to 1 if the startup has any funding rounds noted in PitchBook with revealed dollar amounts and 0 otherwise. We construct two versions of this variable: one that is an indicator for each followup period and another that is an indicator for the entire 3-year period (2 years of the experiment as well as an additional year after the survey period).

Pivots:

The procedure for the construction of the pivot variable is described in Appendix A2 above. Our pivot data gives us a measure of whether the startup pivoted between two successive surveys (e.g., follow-up 1 and 2). We construct an indicator for each followup period indicating whether the startup has pivoted since the last survey.

Funding Amount:

The data for this dependent variable in the data set used in the main paper derives from the PitchBook data detailed in Appendix A2. For each startup, we sum the dollar amount of funding that the startup received after their enrollment date from our PitchBook data. We then assign a value of 0 to all startups that do not have quantitative fundraising data in our PitchBook data. We then use the formula  $y = \log(x+1)$  to define our final logged funding variable where  $x$  represents the total number of dollars of funding received. As above, we construct this variable for each of the followup periods as well as the entire 3-year period.

Time to First Fundraise:

We use the date of the first round of fundraising post completion of the intervention at the startup's site and calculate the number of days to the incidence of the first funding round.

Employment:

The data for this dependent variable are obtained from Q21 and Q32 of the followup survey. In each wave of the survey, we ask the startups how many founders, full time, and part time employees they have. We sum the number of non-founder employees number for each survey period.

Revenue:

At baseline the startup reports a quarterly revenue run rate in Q25. If the dollar value of revenue is reported as 0 or is missing the startup is considered not to be generating revenue at the time they enter the experiment. In follow up surveys the startup is asked about quarterly run rate in Q36. We use the natural logarithm of one plus quarterly revenue reported in each followup period.

Post-shutdown Founder Labor Choices:

Using the procedure described in Appendix 2 above, we code whether the founder's next role is as a founder or co-founder of a new startup, and construct an indicator variable taking the value 1 if they are a founder or co-founder in their next role, and 0 otherwise.

## **Company Characteristics:**

### Corporation:

This indicator variable takes value=1 if the company is registered as a C-corp at the time of enrollment. The variable takes value= 0 otherwise. In our survey, we collected other categorical data regarding business form including B-corp, S-corp, LLC and limited partnerships.

### Delaware Corporation:

This indicator variable takes value=1 if the corporation is registered in Delaware at baseline (based on the Company-Level Baseline Survey, Q14). The variable takes value= 0 otherwise. Delaware registration is a proxy for initial startup quality based on previous research (Guzman and Stern 2015; 2020).

### Startup Industry:

We categorize the startup industry using the primary industry the startup reports in their baseline survey (education, finance, healthcare/biotechnology, e-commerce, IT and enterprise software, media, mobile and wireless, natural resources/energy, social enterprise, social media/networking, tourism, other).

### Startup Stage:

We categorize the stage of development of the startup using their survey responses (concept, working prototype in development, functional product with users, scaling sales).

## **Demographic Variables:**

### Age of Founders:

The baseline survey instrument asks each founder for their age. We take the mean age across founders.

### Prior Entrepreneurship Experience:

An indicator variable that takes value= 1 if at least one member of the founding or top management team answers “Yes” to the question “Do you have past startup experience?” on the management intake survey (Q13). Value=0 otherwise.

### STEM Education:

We constructed this variable using the management intake survey information on the individual’s education. For each of their degrees, we ask for the major or specialization. We then had an RA look to see if the degree was a match to one of the degrees listed on the DHS STEM Designated

Degree Program List. If it was a match, that degree took a value of 1, otherwise we coded the degree as a 0. For each startup, we then took the max of our STEM variable to define our variable so that it took the value 1 if the startup has an individual that holds at least one STEM degree and 0 otherwise.

*Business Education:*

We constructed this variable using the management intake survey information on the individual's education. For each of their degrees, we ask for the major or specialization. We then took the full list of majors and specializations listed amongst all survey respondents and coded them as either a business degree or not. Specifically, we looked for majors that had keyword terms such as Finance, Accounting, or Business. We then defined a variable which we gave a value of 1 if the degree is a business degree and 0 otherwise. We then took the max of this variable across all of the degrees for each founder, so that our variable takes a value of 1 if they hold at least one business degree and 0 otherwise. For our final variable in the data, we take the max value across all founders in the startup. The final variable used in our analysis takes the value 1 if at least one founder has at least one business degree and 0 otherwise.

*Top 10 Degree:*

We constructed this variable using the management intake survey information on the individual's education. For each of their degrees, we ask for the university or college which granted it. We take the survey responses from all of the founder responses and match them to a canonical list of universities to account for spelling and typographical differences (e.g., U. Penn vs. Univ. Penn vs. University of Pennsylvania). Next, we take the canonical list of universities and match it to the 2016 US News and World Report Ranking (USNWRR) of US colleges and universities. We define two different variables: top10 and top20. The variable top10 takes the value 1 if the university is in the top 10 of the USNWRR and 0 otherwise. The variable top20 takes the value 1 if the university is in the places 11-20 of the USNWRR. For each of the founders, we take the max of top10 for all of their degrees. We then define a variable that takes the max value of the top10 variable across all founders. That is, the variable takes the value of 1 if at least one of the founders has a top 10 degree according to USNWRR and 0 otherwise.

*Top 11-20 Degree:*

This variable follows the same coding scheme as the top 10 degree variable above except we code it using the top20 variable. The final variable takes the max value of the top20 variable across all

founders. That is, the variable takes the value of 1 if at least one of the founders has a top 11-20 degree according to USNWRR and 0 otherwise.

*Founder with P&L Experience:*

This variable uses the responses from the founder survey Q14 of the management intake survey. We define an intermediate variable at the founder level which is set to 1 if the founder answers yes to the question, “In the past, did you have P&L responsibilities as a manager in a previous company?”, and 0 otherwise. We then defined a variable at the startup level which takes the value of 1 if at least one founder had P&L experience and 0 otherwise.

*Female Founder:*

An indicator variable that takes value 1 if at least one founder identifies as a woman on our intake survey and 0 otherwise.

*Married Founder:*

This variable uses the responses from the Q18 of the baseline survey for management/founders. We define an intermediate variable at the founder level which is set to 1 if the founder answers yes to the question, “Are you married?”, and 0 otherwise. We then defined a variable at the startup level which takes the value of 1 if at least one founder is married and 0 otherwise.

*Founder with Children:*

This variable uses the responses from the founder survey Q19 of the Management-Level Baseline Survey. We define an intermediate variable at the founder level which is set to 1 if the founder answers yes to the question, “Do you have children?”, and 0 otherwise. We then defined a variable at the startup level which takes the value of 1 if at least one founder is married and 0 otherwise.

