FINDING THE LOUDEST MEGAPHONE: RECOGNITION REWARDS AND NARCISSISTIC INVESTORS

BY

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DISSERTATION

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ABSTRACT

The JOBS Act of 2012 established the regulatory infrastructure for crowdfunding platforms to offer securities to the public. The institutional framework of securities-based crowdfunding platforms adopts aspects of venture capital and rewards-based crowdfunding markets, with startups offering rewards in addition to equity. Using an experiment, I investigate whether a certain type of reward, which I call a recognition reward, tends to attract a narcissistic investor base, which, in turn, leads to an increase in a startup’s social media presence. I provide evidence that higher levels of narcissism are associated with a higher value being placed on recognition rewards. In addition, I find that narcissists are more likely to post about their investment on social media, and that this is especially true when rewards are offered. A simulation analysis suggests that offering recognition rewards increases the chances that a crowdfunding campaign will be funded and that its investors will post about it on social media. Since higher levels of narcissism are associated with a greater number of friends and followers on social media websites, the simulation also shows that more people are likely to be exposed to the crowdfunding campaign when recognition rewards are offered to investors. Social media exposure allows crowdfunding campaigns to gain attention via social media without violating the restrictions placed on general solicitation, and may also lead to increased advertisement of their products after a campaign is completed.
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CHAPTER 1:

INTRODUCTION

This paper investigates whether a crowdfunding campaign can increase its chances of success by offering recognition rewards, which are particularly attractive to more narcissistic investors. There are two means by which recognition rewards increase the chances of a successful crowdfunding campaign. First, they increase investment amounts as some investors, especially more narcissistic investors, value recognition. Second, they increase social media shares about the crowdfunding campaign, particularly among more narcissistic investors.

I define a recognition reward as any reward that provides investors with social praise or recognition, and has some degree of exclusivity. To date, crowdfunding startups have offered a variety of recognition rewards, including placing investors’ names and pictures in a founders’ hall of fame, offering an exclusive dinner with the startup’s executives, providing investors with a red-carpet experience, or giving investors a spot in the credits of a video game. Recognition rewards can be an attractive reward for startups to offer investors because they often require little to no cash outlay from the startup.

There are two main reasons for investigating whether recognition rewards are more attractive to narcissistic investors. One, prior crowdfunding research has explicitly called for research into how rewards influence investors’ investment decisions (Ahlers, Cumming, Günther, and Schweizer 2015). Furthermore, observational studies find that the offering of recognition rewards is correlated with a decrease in a rewards-based crowdfunding campaign’s success (Colombo, Franzoni, and Rossi-Lamastra 2014). Although it is unclear why recognition rewards decrease the success of rewards-based crowdfunding campaigns, it is possible that
contributors are motivated by the ability to appear generous when contributing to a crowdfunding campaign for which they receive no equity. If that is the case, then recognition rewards, which are self-serving, may crowd out motivations to appear generous (cf. Ariely et al. 2009). It is therefore interesting to know if experimental evidence will show that offering recognition rewards will increase investment amounts provided by potential investors in an equity-based crowdfunding setting, where generosity is unlikely to be a motivating factor in investors’ investment decisions. If so, recognition rewards offer a useful tool for startups to attract investors and lower their cost of capital when conducting a crowdfunding campaign.

Second, prior research indicates that higher narcissism is associated with increased activity on social media (Buffardi & Campbell, 2008) and that social media activity is crucial to the success of a crowdfunding campaign (Hui, Gerber, & Gergle, 2014; Mollick, 2013; Thies, Wessel, & Benlian, 2014). Therefore, recognition rewards may have a secondary benefit in increasing startups’ social media presence both during and after a crowdfunding campaign.

I use an experiment to test my theory for several reasons. The most significant reason is that there is no data available for the personalities of investors that have provided capital to real-world startups. While archival researchers have developed and validated several measures of CEO narcissism (e.g. prominence in annual reports, prominence in press releases, use of first-person singular pronouns, and compensation relative to other executives; see Chatterjee and Hambrick 2007), these measures do not have any obvious analog for investors. Furthermore, I was unable to find any publicly available databases of securities-based crowdfunding campaigns that offered rewards.

To test whether recognition rewards are more attractive to investors with higher narcissism, I use three experiments. The first experiment establishes that narcissism increases
the attractiveness of recognition rewards. The second experiment replicates the first and extends it by confirming that more narcissistic investors are more willing to post on social media about the crowdfunding campaign, especially when rewards are offered. The third experiment uses a within subject manipulation to confirm that investors interested in recognition rewards do not increase their investment amounts by only enough to meet the reward threshold that must be met or exceeded in order for an investor to receive the recognition reward, confirming the validity of the conclusions drawn from experiments one and two. The third experiment also confirms that more narcissistic investors place a higher value on recognition rewards.

The first experiment uses a 2x1 design that manipulates the reward threshold that must be met or exceeded in order for investors to receive the recognition reward. The recognition reward gives investors a spot in the startup’s founders’ hall of fame, which includes the names and pictures of all qualifying investors. In addition to manipulating the reward threshold, I also measure narcissism using the Narcissistic Personality Inventory (Raskin & Hall, 1981). I test my theory by using an ANOVA model (i.e. a 2x2 ANOVA with one measured and one manipulated variable) to show that narcissism increases investors’ willingness to increase their investment amounts in response to a higher threshold that must be met or exceeded in order to receive the recognition reward.

The second experiment replicates and extends the results of the first. The replication is under slightly different conditions. Firstly, it uses a 2x1 design that varies whether there is a reward or no reward, as opposed to having rewards offered in both conditions and manipulating the reward threshold. Secondly, it features a crowdfunding campaign that has yet to attract any investors. An ANOVA model with contrast coding confirms that narcissism increases investors’ willingness to increase their investment amounts solely to receive a recognition reward.
Furthermore, contrast coding confirms that narcissism increases investors’ willingness to post on social media about the crowdfunding campaign, especially when a campaign offers a recognition reward.

The third experiment replicates the results of the first two on a within subjects basis. The main purpose of the third experiment is to confirm that investors do not only increase their investment amounts so that they can meet the *reward threshold*. Instead, investors interested in the recognition reward will often increase their investment amounts so that they can *exceed* the reward threshold. This confirms the appropriateness of the data analyses that I use for the first two experiments. Furthermore, the third experiment provides a third replication of my main findings, but on a within subjects basis.

In addition to my main analyses, I also run simulations that suggest that offering a recognition reward can increase both the probability that a startup will be funded, and the startup’s presence on social networking sites. As a first-order effect, rewards increase the amount of investment into a startup for a fixed number of page views. In addition, rewards increase the expected number of Facebook and Twitter posts about the crowdfunding campaign. The latter leads to a second-order effect in which rewards drive more investment by directing additional investors to a crowdfunding campaign’s webpage. For the parameter values in my experiment and simulation, both effects are quite large. For instance, for 30 webpage views, the first-order effect alone increases the probability that a campaign will be funded by 277%. For between one and eight webpage views, the second order-effect leads to a 24% and 32% increase in expected Facebook and Twitter views, respectively.

My research yields both practical and theoretical insights. First, my research has implications for startups structuring a crowdfunding campaign. Offering recognition rewards not
only increases investment, but also attracts investors that are more active on social media platforms and have a larger number of friends and followers (Buffardi & Campbell, 2008). This latter effect contributes to the spread of information concerning a startup’s crowdfunding campaign. A caveat to the upside of offering recognition rewards is that narcissism is associated with several undesirable traits and behaviors (e.g. increased willingness to engage in unethical behavior) that could be important if the investor base has significant voting rights. Second, my research sheds light on some of the non-monetary factors that motivate investors’ decision making. I show that some investors derive utility from being associated with an investment because it can bring social praise or status (cf. Belleflame et al., 2014). This motivating factor likely extends to other forms of investment and may not require a company to explicitly offer recognition rewards. That is, some forms of investment may offer exclusivity or the possibility of recognition merely from owning a particular asset (e.g. for being an early or particularly keen investor).

I proceed as follows. In Chapter 2, I discuss the background of crowdfunding and its current regulatory status before outlining my theory and hypothesis. In Chapter 3, I discuss my first experiment. In Chapter 4, I discuss my second and third experiments. In Chapter 5, I discuss my simulation analyses. I conclude in Chapter 5.
Background

Equity-based crowdfunding has roots in rewards-based and donation-based crowdfunding. ArtistShare is credited as the first crowdfunding platform (see Freedman and Nutting 2014 for an excellent history of crowdfunding). ArtistShare launched in 2003 and its success led to several other rewards-based crowdfunding platforms, e.g. Kickstarter and Indiegogo. These new platforms opened crowdfunding up to a much larger group of entrepreneurs and investors. Kickstarter and Indiegogo campaigns offer backers (i.e. investors) a variety of rewards for providing capital, including products, services, and recognition rewards.

The success of rewards-based crowdfunding was due, in part, to its offering low transactions costs and the ability for campaigns to advertise. However, the very things that made crowdfunding attractive as a source of capital (e.g. the more relaxed disclosure requirements and ability to freely solicit investments) legally prohibited it from being used to offer debt or equity. Despite the growth of rewards-based crowdfunding, around 2008, entrepreneurs and venture capitalists were claiming that the United States faced an “IPO crisis” (e.g. Weild & Kim, 2008). After the year 2000, yearly IPOs dropped by almost 70% with small cap firms being disproportionately affected. Commentators provided several reasons for the drop, including the Sarbanes-Oxley Act (Gao, Ritter, & Zhu, 2013). In 2011, the SEC established an IPO task force to investigate how to increase IPOs, with heavy emphasis on the ability of emerging companies to create jobs (IPO Task Force 2011).
entrepreneurs, investors and politicians. Undoubtedly aided by a clever acronym, the JOBS Bill received bipartisan support and was signed into law by President Obama in 2012.