*BIPOC Founder:*

This variable uses the responses from the founder survey Q35 of the Management-Level Baseline Survey. The respondent was asked, “Which of these groups best describes you?” and they were given a list of ethnic identities including: White, Black or African American, Hispanic/Latino, American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, Other. We then defined three intermediate variables that are coded at the individual founder level. We generate an intermediate variable which is set to 1 if a founder chooses the option “Black or African American” from the list and 0 otherwise. We define an intermediate variable which is set to 1 if a founder chooses “Hispanic/Latino” from the list and 0 otherwise. We define an intermediate variable which is set to 1 if a founder chooses either “Native Hawaiian or Pacific Islander” or

“American Indian or Alaska Native” from the list and 0 otherwise. We then set one final founder-level intermediate variable which is set to 1 if any of the previous intermediate variables is set to 1 and 0 otherwise. We then aggregate these founder-level variables into a startup-level variable which is set to 1 if at least one founder identified as BIPOC, and 0 otherwise.

### **Individual Behavioral Parameters:**

#### *Max Founder Optimism:*

This variable reflects founder optimism as calculated in our intake survey according to the revised life orientation test (LOT-R) (Scheier, Carver, and Bridges 1994). Higher scores refer to *more* optimistic (i.e. less pessimistic) beliefs. When stipulated, max optimism refers to the score of the *most* optimistic founder. For each founder, their optimism is measured using their LOT-R score in the procedure described in Scheier et al. (1994). At the startup level, we then take the highest score of all founders in the startup.

#### *Max Founder Time Preference:*

Q42 on the Management-Level Baseline Survey measuring time preference is derived from the survey detailed in Graham et al. (2013) which was derived from Loewenstein et al. (2003). The question is “Would you rather win US\$10,000 now or win US\$13,000 a year from now?”. We first define an intermediate variable at the founder level which we set to 1 if the founder chooses “US\$13,000 a year from now” and 0 otherwise. We then define the startup level variable which is set to 1 if at least one founder selected “US\$13,000 a year from now” and 0 otherwise.

#### *Max Founder Risk Preference:*

This variable reflects founder risk preference as calculated in our intake survey according to Barsky et al. (1997) as implemented by Graham et al. (2013) to reflect more recent developments in this survey-based risk measure that includes language about allergies to prompt respondents into a frame in which they are actively considering a move to a new job. We code the variable based on responses to the Management-Level Baseline Survey Q55, Q56, and Q57 which provide two questions depending upon their response to Q55 and sorts the founders into four categories (See Appendix D for the full sequence of questions without the skip logic). We define an intermediate variable at the founder level which assigns each founder a risk level from the set  $\{1,2,3,4\}$ . Risk preference amongst the four categories correspond to mean  $\rho \approx 15.8, 2.9, 1.5,$  and

0.7, respectively. A founder in level 1 is the *most* risk averse and a founder in level 4 is the *least* risk averse. We then code our startup-level variable as the highest level of risk preference observed amongst the founders.

#### Appendix A4: Differential Attrition Analysis

To assess whether there are differences in the response rate to follow-up surveys between the treatment and control group, we first estimate the following model:

$$(1) \quad \text{Responded}_i = \beta_0 + \beta_1 \text{treated} + \epsilon_i$$

The results of the analysis are in models (1)-(4) in Table A4.1. We find a statistically significant difference between treatment and control in the first follow-up period (column (1)). In the rest of the follow-up periods, we find no statistically significant difference between treatment and control startups in response rate for the rest of the follow-up surveys in columns (2)-(4). To test for a potential overall difference in response rates between treatment and control, we estimate the following panel fixed effects regression (column (5), Table A4.1):

$$(2) \quad \text{Responded}_{it} = \beta_0 + \tau_t + \beta_1 \text{treated}_i + \epsilon_{it}$$

In this panel regression, we adapt equation (1) to include a follow-up level fixed effect. In column (5) we find a statistically significant difference between treated and control in terms of the rate at which startups responded to surveys. The startups enrolled in the treatment arm were 5.3% less likely to respond when compared to control.

**Table A4.1: Analysis of Differential Attrition Rates**

	(1)	(2)	(3)	(4)	(5)
	Completed Survey	Completed Survey	Completed Survey	Completed Survey	Completed Survey
Treated	-0.066*** (0.021)	-0.049 (0.032)	-0.044 (0.033)	-0.044 (0.033)	-0.053*** (0.015)
Observations	553	553	553	553	2212
Follow-up Number	Follow-up 1	Follow-up 2	Follow-up 3	Follow-up 4	Overall
Followup Fixed Effect	-	-	-	-	X

Note: In each of the columns, we report the results of a regression of treatment status on survey completion. For columns (1)-(4), we use the estimating equation described in equation A1 at the follow-up noted by the entry in the “Follow-up Number” row. Column (4) is a panel regression with follow-up wave fixed effects as described in equation A2. Standard errors in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Given the evidence of differential attrition in our sample, we follow the steps taken in McKenzie (2017) to undertake a series of analyses to understand the potential impact of differential attrition on our results. This analysis follows several steps: (1) assess whether or not there are significant differences in the startups that attrited from our follow-ups across treatment and control groups in terms of baseline covariates and (2) to use a number of statistical techniques to assess the robustness of our results to differences across attrited and non-attrited startups. While we conduct these analyses to assess the robustness of our results, we also note that many of our key variables are derived from sources of data outside of our survey measures so that our results are not entirely dependent upon startup attrition status.

To assess the potential differences between attrited and non-attrited startups, we conduct two related analyses. First, we estimate regression models similar to equation (1) where we now regress treatment status on each of the baseline covariates in our study across two groups: (1) those that completed the surveys through to our last follow-up survey and (2) those that attrited before endline. In Table A4.2, we provide the means for treatment and control startups as well as the p-value for the coefficient estimate on the treated variable in our regression for the two groups. In the subgroup that responded to our surveys through to endline, we see no statistically significant differences between treatment and control across any of the baseline covariates (although we do note that there are variables close to statistical significance). In the attrited subgroup, we do observe three baseline covariates for which we observe statistically significant differences between treatment and control (Business Education, Top 10 Degree, and Founder Risk Preferences). Across the two subgroups, we would expect to observe some statistically significant results to occur at random in our sequential covariate-level tests of difference (we did not apply a multiple comparisons correction). Thus, to assess the degree to which treated and control startups differ systematically across the two subgroups, we conduct a joint orthogonality test for each of the two subgroups and find no statistical evidence that the two subgroups vary systematically between treatment and control. Taken together, we believe that these tests show that treatment and control groups are well-balanced across the two subgroups.

**Table A4.2: Balance on Baseline Covariates by Response Status at Follow-up 4**

	Responded to Follow-Up 4			Attrited at Follow-Up 4		
	Treatment	Control	p-value	Treatment	Control	p-value
Corporation	0.46	0.39	0.122	0.47	0.39	0.528
Delaware Registration	0.45	0.4	0.326	0.41	0.46	0.436
Baseline Funding	0.5	0.29	0.187	0.52	0.26	0.498
Baseline Employment	2.42	2.77	0.384	2.63	3.09	0.522
Baseline Revenue	0.21	0.17	0.42	0.17	0.69	0.212
Female Founded	0.38	0.35	0.488	0.39	0.38	0.638
Prior Entrepreneurship	0.98	0.98	0.681	0.98	0.98	1
STEM Education	0.52	0.59	0.1	0.45	0.43	0.868
Business Education	0.51	0.43	0.1	0.52	0.38	0.079
Top 10 Degree	0.18	0.19	0.71	0.23	0.11	0.036
Top 11-20 Degree	0.12	0.13	0.752	0.08	0.05	0.678
Founder with P&L Experience	0.57	0.5	0.122	0.55	0.48	0.898
Married Founder	0.6	0.56	0.333	0.52	0.52	0.796
Founder with Children	0.47	0.44	0.471	0.47	0.5	0.561
BIPOC Founder	0.23	0.23	0.991	0.36	0.25	0.26
Max Founder Optimism	19.56	20.1	0.107	20.72	19.75	0.095
Max Founder Time Preference	0.67	0.63	0.336	0.67	0.64	0.497
Max Founder Risk Preference	3.62	3.62	0.937	3.66	3.4	0.075
Sample Size	196	237		64	56	
Joint orthogonality test:			1.1			1.04

Although these results support the conclusion that treatment and control groups remain comparable, we conduct additional tests of the sensitivity of our results to attrition. We rely on Lee (2009) trimming bounds and Imbens and Manski (2004) partial-identification bounds, which are well-suited to experimental settings with moderate differential attrition and ordered outcomes, and which provide informative robustness assessments under economically plausible assumptions. The purpose of these attrition bounds is to understand the sensitivity of our results to differential attrition. Both the Lee (2009) and Imbens and Manski (2004) approach are built for data structures where there is only one outcome per company. For our employment, revenue, and pivot results, our main analyses employ a panel approach to measure differences between treatment and control over time. In order to make our panel data regressions “fit” the underlying assumptions of these bounding approaches, we take the following steps. First, we residualize the dependent variable using a regression of the baseline value for that variable (e.g., baseline revenue), site fixed effects, and period fixed effects. Next, we run the Stata command “leebounds” with the tight option set to estimate the effect of treatment controlling for followup periods so that our resulting Lee (2009) and Imbens and Manski (2004) bounds match as closely as possible to

the underlying assumptions of the model. For the next role after shutdown, we do not have a panel problem, and do not make any adjustments.

The estimates applying these approaches are laid out in Table A4.3 below.

**Table A4.3. Differential Attrition Bounds**

	Founded Startup			
	Next	Employment	Revenue	Pivot
Original Estimate	-0.095** (0.036)	1.571*** (0.511)	0.622* (0.344)	-0.026** (0.011)
Lee (2009) Bounds				
Lower	-0.159*** (0.057)	0.938** (0.389)	-0.283 (0.276)	-0.027** (0.011)
Upper	-0.082* (0.045)	2.638*** (0.365)	1.518*** (0.304)	0.005 (0.014)
Imbens and Manski (2004) Bounds	[-0.233, -0.024]	[0.440, 3.107]	[-0.637, 1.907]	[-0.041 -0.024]

Altogether, these analyses suggest that our main conclusions are robust to reasonable forms of differential attrition.

## Appendix B: Robustness to Inverse Hyperbolic Sine

This appendix documents the results of robustness checks and additional analyses made to support the main paper, specifically, alternative models for logged variables using the inverse hyperbolic sine as an alternative transform.

**Table B1.1: Alternative Models with Inverse Hyperbolic Sine**

**Panel A: Funding Panel**

	(1)	(2)	(3)
	IHS Funding	IHS Funding	IHS Funding
Treated	0.416*** (0.158)	0.365** (0.153)	0.381** (0.149)
Observations	3318	3318	3318
Site Fixed Effects	X	X	X
Followup-Period Fixed Effects	X	X	X
Only Unbalanced Covariates	-	X	-
All Covariates	-	-	X

**Panel B: Funding Endline**

	(1)	(2)	(3)
	IHS Funding	IHS Funding	IHS Funding
Treated	1.569** (0.523)	1.423*** (0.447)	1.435*** (0.420)
Observations	553	553	553
Site Fixed Effects	X	X	X
Only Unbalanced Covariates	-	X	-
All Covariates	-	-	X

**Panel C: Revenue**

	(1)	(2)	(3)
	IHS Revenue	IHS Revenue	IHS Revenue
Treated	0.667* (0.366)	0.674* (0.360)	0.594* (0.323)
Logged Baseline Revenue	0.605*** (0.033)	0.590*** (0.035)	0.380*** (0.045)
Observations	1252	1252	1252
Followup-Period Fixed Effects	X	X	X
Site Fixed Effects	X	X	X
Only Unbalanced Covariates	-	X	-
All Covariates	-	-	X

*Notes.* This table replicates the analysis of models in Table 8 and Table 10. Instead of log 1+ transform, we use the inverse hyperbolic sine. All else remains the same.

**Table B1.2: Alternative ToT Models using Inverse Hyperbolic Sine**

**Panel A: Logged Funding at Endline**

	IHS Funding					
	(1)	(2)	(3)	(4)	(5)	(6)
Sessions Attended	0.725*** (0.243)	0.645*** (0.207)	0.656*** (0.189)			
Attended Any Sessions				2.402*** (0.831)	2.158*** (0.692)	2.205*** (0.646)
Site Fixed Effects	X	X	X	X	X	X
Only Unbalanced Covariates	-	X	-	-	X	-
All Covariates	-	-	X	-	-	X

**Panel B: Logged Revenue Panel**

	IHS Revenue					
	(1)	(2)	(3)	(4)	(5)	(6)
Sessions Attended	0.231 (0.184)	0.223 (0.182)	0.204 (0.153)			
Attended Any Sessions				0.769 (0.592)	0.746 (0.598)	0.690 (0.505)
Site Fixed Effects	X	X	X	X	X	X
Only Unbalanced Covariates	-	X	-	-	X	-
All Covariates	-	-	X	-	-	X

*Notes.* This table replicates the analysis of models in Panel B and Panel C of Table 13 using the inverse hyperbolic sine instead of  $\log(1+X)$  for funding at endline and revenue by followup period.

## Appendix C: Treatment Heterogeneity

The application of causal random forests to the study of treatment heterogeneity first requires an estimated model that performs well in both the prediction of the average treatment effect and deviations from the average treatment effect conditional on covariates, the conditional average treatment effect (CATE). This appendix documents the output of the calibration tests and exploration of the estimated treatment heterogeneity from the generalized random forest (GRF) models.

As a first step, we plot the distribution of the out of bag estimates of CATE in Figure C1. A feature of the GRF models is that they take a fraction of the data as a hold out sample for each of the trees in the forest, called the out of bag sample. The estimated CATE for each of the observations in our sample is the weighted CATE across all trees for which that observation is out of bag. In both panels of C1, there is substantial spread in the distribution of the estimated out of bag CATE, suggesting that there may be important heterogeneity in the treatment effects in our setting. This visual inspection of the data, however, does not imply immediately that the variation in estimated CATE is statistically significant.