Part of the JOBS Act seeks to make crowdfunding more widely available. The Act institutes broad changes to the capital market structure for small cap firms. First, it lifts the longstanding ban on general solicitation implemented by the Securities Act of 1933. Second, it allows startup firms to use crowdfunding platforms to raise up to $1 million in capital per year from both accredited and non-accredited investors. Firms utilizing crowdfunding are required to disclose a business plan and GAAP financial statements (an audit is only required for firms raising greater than $500,000 in one year).

According to the Wall Street Journal, the Act has quickly increased IPOs in America (Case, 2014). Investment platforms such as AngelList, Bolstr, CircleUp, EquityNet, and MicroVentures have many active investors and a large variety of investment opportunities for accredited investors. Since the JOBS Act went into effect, over $393 million was raised using crowdfunding with $90 million occurring in the first quarter of 2014. Total growth in equity-based crowdfunding is expected to be 100% for 2014, and growth is expected to increase drastically once non-accredited investors are allowed access to crowdfunding investments (Caldbeck, 2014).

There are several features of crowdfunding that are important to my study. First, crowdfunding campaigns do not receive any funds unless the entire amount of capital that they request is successfully raised within a predetermined length of time. Second, an important mechanism by which crowdfunding campaigns receive attention is social media interaction. Taken together, these features of crowdfunding suggest that it is important for a campaign to attract investors that are interested in broadcasting both the crowdfunding campaign as well as
the product the campaigning startup seeks to offer. I investigate whether offering recognition
rewards attracts investors with a personality type that is known to be associated with a larger
social network (e.g. more Facebook friends) and increased activity on social media (Buffardi &
Campbell, 2008).

Theory and hypotheses

Raskin and Terry (1988) define the trait of narcissism as “self-admiration that is
categorized by tendencies towards grandiose ideas, fantasized talents, exhibitionism, and
defensiveness in response to criticism; interpersonal relationships are characterized by feelings
of entitlement, exploitativeness, and a lack of empathy”. Narcissism is believed to increase
sensitivity to social praise (e.g. Chatterjee, & Hambrick, 2011; Hales, Hobson, & Resutek,
2012), increase effort when an audience is observing one’s performance (Wallace & Baumeister,
2002), and lead to the need to receive confirmation of a grandiose self-image (Morf &
Rhodewalt, 2001).

It is also worth mentioning that narcissism is associated with several undesirable traits;
for example it is believed to increase overconfidence and decrease sensitivity to feedback when
predicting future performance (Campbell et al., 2004) and increase willingness to engage in
unethical behavior (Campbell et al., 2011; Judge et al. 2006; Hales et al., 2012). Prior research in
accounting suggests narcissism increases misreporting (Hales et al., 2012; Schrand & Zechman,
2012) and that auditors give higher fraud risk assessments when management’s narcissism is
relatively higher (Johnson et al., 2013).

Examining the questions on the Narcissistic Personality Inventory-40 (NPI-40) gives
insight into the personality of individuals with a high NPI score (see Appendix B, C or D). For
instance, one question asks whether subjects like to look at themselves in the mirror (Q29) and others ask whether they like to be the center of attention (Q30; Q7). These questions are meant to narcissism components of vanity and exhibitionism, respectively. Other questions ask about an individual’s desire for power (e.g. Q27) or their beliefs about their self-importance (e.g. Q9). Together, these questions are meant to capture the construct of narcissism as well as its components, which include authority, entitlement, exhibitionism, exploitativeness, self-sufficiency, superiority, and vanity.

An individual’s NPI score is thought to capture a stable personality trait that predicts his or her motivations and behaviors. Key in my setting is an individual’s motivation to enhance his or her self-image, or receive social praise and status. Being associated with a successful startup and having objective proof of early involvement (e.g. name and picture in the founders’ hall of fame; name in movie or video game credits) may give investors bragging rights that can enhance their self-image and social status. Since higher levels of narcissism are associated with an increased need to seek self-affirmation, it is likely that higher narcissism will translate into a higher value being placed on recognition rewards, which may fulfill the need for self-affirmation (Morf & Rhodewalt, 2001). In addition, prior research shows that CEO’s narcissism correlates with corporate social responsibility investment that brings attention and image reinforcement, but lower return on investment (Patrenko, Aime, Ridge and Hill 2015). Similarly, consumer behavior research suggests that narcissists engage in more conspicuous consumption (Cisek et al 2014). In particular, narcissists purchase “high-prestige products (i.e. luxurious, exclusive, flashy), show greater interest in the symbolic rather than utilitarian value of products, and distinguish themselves positively from others via their materialistic possessions” (Cisek et al 2014).
Therefore, the prospect of receiving a recognition reward may motivate investors to increase their investment amounts in order to exceed the threshold necessary for receiving the reward.ii

It is possible, however, that higher narcissism does not lead investors to increase their investment amounts in response to recognition rewards. Although being associated with a successful startup can bring an investor social praise and recognition, being associated with a startup that is not successful can lead to the opposite effect. Since narcissism increases a person’s interest in social recognition and praise, it is possible that higher narcissists do not want to risk having their name associated with a risky startup that can potentially damage their image by negatively distinguish them from others. However, it is likely possible for a narcissist to control the information associated with him or her through strategic management of his or her social media accounts.

As a whole, it is likely that higher narcissism will lead to an increased interest in recognition rewards which, in turn, will translate into higher investment amounts so that investors’ can qualify for a recognition reward. This leads to my first set of hypotheses (see Figure 1a and 2a for a graphical presentation):

**H1a:** Narcissism increases the value of a recognition reward, which will increase investors’ willingness to increase their investment amounts in response to a higher threshold that must be met or exceeded in order to receive the recognition reward.

**H1b:** Narcissism increases the value of a recognition reward, which will increase investors’ willingness to increase their investment amounts in response to a reward being offered.

In addition to increasing the value of a recognition reward, narcissism may also impact investors’ willingness to share information on social media about a crowdfunding campaign.
Prior research has shown that narcissism increases activity on social media, partly because of narcissists’ need to draw attention to themselves (Davenport et al. 2014). This need leads narcissists to have more Facebook friends and Twitter followers, and be more active users of social media (Bergman et al. 2011; Carpenter 2012; Ong et al. 2011; Davenport et al. 2014). Given a higher base-rate of participation in social media, one can expect narcissism to increase the likelihood that an investors will make a social media post related to their investment. In addition, narcissists will likely desire to broadcast on social media their receiving of a recognition reward. This behavior can serve as the means by which narcissists receive the recognition, social praise, and positive distinction that they seek by investing enough in a crowdfunding campaign in order to receive a recognition reward. Furthermore, narcissistic investors who do not receive a recognition reward may also want to share information about the opportunity for others to receive the social praise and recognition that they so desire, even when they themselves do not receive the recognition. This leads to my second hypothesis:

**H2:** Narcissism will increase the willingness of investors to post about a crowdfunding campaign on social media, especially when the campaign offers recognition rewards.

Collectively, my hypotheses suggest that offering recognition rewards can increase the probability of a crowdfunding campaign’s success through two mechanisms. First, recognition rewards increase investment amounts, particularly for more narcissistic investors. Second, recognition rewards increase the social media presence of a crowdfunding campaign because investors are more likely to post about their investment when recognition rewards are offered. Postings on social media made by investors with “skin in the game” have been shown to be especially important for a crowdfunding campaign’s success (Moritz and Block 2016). I therefore use simulation analysis to investigate how offering recognition rewards can increase
the social media presence of a crowdfunding campaign and how they increase the probability of a campaign’s success through higher investment amounts. The simulation analysis aims to quantify the magnitude of the first- and second-order effects of offering recognition rewards.

Interestingly, ArtistShare’s first crowdfunding campaign offered recognition rewards in the form of credits on an albums booklet, with one fan that made a $10,000 investment being listed as executive producer (Freedman & Nutting, 2014).

A priori, it is reasonable to hypothesize that certain reward thresholds can decrease investment amounts. This would occur when investors are willing to increase their investment amounts to exceed a fairly low reward threshold, but are not willing to do so when the reward threshold is very high. A careful examination of pilot data obtained for a related project allowed me to pick reward thresholds that made this pattern unlikely to occur. See my experimental design in Appendices B, C and D.
CHAPTER 3:

EXPERIMENT ONE

In this section, I present the design of and results from my first experiment, which is designed to test H1a.

Design and participants

My first experiment uses a 2x1 design that manipulates on a between-subjects basis the dollar threshold that must be exceeded for investors to qualify for the recognition reward. By increasing the threshold that must be exceeded for investors to qualify for the recognition reward, I can test my prediction that higher levels of narcissism are associated with a higher level of value from recognition rewards. Although it may seem simpler to manipulate the presence vs absence of the reward, I chose to instead manipulate the reward threshold because including rewards in both conditions allows me to obtain measures of participants’ perceptions of the reward and other mediating variables for both experimental conditions. This allows me to test for mediation and gain insight into the process behind investors’ decision making. However, I follow-up my first experiment with a second experiment that manipulates the presence versus absence of rewards to confirm the robustness of my results. It is also important to mention that I chose not to compare recognition rewards to other types of rewards as other types of rewards may be valuable to investors and it is difficult to predict \( a \text{ priori } \) how they will compare to recognition rewards. Furthermore, it is likely that recognition rewards will remain attractive to investors even if more than one type of reward is offered by the startup.