To assess this potential, Chernozhukov et al. (2018) proposed a “best linear predictor” method to assess the quality of the GRF model in capturing both the ATE and the systematic deviations from it based on the covariates (CATE). Concretely, the Chernozhukov method takes the following steps. First, create two separate deviation scores:  $C_i = \bar{\tau}(Z_i - \hat{e}(X_i))$ , which is the ATE ( $\bar{\tau}$ ) weighted by the difference between treatment ( $Z$ ) and the estimated propensity to treat, and  $D_i = (\hat{\tau}(X_i) - \bar{\tau})(Z_i - \hat{e}(X_i))$ , which is the difference between the CATE for that observation and the estimated ATE weighted by the difference between treatment and the estimated propensity to treat. We then regress these two scores against the deviations from the outcome model generated by our GRF model,  $Y_i - \hat{m}(X_i)$ . We can interpret the coefficients from this regression as follows. If the coefficient on  $C_i$  is close to 1, then it has estimated the ATE well. If  $D_i$  is close to 1, then it means our GRF model’s estimates of CATE have captured the systematic deviations from ATE well.

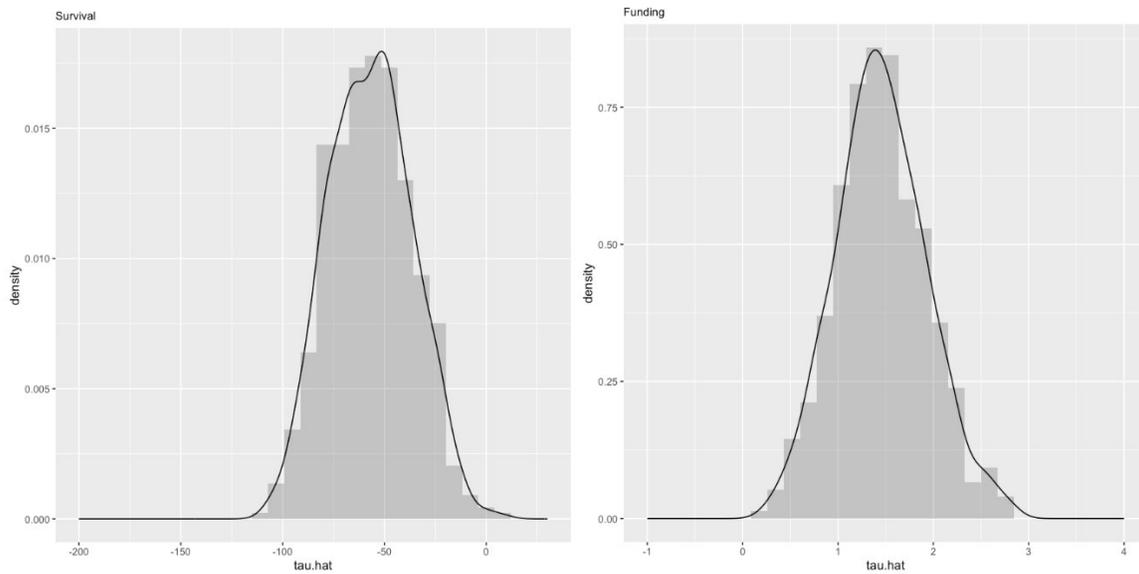
We present the outputs of our Chernozhukov et al. (2018) test in Table C1. Across both models, we observe statistically significant estimates for the coefficient on the C score that are close to 1. This means that both of our GRF models do a good job of capturing the ATE of our treatment. Similarly, both models show statistically significant estimates for the coefficient for the D score

with estimates around 1.5-1.7. These results can be interpreted as evidence that there is substantial systematic heterogeneity, though our model may not fully capture all of it.

**Table C1: Chernozhukov (2018) Calibration Tests**

	(1)	(2)
	Funding	Survival
C (ATE Fit)	1.031*** (0.087)	1.001*** (0.017)
D (CATE Fit)	1.670*** (0.283)	1.511*** (0.370)
Observations	553	553

**Figure C1: Distribution of CATE**



## **Appendix D: Survey Instruments**

Our surveys captured extensive information about the firms and startup founders. In Appendix D1, we show the complete text of the survey given to enrolled startups at baseline capturing all relevant startup information. Appendix D2 shows the full text of the survey of startup founders and managers at baseline. Appendix D3 shows the full text of the follow-up survey. For the followup survey, which was at the company level, the questions did not necessarily force the survey-taker to respond, and thus not all questions were answered by the survey takers. The existence of a question in the survey instrument does not necessarily mean that reasonable data was collected on that data item. The analysis in this paper using the survey responses is restricted to data items that were required from the respondent, except where otherwise mentioned.

# Appendix D1: Baseline Survey (Company Level)

## Intake Survey for Company

### Introduction Block

Thank You. Your startup company has been asked to participate in a research study conducted by Rice University and the Sloan School of Management at the Massachusetts Institute of Technology (M.I.T.). The purpose of the study is to understand what factors can contribute to increasing the likelihood of success of a startup company, including founder backgrounds, skills training, company decisions, and adoption of systems. The results of this study will be submitted for publication in a peer-reviewed journal. Your startup company was selected as a possible participant in this study because of its stage of development, lifecycle, and location. As the authorized representative of your company, please read the information below, and ask questions about anything you do not understand, before deciding whether or not to allow your company to participate.

- Please remember that participation in this survey is voluntary and your company has the right to not participate.

- If your company is selected for the entrepreneurial education component of this study, your senior management team will receive skills and knowledge training lasting a total of approximately 24-26 hours. The participating members of your senior management team will be asked to sign a human research subjects consent form to participate in the training. Training is voluntary, and the members of your team may cease their participation at any time. Team members attending the training will be asked to complete an evaluation of the training content and training instruction, and will be assessed on their knowledge of the topics covered before and after the instruction.

Blocks/Ajax/GetSurv...

Do you sell to enterprises or consumers (select all that apply)?

- Enterprise
- Consumers

What stage of development is your company in?

- Concept
- Working Prototype in development
- Functional product with users
- Scaling sales

Please provide a description of your business. This should be the equivalent of an elevator pitch, approximately 1-2 paragraphs

In the next few text boxes, we would like you to describe the current goals/milestones of your company (we have provided space for three, so leave blank boxes if you have fewer). Do not worry about the ordering, but please provide as much detail as required to communicate the goals as your team understands them.

Goal A

Goal B

Goal C

Does your company have:

	Yes	No	If yes, please provide the URL/App Name/Handle, if no, please write "NA"
A Website	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
A mobile app	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
A Twitter account (for the startup, not personal founder handles)	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
A facebook page for your startup	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
A linkedin page for your startup	<input type="radio"/>	<input type="radio"/>	<input type="text"/>

What is the OS?