In addition to manipulating the reward threshold, I also measure subclinical narcissism using the Narcissistic Personality Inventory (NPI -40), which is the most commonly used method
for assessing subclinical levels of narcissism (Raskin & Terry 1988). The NPI-40 consists of forty forced-choice, binary response questions. To calculate a participant’s composite narcissism score, I count the number of questions for which the participant gives the more narcissistic response.

I used Amazon’s Mechanical Turk (MTurk) to recruit subjects. This subject pool is appropriate for two main reasons. First, the theory I want to test is that narcissism increases the value placed on recognition rewards, which increases investors’ willingness to increase their investment amounts in response to a higher threshold that must be met or exceeded in order to receive a recognition reward. Theory suggests this will occur regardless of investors’ sophistication level or the complexity of the investment decision; it is a basic motivation affecting investors’ decisions. Second, crowdfunding campaigns will target a broad audience. In fact, crowdfunding has been said to harness the “wisdom of crowds” and to “democratize access to capital” (e.g. see SEC 2013). This suggests that MTurk users may be more representative of crowdfunding investors than MBA students, which are often used as a proxy for nonprofessional investors (Elliott, Hodge, Kennedy, & Pronk 2007).

**Experimental procedures**

Participants were paid $1.50 to complete an approximately 30 minute experiment. The experimental materials were adapted from a real startup company that was successfully funded via the UK-based Crowdcube. Basing the materials on a real startup allows for the calibration of the instrument to parameter levels and combinations that are realistic and have ecological validity. Furthermore, using a successfully funded campaign decreases the probability of finding that a substantial number of participants are unwilling to invest in the startup, which could
prevent the experiment from detecting that narcissism increases the value placed on recognition rewards.

Before viewing information about the investment opportunity, participants completed a short training module on the risks associated with crowdfunding. The latest draft of the SEC’s proposed rules on crowdfunding mandates that crowdfunding portals require non-accredited investors to complete a similar training module, and the specific questions included in the instrument were based off of the training required by UK-based Crowdcube.

After completing the training module, participants learned more about the startup. Throughout the process, participants are asked comprehension check questions that must be answered correctly before they can proceed. To begin, participants are exposed to the main page of the startup’s crowdfunding website (see Appendix B). The main page communicates a variety of information, including the name of the startup (E-Sign), the current degree of investment activity (90 investors have invested $75K), and the target amount for funding set by the startup ($84K). The target amount for funding was determined by converting the UK-based E-Sign’s target investment amount into US dollars using the spot rate at the time that the experiment was designed. Participants were made aware that funding is “all-or-nothing”; that is, the campaign will not receive any money unless it meets its target investment amount.

After viewing the startup’s main crowdfunding campaign webpage, subjects are sequentially exposed to the campaign’s disclosures. The first disclosure is an approximately five minute video that describes the startup’s product, which is a secure and inexpensive electronic signature system. The video was modified to be shorter than the original so as to economize on participants’ time and avoid extraneous information.
After viewing the video, subjects read the campaign’s disclosure titled “The Idea”. In this section, subjects learn more about the product and what problem that it solves. They are also made aware that additional funding is needed for app development and the addition of new features. Next, subjects learn more about the market for digital signatures through the campaign’s disclosure titled “The Market”. This section outlines the market size as well as the major competition in the industry. After that, subjects learn about the management team of E-Sign, which is a highly skilled team with degrees from the top engineering schools in the world (e.g. MIT). The next disclosure, titled “The Exit”, outlines E-Sign’s plan and timeline for delivering a liquidating dividend to early investors. This disclosure also provides a forecasted return that investors would earn if E-sign successfully executes its exit strategy and is either bought out by a large company or publicly listed. The forecasted return is based off of the actual disclosure made by the real crowdfunding campaign executed by E-Sign.

Next, participants are told that they will have their name and picture placed in the startup’s founders’ hall of fame if their investment meets or exceeds either $3K or $6K, depending on the experimental condition to which participants were randomly assigned. I chose these threshold values based on pilot data for a related project. I picked the $3K threshold so that most investment amounts in my pilot data exceeded the threshold and the $6K threshold so that most investment amounts in my pilot data were less than the threshold. The latter choice was particularly important as my hypotheses could only be confirmed if the higher threshold exceeded what investors would otherwise be willing to invest.

After learning about the rewards that the campaign offers, investors are exposed to a listing of the fifteen most recent investors in E-Sign. Names for the investors were randomly generated using a web-based random name generator, while amounts were loosely based off of
E-Sign’s actual crowdfunding campaign. Finally, investors are exposed to E-Sign’s historical and forecasted financial statements. I based the financial statements off of what E-Sign’s actual crowdfunding campaign disclosed, converted at the spot-rate.

As stated early, to ensure that participants were paying attention to the materials, I required them to answer review questions. They were not allowed to advance through the instrument without correctly answering each review question, which insured that they paid attention to and understood the investment opportunity. One review question was about the rewards that the startup offered, and was included to give comfort that participants understood that the recognition reward was given only to investors with investment amounts exceeding the reward threshold.

Results and test of hypothesis

To test H1a, I use a two-way ANOVA model of Investment Amount with two categorical independent variables to capture both the reward threshold ($3K Threshold=-1 and $6K Threshold=1) and the subclinical narcissism level of participants (low-Narc=-1 and high-Narc=1). Participants are categorized as having low or high narcissism based on whether their NPI score exceeds the median in my sample (i.e. is greater than 12). I chose to use a two-way ANOVA with a median split to make the results easier to present and interpret.iv

Recall, H1a predicts a directional difference in slopes: above median NPI scores will have a steeper slope across the reward threshold conditions than will below median NPI scores. Importantly, it also predicts that the simple effect of the reward threshold will be positive and significant for the high-Narc participants. To test this prediction, I use a one-tailed test of the variance explained by the interaction between Narcissism and Reward Threshold. I also do a
follow-up analysis of the simple effect of Reward Threshold given high Narcissism. Descriptive statistics for participants’ investment amounts across my four conditions are tabulated in Panel A of Table 1, and are directionally consistent with H1a. For a graphical representation of the results, see Figure 1b. Panel B of Table 1 presents a formal test of H1a and indicates support for the hypothesis due to a significant interaction between Reward Threshold and Narcissism (p = 0.02, one-tailed). Panel C of Table 1 confirms a simple main effect of Reward Threshold given high Narcissism (p = 0.02, one-tailed).

For completeness, I also report the majority of the additional measures that participants provided in experiment one. Table 7 reports the means and standard deviations for the credibility of the startup’s disclosures, perceptions of the startup’s riskiness, and a variety of demographic measures.

Supplemental analyses

I perform two additional analyses to check the robustness of my results. First, untabulated results using a logit model show that narcissism increases the probability that investors will say that they increased their investment amount solely for the purpose of receiving a reward. In addition to asking subjects whether they increased their investment amount to get a reward, I also asked them how interested they were in the reward using an 11-point Likert-scale; I find that higher levels of narcissism are associated with a higher interest in the reward. Collectively, these results give provide comfort that more narcissistic investors place a higher value on recognition rewards.

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I did not use the educational backgrounds and work history that appeared in the actual E-Sign crowdfunding campaign as I did not expect US-based participants to be familiar with UK-based schools and employers. Results remain unchanged if the dichotomous measure is replaced with a continuous measure.
Visual inspection of the descriptive statistics suggests heteroskedasticity, and Levene’s test confirms by rejecting the null hypothesis of equal variances at the 5% level. In a series of untabulated analyses, I confirm all tests of my hypotheses are robust to allowing for heterogeneous error variance. I use a wild bootstrap with 1,000 samples and both percentile and bias-corrected accelerated confidence intervals. The results indicate all hypotheses are robust (i.e. 5% significance is always achieved) to better model specification, except the coefficient on the interaction between Vanity and Reward Threshold (which only reaches significance at the 10% level).
CHAPTER 4:

EXPERIMENTS TWO AND THREE

In this section, I present my second and third experiments. I first present experiment two, which is designed to test the robustness of the first experiment, and to extend it by investigating whether narcissistic investors are more willing to share information on social media about their investment in the crowdfunding campaign, particularly when they receive a recognition reward.

**Experiment two: design and participants**

My second experiment uses a 2x1 design that varies whether there is a *reward or no reward* (I set the reward threshold at $5K) on a between-subjects basis. I use the same recognition reward as I did in my first experiment (i.e. name and photo in the investors’ hall of fame). In addition to manipulating one variable, I measure narcissism using the NPI-40 (Raskin & Hall 1981). Finally, I used Amazon’s Mechanical Turk (MTurk) to recruit subjects. Subjects were paid $1.50 to complete an approximately 30 minute experiment administered via Qualtrics Survey Software. For experiment two, I made use of a pre-screening survey that prevents participants from completing more than one of my experiments within one year’s time. Specifically, participants entered their MTurk worker identification number (ID) into a survey that compared the ID to all previous participants’ IDs. If the participant was new, they were provided with a password that allowed them access to experiment two.

**Experiment two: instrument, procedures and dependent variables**

The instrument used in experiment two was based off of the instrument used for experiment one. There are four major differences between the two instruments. First, the second
experiment uses a crowdfunding campaign that has yet to receive any investment. This allows me to test the robustness of the first experiment. Second, I use a control condition in which no rewards are offered. Third, I increase the salience of rewards by presenting to participants the prospect of a reward immediately prior to their making an investment decision. Finally, I add measures related to social media to explicitly test whether or not investors with higher levels of narcissism are more likely to post on social media about investing in the crowdfunding campaign. The instrument for experiment two is provided in Appendix C.

Experiment two uses two different dependent variables. The first is a participant’s *investment amount*, which is the amount that they choose to invest in the startup’s crowdfunding campaign. The second is *social media posts*, which is the average of two measures. The first measure asks participants how likely they are to post about the crowdfunding campaign on Facebook, while the second asks how likely they are to post about the crowdfunding campaign on Twitter. Both are measured using 8-point Likert scales anchored on “extremely unlikely” and “extremely likely”.

**Experiment two: results**

I analyze my second experiment as a 2x2 ANOVA that uses one manipulated variable (*reward* versus *no reward*) and one measured variable (*high-Narc* versus *low-Narc*). Panel A of Table 2 provides the cell means and standard deviations for *investment amounts* by condition. The cell means are consistent with a *reward* increasing *investment amounts*, especially for *high-Narc* investors. Although I test my hypotheses using contrast coding, I also present for completeness a 2x2 ANOVA model in Panel B of Table 2.
Panel C of Table 2 presents the test of Hypothesis 1b. The contrasts weights used for my analysis are presented in Figure 2a. Panel C of Table 2 indicates that the variance accounted for by the contrast weights reaches statistical significance at the 0.05-level ($p$-value = 0.03; one-tailed). Furthermore, the residual variance (i.e. semi-omnibus test) is far from reaching statistical significance ($p$-value = 0.71; two-tailed), suggesting unqualified support for H1b.

Table 3 presents the test of Hypothesis 2, which focuses on participants’ likelihood of posting on social media about the crowdfunding campaign. Panel A of Table presents the cell means, which are consistent with a reward increasing participants likelihood of posting on social media, particularly for high-Narc investors.\textsuperscript{vi} I formally test my hypothesis using contrast coding, which can be found in Panel C of Table 3 (see Figure 3a for contrast weights). The contrast reaches statistical significance at the 0.05-level ($p$-value < 0.01; one-tailed), while the residual (i.e. semi-omnibus test) is far from statistical significance ($p$-value = 0.49; two-tailed). This lends unqualified support to H2.

For completeness, I also provide descriptive statistics for the additional measures gathered in experiment two. Table 8 summarizes measures such as the credibility of the startup’s disclosures and participants perceptions of the likelihood that the startup will successfully execute its exit strategy and the expected return if it does. Finally, the table provides some measures related to social media use.

**Experiment three**

I now present my third experiment, which was designed primarily to confirm the validity of the inferences I made in my first two experiments. In those experiments, I used an ANOVA model of investors’ investment amounts as opposed to a logistic regression model that models
whether or not investors’ investment amounts meet or exceed the threshold necessary for receiving the recognition reward. Yet a third way to analyze the data would be to investigate whether or not there is a discontinuity in investment amounts that appears at the reward threshold. My third experiment verifies that my chosen method of analysis is sensible. Specifically, I use a within subjects manipulation to verify that investors often increase their investment amounts in order to exceed the reward threshold that must be met or exceeded to receive a recognition reward.

**Experiment three: design and participants**

My third experiment uses a 2x1 design that varies whether there is a *reward or no reward* on a within-subjects basis. The reward threshold is set at $100 higher than what each participant says they would have invested in the absence of the reward. This design allows me to determine whether investors interested in the recognition reward will only increase their investment amounts by $100, or by some amount greater than $100. In addition to manipulating one variable, I also measure narcissism using the NPI-40 (Raskin & Hall 1981).

I use Amazon’s Mechanical Turk to recruit participants, who are paid $1.50 to complete an approximately 30 minute experiment. For experiment three, I made use of a pre-screening survey that prevents participants from completing more than one of my experiments within one year’s time. Specifically, participants entered their MTurk worker identification number into a survey that compared the ID to all previous participants’ IDs. If the participant was new, they were provided with a password that allowed them access to experiment three.
Instrument, procedures and dependent variables

I used an instrument very similar to that of experiments one and two. Like experiment one, the crowdfunding campaign used in the instrument had raised $75K of its $84K target. However, unlike the prior experiments, participants were not presented with information about the opportunity to receive a recognition reward until after they made an initial investment decision. After having made their initial investment decision, subjects are provided with additional information about the opportunity to receive a recognition reward. The instrument personalizes the reward threshold by adding $100 to each participant’s previously elicited investment amount. Participants were then asked to modify their decision about how much to invest, after they had learned about the opportunity to receive a recognition reward.

I measure and analyze two different dependent variables. First, I measure participants’ change in investment amounts in response to the presence of a recognition reward with a threshold that is $100 above subjects’ initial investment amount \((\text{change in Investment Amounts})\). Second, I measure the maximum increase in the investment amount that each participant is willing to make in order to qualify for a recognition reward. I refer to this second measure as the \(value of recognition\), as it captures the subjective value that participants place on the recognition reward.

Experiment three results

Table 9 provides descriptive statistics for the measures that participants provided during experiment three. In addition, Figure 4 in Appendix A provides the distribution of investment changes that result from the within-subjects manipulation of experiment three. Although there is a mode near $100, it is evident that some participants choose to increase their investment amount
by more than the minimum that is necessary to receive a recognition reward. In fact, only
approximately 58% of subjects who choose to increase their investment amount in order to
receive the recognition reward increase it by exactly $100. One possible psychological
explanation for why this occurs is that subjects may not want to be depicted in the recent investor
list as an investor who only barely met the threshold necessary for receiving the recognition
reward. One possible economic explanation for why this occurs is that introducing a recognition
rewards makes the optimal share of the investment something different than the threshold
necessary for investors to receive the recognition reward. In fact, this is likely to be the case as a
recognition reward effects the payoff structure of the investment in such a way that the impact of
risk aversion is dampened. Overall, the results of experiment three give some comfort that the
analyses used in experiment one and two were appropriate.

Panel B of Table 4 presents a 2x1 ANOVA model of value of recognition. The model
uses as the explanatory variable a median split of the NPI-40. The results indicate that higher
levels of narcissism are associated with higher levels of the value of recognition. vii This is
consistent with H1b, and serves as a third confirmation of my first hypothesis. Overall,
experiment three supports the results of experiments one and two.

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vi Results are directionally consistent if I use a continuous measure for narcissism, but are only marginally
significant.

vii Results are directionally and statistically the same if I use a continuous measure of narcissism. Also, a t-test that
does not assume equality of variances yields a statistically significant result at the 0.05-level.
CHAPTER 5:

SIMULATION ANALYSIS

In this section, I present the results of a simulation analysis aimed at quantifying how large of an effect offering a recognition reward has on both the probability of a campaign’s success and the number of social media shares that occur along the way to success (or failure). Throughout the analysis, I use data from experiment two, which includes measures of social media activity.

Description of simulation process

The simulation models the investment process by assuming that investors arrive at the crowdfunding campaign’s webpage sequential and make their investment decision in accordance with the empirical probability density function obtained from the experimental data (i.e. it is assumed that investment amounts are independent and identically distributed). I make the simplifying assumption that \( n \) investors visit a campaign’s webpage throughout the duration of the campaign, and investigate several measures for various \( n \).

The first measure used in my simulation is the probability that a crowdfunding campaign is successful; that is, the probability that the campaign is fully funded and the startup receives the funds that it has asked for. To determine if a campaign is successful, I compare the dollars raised by the campaign to the dollars that E-Sign’s actual crowdfunding campaign sought to raise, converted at the spot rate at the time the instrument was designed (i.e. \$84K). If a simulated campaign raises at least \$84K, it is deemed a success; otherwise, it is deemed a failure.

The second set of measures used in my simulation involve social media activity. For both the likelihood of sharing on Facebook and the likelihood of Tweeting, I convert the 8-point Likert
scale into a probability by dividing participants’ responses by seven. Importantly, I set equal to zero all values associated with participants who did not make an investment. I do so because prior research has shown that social media posts are only important when the poster has “skin in the game” (Moritz and Block 2016). I also analyze the number of Facebook friends and Twitter followers a post is likely to reach. To estimate this number, I first find the expected number of friends/followers from a regression analysis that uses narcissism, a dummy variable for gender, and a dummy variable for whether or not the participant owns a smartphone (see Table 5). I then multiply the number of expected friends and followers by the probability that a participant is willing to make a post on Facebook or Twitter, respectively. The resulting measure is an approximation of the expected number of Facebook friends or Twitter followers that are likely to view information related to the crowdfunding campaign.

Numerical results from the simulation analysis are depicted in Table 6, and a graphical depiction of the probability of a successful campaign for various numbers of page views is provided in Figure 5. For page views between one and eight, offering rewards is associated with an approximately 24% and 32% increase in Facebook and Twitter users who are potentially exposed to a social media post related to the crowdfunding campaign. This difference is driven by the increased willingness of investors to share information about the crowdfunding campaign when it offers a recognition reward.

Turning to the probability of a successful campaign, rewards are shown to have a very large first-order impact. For page views between 20 and 55, offering rewards leads to a substantial increase in the probability that a campaign will be successful. For instance, when a campaign receives 30 page views, it is approximately 277% more likely to be fully funded when it offers a recognition reward versus when it does not do so.
Overall, the simulation analysis suggests that offering recognition rewards leads to both first-order and second-order effects that greatly benefit a crowdfunding campaign. In terms of the former, investors substantially increase their investment amounts in order to qualify for a recognition reward. In terms of the latter, a meaningful increase in social media exposure is achieved when a crowdfunding campaign offers recognition rewards, which should drive an increase in the number of webpage views that a crowdfunding campaign receives.