- Android
- iOS
- Both

Do you have a business plan/pitch deck

- Yes
- No

If you do have a business plan/pitch deck, would you be willing to upload your current version (optional)?

**Founder & Employee Info**

How many full-time employees does your startup have (founders + non-founder employees)?

0 3 5 8 10 13 15 18 20 23 25

Founders

Non-Founder Employees

Part-time Employees

Please give us information on each of the founders

	Click to write Column 1						Pl t role
	Founder Name (First, Last)	Founder Title	Work Email	Personal Email	linkedin url	Phone Number	
Founder 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Founder 2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Founder 3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Founder 4	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Founder 5	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Please give us information on each of your non-founder senior management, if any (Including C-level senior VPs or others with similar roles & responsibilities)

	Name (First, Last)	Title	Work Email	Personal Email	Phone Number	LinkedIn URL	Profile
Non-Founder Manager 1							
Non-Founder Manager 2							
Non-Founder Manager 3							
Non-Founder Manager 4							
Non-Founder Manager 5							
Non-Founder Manager 6							
Non-Founder Manager 7							

What was last quarter's revenue run rate (total revenues earned during last quarter in dollars so one thousand dollars is 1000):

What was last quarter's profit (if positive in dollars so one thousand dollars is 1000):

How has the company been financed to date (click all that apply)?

- Founder savings
- Family and Friends
- Company's own revenues
- Angel Financing
- Venture Capital
- Accelerator investment
- Crowdfunding/kickstarter/indiegogo
- Other

In total, how much have you raised to date in external financing?

Please describe the details of all your crowdfunding campaigns

	Click to write Column 1			
	Platform	Date (M/YYYY)	\$ Raised (in \$ 1,000)	Campaign URL
Campaign 1				
Campaign 2				
Campaign 3				

**Company Financials**

What is your approximate monthly burn-rate (total amount that your company spends per month in dollars so one thousand dollars is 1000)

Please describe the details of your angel investments by round

	Click to write Column 1		What type of investment?		Click to write Column 3		
	Date (MM/YYYY)	Amount (in \$ 1,000)	Priced Round	Convertible Note	If Priced Round, what percentage did investor receive?	If Convertible Note, what is the discount to next round?	If convertible note, what is the cap (if applicable)?
Angel Round 1			<input type="radio"/>	<input type="radio"/>			
Angel Round 2			<input type="radio"/>	<input type="radio"/>			
Angel Round 3			<input type="radio"/>	<input type="radio"/>			
Angel Round 4			<input type="radio"/>	<input type="radio"/>			
Angel Round 5			<input type="radio"/>	<input type="radio"/>			
Angel Round 6			<input type="radio"/>	<input type="radio"/>			

Please list the number of multiple concurrent offers you had for each of the funding rounds listed above:

- 1
- 2
- 3
- 4
- 5
- 6
- 6
- 7
- 8
- 9
- 10

- Angel Round 1
- Angel Round 2
- Angel Round 3
- Angel Round 4
- Angel Round 5
- Angel Round 6

Please describe the details of your accelerator investments by round

	Click to write Column 1		What type of investment?		Click to write Column 3		
	Date (MM/YYYY)	Amount (in \$ 1,000)	Priced Round	Convertible Note	If Priced Round, what percentage did investor receive?	If Convertible Note, what is the discount to next round?	If convertible note, what is the cap (if applicable)?
Accelerator Round 1			<input type="radio"/>	<input type="radio"/>			
Accelerator Round 2			<input type="radio"/>	<input type="radio"/>			
Accelerator Round 3			<input type="radio"/>	<input type="radio"/>			
Accelerator Round 4			<input type="radio"/>	<input type="radio"/>			
Accelerator Round 5			<input type="radio"/>	<input type="radio"/>			
Accelerator Round 6			<input type="radio"/>	<input type="radio"/>			

Did you have multiple concurrent offers (i.e. multiple active term sheets) for any of the funding rounds listed above?

- Yes
- No

Please describe the details of your VC investments by round

	Click to write Column 1		Click to write Column 2		Equity Received		To VC
	Date (MM/YYYY)	Amount (in \$1,000)	What percentage did the investor receive?	What is the liquidation preference? (1x? 1.5x? etc)	Participating Preferred	Regular Preferred	
VC Round 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
VC Round 2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
VC Round 3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
VC Round 4	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
VC Round 5	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
VC Round 6	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>

Did you have multiple concurrent offers (i.e. multiple active term sheets) for any of the VC funding rounds listed above?

Yes  
No

Please list the number of multiple concurrent offers you had for each of the funding rounds listed above:

	1	2	3	4	5	6	6	7	8	9	10
VC Round 1	<input type="text"/>										
VC Round 2	<input type="text"/>										
VC Round 3	<input type="text"/>										
VC Round 4	<input type="text"/>										
VC Round 5	<input type="text"/>										
VC Round 6	<input type="text"/>										

Please also provide a copy of the final term sheet for any accelerator angel, or VC investments, if available:

You selected Other, please describe:

**Social Network Questions**

Do you have a board of advisors?

Yes  
No

How many people are on your board of advisors?

	0	1	2	3	4	5	6	7	8	9	10
Number of Advisors	<input type="text"/>										

Do you have a formal board of directors?

Yes  
No

How many people are on your board of directors?

	0	1	2	3	4	5	6	7	8	9	10
Number of directors	<input type="text"/>										

Do any of your investors sit on your board?

Yes  
No

How many of your investors are on your board of directors?

	0	1	2	3	4	5	6	7	8	9	10
Number of investors	<input type="text"/>										

Do any independent outsiders (i.e. not company employees or investors) sit on your board?

Yes  
No

How many independent outsiders are on your board of directors?

	0	1	2	3	4	5	6	7	8	9	10
Number of outsiders	<input type="text"/>										

What companies do you sit next to at the incubator/co-working space? (please list)

Are there other companies at the incubator/co-working space that you often obtain insights from or share insights with? (please list)

Are there any other companies that you share or obtain insights from that reside outside the incubator/co-working space? (please list)

**Software**

Do you use any management software or systems (e.g. salesforce, zenefits, quickbooks, slack, etc.)?

- Yes
- No

Please list what management software or systems (e.g. salesforce, zenefits, quickbooks, slack, etc.):

Do you use cloud computing or storage solutions such as AWS/Rackspace/Azure?

- Yes
- No

Which cloud solutions do you use?

**Entre Education Information**

How often do team members work in the incubator/co-working space?

- More than once per week
- Once per week
- A couple of times per month
- Once per month
- Less than once per month

How often do team members attend the incubator/co-working space's workshops, speaker sessions and office hours?

- More than once per week
- Once per week
- A couple of times per month
- Once per month
- Less than once per month
- never

How frequently do members of your startup attend entrepreneurship networking events (total events attended across all members of your team)?

- More than once per week
- Once per week
- A couple of times per month
- Once per month
- Less than once per month
- never

Has your team been through any formal entrepreneurship skills/training programs (e.g. accelerator, business school or university courses, online courses)?