\footnote{This assumption is likely incorrect, as the investment amounts from experiment one were higher than that of experiment two, likely because E-Sign had 90 investors for a total of $75K in experiment one, but no investors in experiment two.}

\footnote{In my data set, narcissism is a marginally significant predictor of the number of Facebook friends, but is not a statistically significant predictor of Twitter followers.}
CHAPTER 6:

CONCLUSION

In this study, I use an experiment to show that offering recognition rewards to investors for investing in a startup’s crowdfunding campaign can substantially increase investment amounts and social media activity driven by narcissistic investors. My theory and results suggest that narcissism increases the attractiveness of recognition rewards offered by a startup, and that narcissism increases the willingness of investors to share information related to the startup’s crowdfunding campaign, particularly when recognition rewards are offered.

My study offers practical and theoretical insights. First, recognition rewards motivate some investors to increase their investment amounts in order to receive the recognition reward. Thus, startups can increase their chance of having a successful crowdfunding campaign with minimal effort and little to no cash outlay. Second, given the importance of attracting attention via social media both during and after a crowdfunding campaign, startup founders may be interested in knowing that offering recognition rewards can change the personality characteristics of a startup’s investor base in a way that is likely to lead to more exposure via social media. A caveat to this conclusion is that narcissism is also associated with a variety of traits and behaviors that are undesirable, e.g. an increased willingness to engage in unethical behavior. Startups may want to carefully consider the whether it is optimal to provide investors with voting rights if they decide to attract a narcissistic investor base in order to increase their social media presence. Finally, my study provides insight into the non-monetary factors that motivate investors, namely social praise or recognition. Social praise, recognition, or status may result
even when a company does not explicitly offer recognition rewards, but otherwise provides excludivity or the possibility of recognition.

My study suggests several avenues for future research. First, it would be interesting to examine whether or not higher levels of narcissism lead to higher levels of sharing of information associated with a crowdfunded startup after its crowdfunding campaign concludes, especially when the narcissist is featured on the startups’ website (e.g. in its founders’ hall of fame, credits of the movie/CD/videogame being sold by the startup, etc). Second, since social media users appear to be able to identify higher levels of narcissism in other users (Buffardi & Campbell 2008), it is important to understand whether a narcissistic source of information about a startup affects how other social media users view that information. For example, it would be interesting to know whether narcissistic investors do a better or worse job at attracting potential investors and customers to a crowdfunded startup. Both of these questions could be addressed by using MTurk workers. For example, one could ask MTurk users whether they would share information about a crowdfunded startup after having made an investment. In addition, one could ask MTurk users to provide hypothetical social media posts that are subsequently evaluated by other MTurk users for credibility and interestingness.
This figure presents a graphical representation of H1. The key prediction is that high Narcissism participants will be more responsive to rewards, and therefore will increase their investment amounts by an amount larger than do low Narcissism investors when the reward threshold is increased from $3K to $6K.

This figure depicts the cells means for participants' investment amounts in Exp 1. This pattern is tested using the ANOVA model presented in Table 1.
This figure presents H1b along with the hypothesized contrast coding. The key prediction is that higher Narcissism investors will be more responsive to the presence of a reward (i.e. will have a line with a steeper slope).

This figure depicts the observed effects for Exp2 H1b, which are tested using contrast coding in Table 2.
This figure depicts the H2. The key prediction is that higher Narcissism investors will post more to social media, and that this will be especially true when a reward is offered.

This figure depicts the cell means (Exp 2) for the average of participants' likelihood of posting to Facebook or Twitter about the crowdfunding campaign. The pattern is tested using contrast coding in Table 3.
Figure 4 - Histogram of changes in Investment Amounts from Experiment 3

This figure presents a histogram of the change in investment amounts from a within-subjects manipulation of the presence versus absence of rewards. It indicates that investors interested in receiving the reward did not uniformly increase their investment amounts by the $100 necessary for receiving the reward.
This figure depicts the probability that a campaign will be successful given a fixed number of campaign page views. Probabilities are estimated by running 500,000 hypothetical campaigns in which investment amounts are i.i.d.
### TABLE 1
**Descriptive Statistics and Test of Hypothesis 1**

#### Panel A: Descriptive Statistics - Investment Amount mean [standard deviation]

<table>
<thead>
<tr>
<th>Condition</th>
<th>$3K$ Reward</th>
<th>$6K$ Reward</th>
<th>Row Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$3K$ Reward</td>
<td>$6K$ Reward</td>
<td>$\text{Means}$</td>
</tr>
<tr>
<td>Low Narcissism</td>
<td>$2,325.64$</td>
<td>$1,873.68$</td>
<td>$2,102.60$</td>
</tr>
<tr>
<td></td>
<td>[1,646.32]</td>
<td>[2,296.38]</td>
<td>[1,993.54]</td>
</tr>
<tr>
<td></td>
<td>$n = 39$</td>
<td>$n = 38$</td>
<td>$n = 77$</td>
</tr>
<tr>
<td>High Narcissism</td>
<td>$2,022.86$</td>
<td>$3,158.97$</td>
<td>$2,621.62$</td>
</tr>
<tr>
<td></td>
<td>[2,183.37]</td>
<td>[2,766.50]</td>
<td>[2,555.48]</td>
</tr>
<tr>
<td></td>
<td>$n = 35$</td>
<td>$n = 39$</td>
<td>$n = 74$</td>
</tr>
<tr>
<td>Column Means</td>
<td>$2,182.43$</td>
<td>$2,524.68$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[1,911.63]</td>
<td>[2,610.06]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$n = 74$</td>
<td>$n = 77$</td>
<td></td>
</tr>
</tbody>
</table>

#### Panel B: ANOVA Model of Investment Amount (using median split)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward Threshold</td>
<td>4408765.9</td>
<td>1</td>
<td>4408765.9</td>
<td>0.86</td>
<td>0.35</td>
</tr>
<tr>
<td>Narcissism (median split)</td>
<td>9092259.64</td>
<td>1</td>
<td>9092259.64</td>
<td>1.78</td>
<td>0.18</td>
</tr>
<tr>
<td>Reward Threshold*Narcissism (median split)</td>
<td>23754323.12</td>
<td>1</td>
<td>23754323.12</td>
<td>4.65</td>
<td><strong>0.02</strong></td>
</tr>
<tr>
<td>Error</td>
<td>751024116.4</td>
<td>147</td>
<td>5109007.595</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Panel C: Follow-up Tests of Simple Effects

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect of Narcissism given $3K$ Threshold</td>
<td>1</td>
<td>1691088.9</td>
<td>0.33</td>
<td>0.57</td>
</tr>
<tr>
<td>Effect of Narcissism given $6K$ Threshold</td>
<td>1</td>
<td>31795073.7</td>
<td>6.22</td>
<td>0.01</td>
</tr>
<tr>
<td>Effect of Reward Threshold given High Narcissism</td>
<td>1</td>
<td>23809332.15</td>
<td>4.66</td>
<td>0.03</td>
</tr>
<tr>
<td>Effect of Reward Threshold given Low Narcissism</td>
<td>1</td>
<td>3931437.33</td>
<td>0.77</td>
<td>0.38</td>
</tr>
</tbody>
</table>

P-values in **bold** are one-tailed.
### TABLE 2

*Descriptive Statistics and Test of Hypothesis 1*

#### Panel A: Descriptive Statistics - Investment Amount mean [standard deviation]

<table>
<thead>
<tr>
<th>Condition</th>
<th>$3K Reward</th>
<th>$6K Reward</th>
<th>Row</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Threshold</td>
<td>Threshold</td>
<td>Means</td>
</tr>
<tr>
<td>Low Narcissism</td>
<td>$2,352.50</td>
<td>$2,616.67</td>
<td>$2,487.80</td>
</tr>
<tr>
<td></td>
<td>[$2,572.74]</td>
<td>[$3,003.16]</td>
<td>[$2,787.42]</td>
</tr>
<tr>
<td></td>
<td>n =40</td>
<td>n =42</td>
<td>n =82</td>
</tr>
<tr>
<td>High Narcissism</td>
<td>$2,420.19</td>
<td>$3,465.93</td>
<td>$2,899.49</td>
</tr>
<tr>
<td></td>
<td>[$2,303.54]</td>
<td>[$3,237.47]</td>
<td>[$2,804.84]</td>
</tr>
<tr>
<td></td>
<td>n =52</td>
<td>n =44</td>
<td>n =96</td>
</tr>
<tr>
<td>Column Means</td>
<td>$2,390.76</td>
<td>$3,051.17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[$2,410.75]</td>
<td>[$3,136.07]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n =92</td>
<td>n =86</td>
<td></td>
</tr>
</tbody>
</table>

#### Panel B: ANOVA Model of Investment Amount (using median split)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rewards</td>
<td>18903825.15</td>
<td>1</td>
<td>18903825.15</td>
<td>2.44</td>
<td>0.12</td>
</tr>
<tr>
<td>Narcissism (median split)</td>
<td>9263341.76</td>
<td>1</td>
<td>9263341.76</td>
<td>1.19</td>
<td>0.28</td>
</tr>
<tr>
<td>Rewards*Narcissism (median split)</td>
<td>6729894.15</td>
<td>1</td>
<td>6729894.15</td>
<td>0.87</td>
<td>0.35</td>
</tr>
<tr>
<td>Error</td>
<td>1349231314</td>
<td>174</td>
<td>7754202.954</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Panel C: Contrast Coding

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrast</td>
<td>1</td>
<td>29694424.81</td>
<td>3.83</td>
<td><strong>0.03</strong></td>
</tr>
<tr>
<td>Residual</td>
<td>2</td>
<td>2632450.82</td>
<td>0.34</td>
<td>0.71</td>
</tr>
<tr>
<td>Error</td>
<td>174</td>
<td>7754202.954</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P-values in **bold** are one-tailed.
### TABLE 3

Descriptive Statistics and Test of Hypothesis 2

#### Panel A: Descriptive Statistics - Social Media Posts mean (standard deviation)

<table>
<thead>
<tr>
<th>Narcissism (median split)</th>
<th>Condition</th>
<th>$3K$ Reward Threshold</th>
<th>$6K$ Reward Threshold</th>
<th>Row Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Narcissism</td>
<td></td>
<td>0.93 [1.70]</td>
<td>0.84 [1.24]</td>
<td>0.89 [1.47]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n = 40</td>
<td>n = 42</td>
<td>n = 82</td>
</tr>
<tr>
<td>High Narcissism</td>
<td></td>
<td>1.46 [1.63]</td>
<td>2.10 [2.20]</td>
<td>1.75 [1.93]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n = 52</td>
<td>n = 44</td>
<td>n = 96</td>
</tr>
<tr>
<td>Column Means</td>
<td></td>
<td>1.23 [1.67]</td>
<td>1.49 [1.90]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>n = 92</td>
<td>n = 86</td>
<td></td>
</tr>
</tbody>
</table>

#### Panel B: ANOVA Model of Social Media Posts (using median split)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rewards</td>
<td>35.12765172</td>
<td>1</td>
<td>35.12765172</td>
<td>11.76</td>
<td>0.00</td>
</tr>
<tr>
<td>Narcissism (median split)</td>
<td>3.35270446</td>
<td>1</td>
<td>3.35270446</td>
<td>1.12</td>
<td>0.29</td>
</tr>
<tr>
<td>Rewards*Narcissism (median split)</td>
<td>5.92449663</td>
<td>1</td>
<td>5.92449663</td>
<td>1.98</td>
<td>0.16</td>
</tr>
<tr>
<td>Error</td>
<td>519.9233823</td>
<td>174</td>
<td>2.988065416</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Panel C: Contrast Coding

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>MS</th>
<th>F-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrast</td>
<td>1</td>
<td>40.07132364</td>
<td>13.41046</td>
<td><strong>0.00</strong></td>
</tr>
<tr>
<td>Residual</td>
<td>2</td>
<td>2.17</td>
<td>0.72514</td>
<td>0.49</td>
</tr>
<tr>
<td>Error</td>
<td>174</td>
<td>2.988065416</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P-values in **bold** are one-tailed. Social Media Share is the average of an 8-point Likert scale measuring the likelihood that participants would post to Facebook or Tweet about the crowdfunding campaign.
TABLE 4
Descriptive Statistics and Test of Hypothesis 1

Panel A: Descriptive Statistics - Value of Recognition mean [standard deviation]

<table>
<thead>
<tr>
<th>Narcissism (median split)</th>
<th>Low</th>
<th>High</th>
<th>Row</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Narcissism</td>
<td>$181.08</td>
<td>$1,021.62</td>
<td>$601.35</td>
</tr>
<tr>
<td>High Narcissism</td>
<td>[[$347.08]]</td>
<td>[[$1,839.25]]</td>
<td>[[$1,380.84]]</td>
</tr>
<tr>
<td>n = 37</td>
<td>n = 37</td>
<td>n = 74</td>
<td></td>
</tr>
</tbody>
</table>

Panel B: ANOVA Model of Value of Recognition (using median split)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narcissism (median split)</td>
<td>13070405.4</td>
<td>1</td>
<td>13070405</td>
<td>7.57</td>
<td>0.00</td>
</tr>
<tr>
<td>Error</td>
<td>126119460</td>
<td>73</td>
<td>1727663.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P-values in **bold** are one-tailed. Value of Recognition is the maximum amount by which participants are willing to increase their investment amounts in order to receive a recognition reward.
### TABLE 5
Regression models of Facebook friends and Twitter followers

#### Panel A: Descriptive Statistics - mean [standard deviation]

<table>
<thead>
<tr>
<th></th>
<th>Low Narcissism</th>
<th>High Narcissism</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$3K$ Reward</td>
<td>$6K$ Reward</td>
</tr>
<tr>
<td>Twitter Followers</td>
<td>$187.23$ [701.07]</td>
<td>$135.52$ [444.22]</td>
</tr>
</tbody>
</table>

#### Panel B: Regression Models

<table>
<thead>
<tr>
<th></th>
<th>DV = FB Friends</th>
<th>DV = TW Followers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parameter</td>
<td>t-stat</td>
</tr>
<tr>
<td>Intercept</td>
<td>$122.628$</td>
<td>$1.01$</td>
</tr>
<tr>
<td>Narcissism</td>
<td>$99.5377$</td>
<td>$2.84$</td>
</tr>
<tr>
<td>Gender</td>
<td>$-91.984$</td>
<td>$-1.31$</td>
</tr>
<tr>
<td>Smartphone</td>
<td>$190.068$</td>
<td>$1.56$</td>
</tr>
<tr>
<td>Adj R^2</td>
<td>$0.0442$</td>
<td></td>
</tr>
</tbody>
</table>

This table reports regression models of participants Facebook friends and Twitter followers. The expected number of friends and followers implied by the regression models are used in the simulation analysis depicted in Table 6.
TABLE 6
Simulation Results

Panel A: Relative frequency of successful funding out of 500,000 samples

<table>
<thead>
<tr>
<th>Number of Campaign Webpage Views</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Reward</td>
<td>0.06</td>
<td>0.31</td>
<td>0.67</td>
<td>0.89</td>
<td>0.98</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>$5K Reward Threshold</td>
<td>0.001</td>
<td>0.03</td>
<td>0.18</td>
<td>0.48</td>
<td>0.78</td>
<td>0.93</td>
<td>0.99</td>
<td>1.00</td>
</tr>
<tr>
<td>Quotient</td>
<td>44.63</td>
<td>10.85</td>
<td>3.77</td>
<td>1.87</td>
<td>1.26</td>
<td>1.07</td>
<td>1.01</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Panel B: Measures of social media activity

<table>
<thead>
<tr>
<th>Number of Campaign Webpage Views</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>E[Facebook Posts]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Reward</td>
<td>0.19</td>
<td>0.37</td>
<td>0.56</td>
<td>0.74</td>
<td>0.93</td>
<td>1.11</td>
<td>1.30</td>
<td>1.48</td>
</tr>
<tr>
<td>$5K Reward Threshold</td>
<td>0.23</td>
<td>0.45</td>
<td>0.68</td>
<td>0.91</td>
<td>1.14</td>
<td>1.36</td>
<td>1.59</td>
<td>1.82</td>
</tr>
<tr>
<td>Quotient</td>
<td>1.23</td>
<td>1.23</td>
<td>1.22</td>
<td>1.23</td>
<td>1.22</td>
<td>1.23</td>
<td>1.23</td>
<td>1.23</td>
</tr>
<tr>
<td>E[Tweets]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Reward</td>
<td>0.15</td>
<td>0.30</td>
<td>0.46</td>
<td>0.61</td>
<td>0.76</td>
<td>0.91</td>
<td>1.07</td>
<td>1.22</td>
</tr>
<tr>
<td>$5K Reward Threshold</td>
<td>0.20</td>
<td>0.39</td>
<td>0.59</td>
<td>0.79</td>
<td>0.99</td>
<td>1.18</td>
<td>1.38</td>
<td>1.58</td>
</tr>
<tr>
<td>Quotient</td>
<td>1.30</td>
<td>1.30</td>
<td>1.29</td>
<td>1.30</td>
<td>1.29</td>
<td>1.30</td>
<td>1.30</td>
<td>1.30</td>
</tr>
<tr>
<td>E[Facebook Views]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Reward</td>
<td>49.97</td>
<td>100.04</td>
<td>150.27</td>
<td>199.62</td>
<td>250.43</td>
<td>299.80</td>
<td>349.81</td>
<td>400.12</td>
</tr>
<tr>
<td>$5K Reward Threshold</td>
<td>61.90</td>
<td>123.75</td>
<td>185.17</td>
<td>247.23</td>
<td>308.94</td>
<td>370.65</td>
<td>432.58</td>
<td>494.63</td>
</tr>
<tr>
<td>Quotient</td>
<td>1.24</td>
<td>1.24</td>
<td>1.23</td>
<td>1.24</td>
<td>1.23</td>
<td>1.24</td>
<td>1.24</td>
<td>1.24</td>
</tr>
<tr>
<td>E[Twitter Views]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Reward</td>
<td>24.60</td>
<td>49.09</td>
<td>73.81</td>
<td>98.09</td>
<td>122.91</td>
<td>147.19</td>
<td>171.88</td>
<td>196.55</td>
</tr>
<tr>
<td>$5K Reward Threshold</td>
<td>32.36</td>
<td>64.74</td>
<td>96.92</td>
<td>129.41</td>
<td>161.66</td>
<td>193.91</td>
<td>226.46</td>
<td>258.93</td>
</tr>
<tr>
<td>Quotient</td>
<td>1.32</td>
<td>1.32</td>
<td>1.31</td>
<td>1.32</td>
<td>1.32</td>
<td>1.32</td>
<td>1.32</td>
<td>1.32</td>
</tr>
</tbody>
</table>