- Yes
- No

What kind of courses have you used?

	Click to write Column 1		Click to write Column 2
	Yes	No	
Business school or university courses	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Accelerator Programs	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Online Courses	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Other (please list)	<input type="radio"/>	<input type="radio"/>	<input type="text"/>

**FEAFE 04042018**

In general, do you formally test new ideas before making a final decision on new approaches concerning products or policies within your company?

- Yes
- No

Below we list various tools for decision making:

	Does your company use this tool?		If yes, please provide an example and please briefly describe your key outcome measures (e.g., purchase rates, product performance, click rates, etc.) and how long it takes
	Yes	No	
<b>Observation</b> <i>Observation is a research technique in which researchers watch how people or consumers behave and interact in the market under natural conditions</i>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
<b>Immersion</b> <i>Immersion is a research technique for developing shared context with the customer or user's pain points and typically involves shadowing or working alongside them</i>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
<b>Analytics</b> <i>Analytics are the application of statistical modeling to your company's data to measure performance and guide planning</i>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
<b>Focus Groups</b> <i>Focus groups are guided discussions that provide feedback from a deliberately assembled group of people</i>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
<b>Surveys</b> <i>Surveying is a data collection technique involving the use of questionnaires</i>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
<b>Expert Consultation</b> <i>Consultation is a methodology where increasing levels of expertise are brought to bear on an issue as it's being resolved</i>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
<b>Beta Testing</b> <i>Beta testing is a phase of development in which your product is subjected to real-world use by members of its intended audience</i>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
<b>Iterative Testing</b> <i>Iterative testing is a design methodology based on the cycle of refining then analyzing your product or process</i>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
<b>Conjoint Analysis</b> <i>Conjoint analysis is a survey based technique that elicits preferences, values, ratings or rankings for product attributes and features</i>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
<b>Other forms of testing</b> <i>Please describe</i>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>

Where do you use these tools? (select all that apply)

- Storefront
- Third party location
- Website or platform (yours)
- Website or platform (third party e.g. Facebook)
- Other

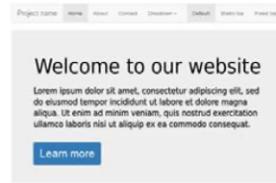
My business has not used any decision making tools

In what areas of your business have you conducted tests? (select all that apply)

- Pricing/Finance
- Marketing/Advertising
- Product Design
- Human Resources/Employee Incentives
- Customer/User Behavior
- Product Demand
- Business Model
- Other

My business has not conducted any tests

Now we're going to ask you about a particular type of testing called Randomized Controlled Trials (RCTs). It is also called randomized experimentation, A/B testing, or split testing.



Examples of randomized testing include medical drug trials, where among a group of participants, half are randomly selected to receive a drug and half are randomly selected to receive a placebo. Afterwards their health outcomes are compared. Examples in business include offering different prices to different customers, or showing ad A to some customers and ad B to others. The key factor in all of these examples is that whether a customer receives version "A" or version "B" is determined RANDOMLY, as in by the flip of a coin or toss of a die.

Did any of the tests you conducted in the last six months utilize randomization?

- Yes
- No
- My business did not conduct any tests

In what areas of your business have you conducted RANDOMIZED testing? (select all that apply)

- Pricing/Finance
- Marketing/Advertising
- Product Design
- Human Resources/Employee Incentives
- Customer/User Behavior
- Product Demand
- Business Model
- Other

Where have you conducted these RANDOMIZED tests? (select all that apply)

- Storefront
- Third party location
- Website or platform (yours)
- Website or platform (third party e.g. Facebook)
- Other

Please briefly describe the RANDOMIZED testing you have conducted in the last 6 months

Why did you choose to randomize?

Did your business change as a result of the experimentation?

- Yes
- No

You answered yes, please describe the change:

*(for example we raised prices or altered marketing strategy)*

You answered no, please describe why not:

*(for example the tests were uninformative or the policy we tested was not more successful than what we were already doing)*

Why not?

We would like to ask you some further questions about randomization. Please indicate how much you agree or disagree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Before this survey, I was familiar with randomized experimentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have experience conducting randomized experimentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have the resources in my organization to run a randomized experiment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Randomized experimentation could help me to answer questions that are important to my organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Running a randomized experiment is more financially costly than other types of tests I could run	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Running a randomized experiment is time consuming, disruptive or logistically difficult	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We don't have enough customers/units/sample size to run a randomized experiment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Randomized experimentation is risky	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experimentation can lead to bad PR or customer dissatisfaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What risks, if any, do you see in running randomized tests?

What benefits, if any, do you see in running randomized tests?

What factors would lead to you conduct more randomized testing?

Which of the following would you consider a randomized controlled experiment (select all that apply)

- A company tracks which customers see its online ads and which don't and compares purchase rates between them
- A company sends their customers with odd numbered addresses coupons for 10% off and their customers with even numbered addresses coupons for 20% off and compares redemption rates between the two groups
- A company is rolling out the option to work from home. Employees who win a lottery are offered the option to work from home and everyone else is not. The company compares productivity between employees
- The price of a company's product has changed twice in the last year. To estimate the response of customer demand to price, the company compares average sales under the different prices
- A company is considering two different features for its product. To estimate customer demand for the features, the company asks 100 customers how likely they would be to purchase the product with feature A vs. with feature B
- A company is considering two different versions of its webpage. The company alternates between the two versions each time a new customer lands on the webpage and compares purchase rates between customers who land on webpage A and customers who land on webpage B

### End of Survey

Thank you for taking this initial survey. To receive your payment for this and the other surveys, we require you to fill out your enrollment paperwork. Please follow the docuSign link [HERE](#).

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## Appendix D2: Baseline Survey (Startup Management/Founder Level)

rs of the  
Top Management Team

### Introduction Block

Thank You. You have been asked to participate in a research study conducted by Rice University and the Sloan School of Management at the Massachusetts Institute of Technology (M.I.T.). The purpose of the study is to understand what factors can contribute to increasing the likelihood of success of a startup company, including founder backgrounds, skills training, company decisions, and adoption of systems. The results of this study will be submitted for publication in a peer-reviewed journal.

- Please remember that participation in this survey is voluntary and you may stop any time.
- If you agree to participate, you will be asked to fill out a baseline background questionnaire regarding your education, work history, and demographics. You will also be asked to take a personality test.
- If selected for the entrepreneurial education component of this study, you will receive skills and knowledge training and also receive access to a repository of online materials and videos with additional resources on the covered topics.
- We do not anticipate any risks associated with participation in this study.
- The researchers conducting this study will sign a strict non-disclosure form pertaining to any information you provide as part of this study. Unless you give us permission to use your name, title, and/or quote you in any publications that may result from this research, your personal information will be kept strictly

Do you have past startup experience?

- Yes
- No

Please describe briefly your past startup experience:

In the past, did you have P&L responsibilities as a manager in a previous company?