This table presents the results of 500,000 simulated crowdfunding campaigns.
TABLE 7
Descriptive Statistics for additional measured variables (Experiment 1)

Panel A: Means [standard deviation] by condition

<table>
<thead>
<tr>
<th></th>
<th>Low Narcissism</th>
<th></th>
<th>High Narcissism</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$3K Reward Threshold</td>
<td>$6K Reward Threshold</td>
<td>$3K Reward Threshold</td>
<td>$6K Reward Threshold</td>
</tr>
<tr>
<td>Return Given Successful Exit</td>
<td>6,944.20% [5,320.26%]</td>
<td>6,983.13% [5,752.08%]</td>
<td>6,526.13% [5,372.20%]</td>
<td>5,076.00% [3,769.32%]</td>
</tr>
<tr>
<td>Has Smartphone (binary)</td>
<td>0.60 [0.55]</td>
<td>0.63 [0.52]</td>
<td>1.00 [0.00]</td>
<td>0.80 [0.45]</td>
</tr>
<tr>
<td>Increased Invest. for Reward</td>
<td>-1.40 [2.61]</td>
<td>-3.00 [2.51]</td>
<td>-0.75 [3.58]</td>
<td>-0.60 [4.28]</td>
</tr>
<tr>
<td>Increased Invest. for Reward (binary)</td>
<td>0.20 [0.45]</td>
<td>0.00 [0.00]</td>
<td>0.13 [0.35]</td>
<td>0.20 [0.45]</td>
</tr>
<tr>
<td>Invested in Past (binary)</td>
<td>0.20 [0.45]</td>
<td>0.50 [0.53]</td>
<td>0.38 [0.52]</td>
<td>0.60 [0.55]</td>
</tr>
<tr>
<td>Current Investment (thousands)</td>
<td>$294.20 [646.17]</td>
<td>$27.50 [$43.18]</td>
<td>$1.71 [$2.27]</td>
<td>$3.20 [$3.11]</td>
</tr>
<tr>
<td>Plan to Invest in Future (binary)</td>
<td>0.60 [0.55]</td>
<td>0.63 [0.52]</td>
<td>0.88 [0.35]</td>
<td>0.80 [0.45]</td>
</tr>
<tr>
<td>Interested in Crowdfunding (binary)</td>
<td>0.40 [0.55]</td>
<td>0.38 [0.52]</td>
<td>0.50 [0.53]</td>
<td>0.40 [0.55]</td>
</tr>
<tr>
<td>Gender</td>
<td>0.00 [0.00]</td>
<td>0.75 [0.46]</td>
<td>0.50 [0.53]</td>
<td>0.40 [0.55]</td>
</tr>
</tbody>
</table>
TABLE 8

Descriptive Statistics for additional measured variables (Experiment 2)

Panel A: Means [standard deviation] by condition

<table>
<thead>
<tr>
<th></th>
<th>Low Narcissism</th>
<th>No Reward</th>
<th>$5K Reward Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credibility of Video</td>
<td>Low Narcissism</td>
<td>No Reward</td>
<td>$5K Reward Threshold</td>
</tr>
<tr>
<td>Investment Attractiveness</td>
<td>5.60 [2.80]</td>
<td>5.75 [3.01]</td>
<td>5.97 [2.50]</td>
</tr>
<tr>
<td>Return Given Successful Exit</td>
<td>6,581.50% [5,080.66%]</td>
<td>6,576.45% [5,113.40%]</td>
<td>7,318.98% [5,147.38%]</td>
</tr>
<tr>
<td>Uncertainty of Return</td>
<td>5.30 [2.68]</td>
<td>5.69 [2.82]</td>
<td>5.27 [2.34]</td>
</tr>
<tr>
<td>User of Facebook (binary)</td>
<td>0.80 [0.41]</td>
<td>0.88 [0.33]</td>
<td>0.90 [0.30]</td>
</tr>
<tr>
<td>User of Twitter (binary)</td>
<td>0.43 [0.50]</td>
<td>0.57 [0.50]</td>
<td>0.60 [0.50]</td>
</tr>
<tr>
<td>Twitter Followers</td>
<td>187.23 [701.07]</td>
<td>135.52 [444.22]</td>
<td>251.48 [658.42]</td>
</tr>
<tr>
<td>Has Smartphone (binary)</td>
<td>0.90 [1.88]</td>
<td>0.90 [1.64]</td>
<td>0.92 [2.33]</td>
</tr>
<tr>
<td>Invested in Past (binary)</td>
<td>0.38 [0.49]</td>
<td>0.40 [0.50]</td>
<td>0.35 [0.48]</td>
</tr>
<tr>
<td>Current Investment (thousands)</td>
<td>42.64 [$137.91]</td>
<td>8.82 [$19.36]</td>
<td>19.15 [$41.20]</td>
</tr>
<tr>
<td>Plan to Invest in Future (binary)</td>
<td>0.55 [0.50]</td>
<td>0.60 [0.50]</td>
<td>0.69 [0.47]</td>
</tr>
<tr>
<td>Interested in Crowdfunding (binary)</td>
<td>0.40 [0.50]</td>
<td>0.33 [0.48]</td>
<td>0.52 [0.50]</td>
</tr>
<tr>
<td>Gender</td>
<td>0.38 [0.49]</td>
<td>0.38 [0.49]</td>
<td>0.65 [0.48]</td>
</tr>
</tbody>
</table>
### TABLE 9
Descriptive Statistics for additional measured variables (Experiment 3)

**Panel A: Means [standard deviation] by condition**

<table>
<thead>
<tr>
<th></th>
<th>Low Narcissism</th>
<th></th>
<th>High Narcissism</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Reward</td>
<td>Post-Reward</td>
<td>Pre-Reward</td>
<td>Post-Reward</td>
</tr>
<tr>
<td>Credibility of Video</td>
<td>7.70 [1.83]</td>
<td></td>
<td>7.76 [1.76]</td>
<td></td>
</tr>
<tr>
<td>Credibility of Idea</td>
<td>8.11 [1.74]</td>
<td></td>
<td>7.76 [1.87]</td>
<td></td>
</tr>
<tr>
<td>Credibility of Market</td>
<td>8.00 [1.90]</td>
<td></td>
<td>7.53 [1.93]</td>
<td></td>
</tr>
<tr>
<td>Credibility of Company Background</td>
<td>8.62 [1.74]</td>
<td></td>
<td>7.84 [1.94]</td>
<td></td>
</tr>
<tr>
<td>Overall Credibility of Disclosures</td>
<td>7.32 [2.20]</td>
<td></td>
<td>7.21 [2.26]</td>
<td></td>
</tr>
<tr>
<td>Probability Firm Exits as Planned</td>
<td>35.62 [29.83]</td>
<td></td>
<td>51.74 [26.77]</td>
<td></td>
</tr>
<tr>
<td>Return Given Successful Exit</td>
<td>7,805.14 [4,727.05]</td>
<td></td>
<td>7,680.53 [4,668.90]</td>
<td></td>
</tr>
<tr>
<td>Uncertainty of Return</td>
<td>5.81 [2.45]</td>
<td></td>
<td>5.13 [2.13]</td>
<td></td>
</tr>
<tr>
<td>Has Smartphone (binary)</td>
<td>0.95 [0.23]</td>
<td></td>
<td>0.97 [0.16]</td>
<td></td>
</tr>
<tr>
<td>Increased Invest. for Reward</td>
<td>-2.43 [2.67]</td>
<td></td>
<td>0.08 [3.11]</td>
<td></td>
</tr>
<tr>
<td>Increased Invest. for Reward (binary)</td>
<td>0.38 [0.49]</td>
<td></td>
<td>0.55 [0.50]</td>
<td></td>
</tr>
<tr>
<td>Invested in Past (binary)</td>
<td>0.46 [0.51]</td>
<td></td>
<td>0.45 [0.50]</td>
<td></td>
</tr>
<tr>
<td>Current Investment (thousands)</td>
<td>$26.79 [89.77]</td>
<td></td>
<td>$12.52 [37.70]</td>
<td></td>
</tr>
<tr>
<td>Plan to Invest in Future (binary)</td>
<td>0.65 [0.48]</td>
<td></td>
<td>0.71 [0.46]</td>
<td></td>
</tr>
<tr>
<td>Interested in Crowdfunding (binary)</td>
<td>0.38 [0.49]</td>
<td></td>
<td>0.37 [0.49]</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>0.49 [0.51]</td>
<td></td>
<td>0.63 [0.49]</td>
<td></td>
</tr>
<tr>
<td>Narcissism</td>
<td>4.70 [2.60]</td>
<td></td>
<td>19.76 [5.63]</td>
<td></td>
</tr>
</tbody>
</table>
REFERENCES


GENERAL INSTRUCTIONS

Thank you for participating in this study. The purpose of the study is to examine how individuals make investment judgments and decisions. Your participation today will take approximately 30 minutes. You will receive payment for completing this study. The information included in the case is not intended to be completely representative of what would normally be available when you evaluate a company. Providing you with that level of detail would require more time to complete the case than could realistically be expected. Please make the best judgments you can based on the information provided in these materials.