- Yes
- No

Please describe briefly your past P&L responsibilities as a manager:

Do you have past professional experience in financial analysis or management?

- Yes
- No

Please describe briefly:

Are you Married?

- Yes
- No

Do you have Children?

- Yes
- No

How many?

What is your zip code of residence?

What country were you born in?

In what city did you attend:

- Elementary School
- High School

What country (ies) were your parents born in?

Was one or both of your parents a small business owner or independent professional?

- Yes
- No

Were you a user of the product or service category prior to founding the company?

- Yes
- No

Do you have unpaid student loans?

- Yes
- No

How often do you attend the incubator/co-working space's workshops, speaker sessions and office hours?

- More than once per week
- Once per week
- A couple of times per month
- Once per month
- Less than once per month

Have you personally invested money in the company?

- Yes
- No

Where did the idea for the company come from, to the best of your knowledge and recollection?

Have you specifically been through any formal entrepreneurship skills/training programs (e.g. accelerator, business school or university courses, online courses)?

	Click to write Column 1		Click to write Column 2
	Yes	No	Approximate Name of source and title of resources
Business School or university courses	<input type="radio"/>	<input type="radio"/>	<div style="border: 1px solid black; width: 50px; height: 15px;"></div>
Accelerator Programs	<input type="radio"/>	<input type="radio"/>	<div style="border: 1px solid black; width: 50px; height: 15px;"></div>
Online Courses	<input type="radio"/>	<input type="radio"/>	<div style="border: 1px solid black; width: 50px; height: 15px;"></div>

Are there any individuals that are close personal mentors or advisors that you speak to directly about your startup? If so, please list them:

Have you ever taken a Myers Briggs (MBTI) evaluation?  
(if you are interested in taking a short one, please  
visit <https://www.16personalities.com/free-personality-test>)

Yes  
No

Here are a number of personality traits that may or may not apply to you. Please choose a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

What was your result?

ISTJ                    ISFJ                    INFJ                    INTJ  
ISTP                    ISFP                    INFP                    INTP  
ESTP                    ESFP                    ENFP                    ENTP  
ESTJ                    ESFJ                    ENFJ                    ENTJ  
Don't  
Remember/Prefer not  
to answer

Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

I see myself as:

Which of these groups best describes you?

White  
Black or African American  
Hispanic/Latino  
American Indian or Alaska Native  
Asian  
Native Hawaiian or Pacific Islander  
Other

What is your Gender?

Male  
Female

What is your age?

Do you need to consult anyone for approval before an making an expenditure at your startup?

- Yes
- No

How much could you spend without consulting a superior or another member(s) of the management team?

Have you ever been part of the hiring process in your startup?

- Yes
- No

How has your input in the hiring process been used:

I get to choose the employee I want

My choice of employee is the one most likely selected, but requires approval from a superior or other members of the management team

I provide input in hiring decisions, but the choice is made by a superior or other members of the management team

I have do not have input in the hiring decisions

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## Appendix D3: Follow-Up Survey

### Sample Follow-On Survey

#### Company Info

Company Name (the one used to enroll in ESI):

Are you still in business?

When did you shut down?

Do you sell to enterprises or consumers (select all that apply)?

What name does your company use on legal documents?

When did you change your name?

What stage of development is your company now in?

Please provide a current description of your business. This should be the equivalent of an elevator pitch, approximately one paragraph

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How many employees does your startup have (founders + non-founder employees)?

0 5 10 15 20 25 30 35 40 45 50

Founders

Non-Founder Full-Time Employees

Non-Founder Part-time Employees

Please give us information on any NEW founders you have added to your team

	Click to write Column 1						C
	Founder Name (First, Last)	Founder Title	Work Email	Personal Email	linkedin url	Phone Number	Pl t role
Founder 1	<input type="text"/>						

Please give us information on any NEWLY HIRED non-founder senior management, if any  
(Including C-level senior VPs or others with similar roles & responsibilities)

	Click to write Column 1		What type of Investment?		Click to write Column 3		
	Date (MM/YYYY)	Amount (in \$)	Priced Round	Convertible Note	If Priced Round, what percentage did investor receive?	If Convertible Note, what is the percent discount to next round?	If convertible note, what is the cap (in \$ if applicable)?
Angel Round 1	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Angel Round 2	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Angel Round 3	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Angel Round 4	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Angel Round 5	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Angel Round 6	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Please list the number of multiple concurrent offers you had for each of the funding rounds listed above:

	1	2	3	4	5	6	7	8	9	10
Angel Round 1	<input type="text"/>									
Angel Round 2	<input type="text"/>									
Angel Round 3	<input type="text"/>									
Angel Round 4	<input type="text"/>									
Angel Round 5	<input type="text"/>									
Angel Round 6	<input type="text"/>									

Please describe the details of your new accelerator investments by round

	Click to write Column 1		What type of Investment?		Click to write Column 3		
	Date (MM/YYYY)	Amount (in \$ 1,000)	Priced Round	Convertible Note	If Priced Round, what percentage did investor receive?	If Convertible Note, what is the discount to next round?	If convertible note, what is the cap (in \$ if applicable)?
Accelerator Round 1	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Accelerator Round 2	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Accelerator Round 3	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Accelerator Round 4	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Accelerator Round 5	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Accelerator Round 6	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Did you have multiple concurrent offers (i.e. multiple active term sheets) for any of the angel funding rounds listed above?

Yes  
No

Please describe the details of your new VC investments by round?

	Click to write Column 1		Click to write Column 2		Equity Received		
	Date (MM/YYYY)	Amount (in \$1,000)	What percentage did the investor receive?	What is the liquidation preference? (1x? 1.5x? etc)	Participating Preferred	Regular Preferred	Do not Know
VC Round 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VC Round 2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VC Round 3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VC Round 4	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VC Round 5	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VC Round 6	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please list the number of multiple concurrent offers you had for each of the funding rounds listed above:

	1	2	3	4	5	6	7	8	9	10
VC Round 1	<input type="text"/>									
VC Round 2	<input type="text"/>									
VC Round 3	<input type="text"/>									
VC Round 4	<input type="text"/>									
VC Round 5	<input type="text"/>									
VC Round 6	<input type="text"/>									

We would like to request a copy of the final term sheet for any accelerator angel, or VC investments. This will help us to determine the exact nature and terms of your deal. If you are willing, please upload your copy below:

If you are willing, please also provide a copy of any term sheet for accelerator angel, or VC investments you declined to accept:

Did you have multiple concurrent offers (i.e. multiple active term sheets) for any of the VC funding rounds listed above?

Yes  
No

You selected Bridge Round, please answer:

	Click to write Column 1
Please Provide the Amount	<input type="text"/>
Was this a Priced Round?	<input type="text"/>
Was it funded by one of your existing investors?	<input type="text"/>

You selected Other, please describe:

You selected Other, please describe:

**Cap Table**

Has your company changed its equity distribution since you last filled out the survey on [\\${e://Field/LastContact}](#)?

are

<https://mitsloan.yul1.qualtrics.com/Q/EditSection/Blocks/Ajax/GetSurv...>

Are you still in the co-working space where you were enrolled in the study?

Yes  
No

What companies do you sit next to at the incubator/co-working space?  
(please list)

Are there other companies at the incubator/co-working space that you often obtain insights from or share insights with?  
(please list)

Are there any other companies that you share or obtain insights from that reside outside the incubator/co-working space?  
(please list)

#### Software

Do you use any management software or systems (e.g. salesforce, slack, quickbooks, etc.)?

Yes  
No

Please list what systems you use:

Do you use cloud computing or storage solutions such as AWS/Rackspace/Azure?

Yes  
No

Which cloud solutions do you use?

#### Entre Education Information

How often do team members work in the incubator/co-working space?

More than once per week  
Once per week  
A couple of times per month  
Once per month  
Less than once per month

How often do team members attend the incubator/co-working space's workshops, speaker sessions and office hours?

More than once per week  
Once per week  
A couple of times per month  
Once per month  
Less than once per month  
never

How frequently do members of your startup attend entrepreneurship networking events (total events attended across all members of your team)?

More than once per week  
Once per week  
A couple of times per month  
Once per month  
Less than once per month  
never

Since the last survey, has your team been through any formal entrepreneurship skills/training programs (e.g. accelerator, business school or university courses, online courses)?

Yes  
No

What kind of courses have you used?

	Click to write Column 1		Click to write Column 2
	Yes	No	Approximate Name of source and title of resource
Business school or university courses	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Accelerator Programs	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Online Courses	<input type="radio"/>	<input type="radio"/>	<input type="text"/>
Other (please list)	<input type="radio"/>	<input type="radio"/>	<input type="text"/>

#### FEAFE

In general, do you formally test new ideas before making a final decision on new approaches concerning products or policies within your company?

Yes  
No

Below we list various tools for decision making:

	Does your company use this tool?		If yes, please provide an example and please briefly describe your key outcome measures (e.g., purchase rates, product performance, click rates, etc.) and how long it takes
	Yes	No	
<b>Observation</b> <i>Observation is a research technique in which researchers watch how people or consumers behave and interact in the market under natural conditions</i>	<input type="radio"/>	<input type="radio"/>	
<b>Immersion</b> <i>Immersion is a research technique for developing shared context with the customer or user's pain points and typically involves shadowing or working alongside them</i>	<input type="radio"/>	<input type="radio"/>	
<b>Analytics</b> <i>Analytics are the application of statistical modeling to your company's data to measure performance and guide planning</i>	<input type="radio"/>	<input type="radio"/>	
<b>Focus Groups</b> <i>Focus groups are guided discussions that provide feedback from a deliberately assembled group of people</i>	<input type="radio"/>	<input type="radio"/>	
<b>Surveys</b> <i>Surveying is a data collection technique involving the use of questionnaires</i>	<input type="radio"/>	<input type="radio"/>	
<b>Expert Consultation</b> <i>Consultation is a methodology where increasing levels of expertise are brought to bear on an issue as it's being resolved</i>	<input type="radio"/>	<input type="radio"/>	
<b>Beta Testing</b> <i>Beta testing is a phase of development in which your product is subjected to real-world use by members of its intended audience</i>	<input type="radio"/>	<input type="radio"/>	
<b>Iterative Testing</b> <i>Iterative testing is a design methodology based on the cycle of refining then analyzing your product or process</i>	<input type="radio"/>	<input type="radio"/>	
<b>Conjoint Analysis</b> <i>Conjoint analysis is a survey-based technique that elicits preferences, values, ratings or rankings for product attributes and features</i>	<input type="radio"/>	<input type="radio"/>	
<b>Other forms of testing</b> <i>Please describe</i>	<input type="radio"/>	<input type="radio"/>	

Where do you use these tools? (select all that apply)

- Storefront
- Third party location
- Website or platform (yours)
- Website or platform (third party e.g. Facebook)
- Other

My business does not use these tools

In what areas of your business have you conducted tests? (select all that apply)

- Pricing/Finance
- Marketing/Advertising
- Product Design
- Human Resources/Employee Incentives
- Customer/User Behavior
- Product Demand
- Business Model
- Other

My business does not conduct tests

Now we're going to ask you about a particular type of testing called Randomized Controlled Trials (RCTs). It is also called randomized experimentation, A/B testing, or split testing.



Examples of randomized testing include medical drug trials, where among a group of participants, half are randomly selected to receive a drug and half are randomly selected to receive a placebo. Afterwards their health outcomes are compared. Examples in business include offering different prices to different customers, or showing ad A to some customers and ad B to others. The key factor in all of these examples is that whether a customer receives version "A" or version "B" is determined RANDOMLY, as in by the flip of a coin or toss of a die.

Did any of the tests you conducted in the last six months utilize randomization?

- Yes
- No
- My business did not conduct any tests

In what areas of your business have you conducted RANDOMIZED testing? (select all that apply)

- Pricing/Finance
- Marketing/Advertising
- Product Design
- Human Resources/Employee Incentives
- Customer/User Behavior
- Product Demand
- Business Model
- Other

Where have you conducted these RANDOMIZED tests? (select all that apply)

- Storefront
- Third party location
- Website or platform (yours)
- Website or platform (third party e.g. Facebook)
- Other

Please briefly describe the RANDOMIZED testing you have conducted in the last 6 months

Why did you choose to randomize?

Did your business change as a result of the experimentation?

- Yes
- No

You answered yes, please describe the change:

*(for example we raised prices or altered marketing strategy)*

You answered no, please describe why not:

*(for example the tests were uninformative or the policy we tested was not more successful than what we were already doing)*

Why not?

tware

<https://mitsloan.yul1.qualtrics.com/Q/EditSection/Blocks/Ajax/GetSurv...>

## **Appendix E: Curriculum Description**

The curriculum consisted of six individual sessions, taught over consecutive weeks, each lasting four hours long. The training modules consisted of:

1. Customer Discovery and Experimentation as a framework for approaching the entrepreneurial process by engaging with customers and validating business hypotheses. Lean startup, testing and experimentation.
2. Entrepreneurial Strategy (as per Gans et al. (2019)) as a framework for understanding of the core strategic challenges facing start-up innovators, and then choosing and implementing an entrepreneurial strategy in dynamic environments.
3. Financing the startup venture: financing options and considerations (bootstrapping, crowdfunding, angels, angel groups, angel syndicates, VC); matching business model to type of financing; contract structure, terms and pitfalls; staged capital commitment.
4. Financial modeling of the startup: building a bottoms-up financial model, modeling assumptions, using financial models for tracking and testing, cash flow management.
5. Founder dilemmas: managing teams and incentives (à la Wasserman (2013)).
6. Marketing Strategy: Entrepreneurial branding and marketing, SEO/SEM, positioning products, difference between marketing and sales.