INHERITANCE

Imagine you have a cash balance of $10,000 in your savings account that you would like to invest. We will present you with a hypothetical investment opportunity that you can use any of your $10,000 to invest in. The law currently does not require you to pay taxes on your $10,000 inheritance. For purposes of this case study, which of the following are true statements? Please check ALL that apply:

- I have $10,000 worth of savings that I may invest.
- I can choose to invest any amount of the $10,000 in an investment opportunity.
- My inheritance is not subject to tax under current tax laws.

The JOBS Act of 2013 allows for a new type of investing called crowdfunding.

A company that wishes to raise money via crowdfunding must create a webpage with a crowdfunding portal. The webpage must include a basic description of the business (i.e. business plan), historical financial statements prepared in accordance with GAAP, and a variety of
additional disclosures. The startup can ask for any amount of money up to $1,000,000, but they must raise the entire asking amount in order to receive any money.

The typical crowdfunding investment is a company that is in a very early stage of development, and often has yet to earn any revenue. Being pre-revenue does not mean that a company is unsuccessful, but the probability of success is very low for startups.

1) Companies looking to raise money via crowdfunding are usually startup companies that may have yet to earn revenue.
   - True
   - False

2) If a startup fails to raise all the capital it asks for, then it receives:
   - All the capital it seeks to raise.
   - Some of the capita it seeks to raise.
   - None of the capital it seeks to raise.
**Startups are companies that are in an early stage of development.**

For a startup to develop into a business, it must raise capital from investors to fund its product development, inventory, and/or operations. Often times startups are created by students or young entrepreneurs who do not have the capital necessary to start a business.

Since startups are in an early stage of development, they make for a risky investment. Investing early before a company grows very large can offer a substantial return; however, more often than not a startup fails to be profitable and simply goes out of business.

A startup needs money to start becoming a full-fledged business. Since startups are focused on growing their business, it is very rare that they pay dividends to their investors - they need all the cash they can get! So investors should not expect to make a return from dividends. Rather, investors that invest in a startup hope to earn a return through an exit by the startup.

An exit, also known as a liquidation, occurs when the startup sells its ownership to new owners. There are several ways this can occur, but the two most profitable scenarios involve either 1) an IPO or 2) a merger or acquisition. When an IPO occurs, the startup becomes a publicly owned and traded company. Early investors are therefore able to sell their ownership on a public stock exchange (e.g. NYSE), and often for a substantial return. When a merger or acquisition occurs, a different company sees value in the startup's business plan, product design, and/or customer base. The acquiring company, in turn, offers the owners of the startup cash or shares (in the acquiring company) in return for the owners' shares (in the startup). An acquisition or merge can also offer a substantial return to investors.

Given the importance of a startups' exit, it is very common for a startup to disclose its "exit strategy". That is, when seeking money from investors, startups often discuss how they plan to bring investors a return. A startup will give both a strategy and a timeline for when it expects to exit, and therefore when investors will experience a return on their investment.

In some cases, an investor can sell his or her shares before a startup executes its exit strategy. However, doing so can be quite difficult because a liquid market for a startup's shares is unlikely to exist.
3) An investor will experience a financial return from investing in a startup when a startup executes its exit strategy.

- True
- False

4) An investor can easily sell its shares in a startup at any time.

- True
- False

You will soon be presented with a crowdfunding opportunity. However, before you can invest, you must complete the training required by the crowdfunding portal (Crowdfunder USA). This training is required by law, and ensures that investors understand the risk they face when investing in startups. Click the arrow to begin the training.

Become an Investor on Crowdfunder USA

Before investing on Crowdfunder USA, you must complete a short training to make sure you understand the risk you face when investing in a startup.

PAST EXITS ON CROWDFUNDER

Startups are a risky investment. Most fail, but the small percentage that succeed can bring a significant return. In the past, startups on Crowdfunder USA successfully execute their exit strategy only 5% of the time. Exits typically occur in 4-7 years from when their funding campaign closes. When an exit strategy fails, investors' entire investment is almost always lost.

LIQUIDITY OF INVESTMENT PRIOR TO EXIT

Usually, there is no active market for the shares you purchase on Crowdfunder USA. For this reason, it can be very difficult for an early investor to sell his/her shares prior to a startup making
an exit. Often times no market develops for a startup's shares, and when a market does exist it often has few, if any, buyers.

5) Based on past data, the probability that a firm listed on Crowdfunder brings investors a return, that is the probability it successfully executes its exit strategy, is approximately:
   ○ 5%
   ○ 10%
   ○ 50%

6) If I invest in a startup on Crowdfunder USA, and the startup fails:
   ○ No one will be liable to pay me back the amount I invested, and my investment will be lost
   ○ The entrepreneurs who founded the startup will be personally liable to pay me back the amount I invested
   ○ Crowdfunder USA will be liable to pay me back the amount I invested

7) If I invest in the equity of a startup, and I decide I want my money back:
   ○ I will be able to surrender my shares to the company, and it will give me my money back
   ○ I will be able to sell my shares on a stock exchange at any time
   ○ I probably will not be able to sell my shares unless the startup is bought by another company or has an IPO

8) Startups generally:
   ○ Do not pay dividends to investors
   ○ Begin paying dividends immediately
   ○ Pay dividends in about one year

9) If I invest in the equity of a startup, the startup succeeds, and I want to cash in on the success:
   ○ I will definitely be able to find someone to buy my shares in the startup at any point.
   ○ Unless the startup is bought by another company or has an IPO, it may be difficult to find someone to buy my shares
   ○ The startup will always be required to buy back my shares
10) What does E-Sign do?
- It offers advanced electronic signatures that allow a person to sign a document via computer
- It offers customized, "signature" products such as pens and sunglasses

11) How much money is E-Sign trying to raise?
- $20,000
- $30,000
- $84,000
12) How much money has E-Sign already raised?
☐ $0
☐ $75,000
☐ $100,000

13) How many investors have already invested in E-Sign?
☐ 0
☐ 40
☐ 90
☐ 140

The screen shot on the previous page indicated several disclosures made by E-Sign. To help investors understand its vision, business plan, and market, E-Sign has prepared text and video disclosures. In the next section, you will be able to view the information that E-Sign has disclosed to help you make your investment decision.

Please pay close attention, as this information is crucial for making your investment decision.
14) E-Sign uses QR technology that provides a unique QR code that can be scanned to access information embedded in an electronic signature.
○ True
○ False

15) How credible do you find E-Sign's video?
The Idea

"Signatures are a thing of the past"

It is the Vision of E-Sign to improve growth and business efficiency, by changing the way businesses conclude transactions by removing the archaic process of hand signing, and replace this with a more secure advanced electronic signature.

The problems E-Sign solves

There are a number of problems and costs associated with hand written signatures, which E-Sign aims to solve. First, it significantly lowers the cost of signatures by eliminating paper and the need to send documents via mail. Storage costs for electronic signatures are also much cheaper than storage costs for paper signatures. Second, it reduces fraud through its simple, secure 'advanced electronic signature' service.

What E-Sign offers

E-Sign offers easy signature verification, advanced fraud protection, elimination of postal costs and a reduction in storage costs.

What we have achieved to date.

E-sign took over two years to develop, and went live late 2013. Since then, the company is generating interest, and is endeavouring to establish a considerable client base, from individual
users, SME's as well as several larger corporations such as Hugo Boss who are currently trialling our product. E-Sign can be accessed anywhere in the world.

Through the launch of our API platform, we have now created a scalable product which can be implemented and easily adapted to fit any companies needs.

E-Sign has recently achieved ISO27001 certification

The need for additional funding

Funding is needed to launch a successful marketing campaign, as well as development of exciting new features, such as IOS app development, and features that we wish to develop further after listening to customer feedback. We aim to have E-Sign accessible to everyone on any platform.

16) The cost of providing and storing an electronic signature through E-Sign is cheaper than that of a paper-and-pen signature.
   ☐ True
   ☐ False

17) E-Sign's 'digital ID' makes its 'advanced electronic signatures' very secure because signatures cannot be copied and storage is encrypted.
   ☐ True
   ☐ False

18) How credible do you find E-Sign's disclosure about its business idea?
The Market

Digital signatures on the rise worldwide

Cutting operational costs, moving to greener methods and even regulatory compliance are all factors driving the move away from keeping paper records and other documents, and towards secure electronic equivalents. A leading part of more “secure” electronic equivalents is the digital signature. The world is now adopting digital signatures as more organizations move from paper shuffling to more efficient online processes. When talking about “signing” an electronic document, for example, a PDF, it’s important to note that a digital signature is far more than an electronic representation of your authorization. In fact, a digital signature is a mathematical
scheme for demonstrating the authenticity of a digital document. Digital signatures can assure that information has not been altered, as well as verify the signer’s digital identity.

**The market size**

E-Sign has clients and users from a very diverse market, which are highlighted below:

- Banks and other loan and finance institutions
- Law firms (both small and global)
- Chartered accountants, (again both small and global)
- Insurance
- Estate agents
- Tax and revenue bodies
- Human resource
- Pensions and life assurance
- Life sciences
- Retail & fashion
- Digital media
- Advertising and PR

**Current legal structure**

As of 2014, all 50 states and Puerto Rico consider electronic signatures to be legally binding.

In 2010, US Congress passed the ESIGN Act which made electronic signatures legally binding for all interstate and international commerce. Furthermore, congress shortly after passed the Uniform Electronic Transactions (UET) Act which was subsequently adopted in 47 states and
Puerto Rico. The three states that have not adopted the UET Act nevertheless consider electronic signatures to be legally binding.

**Market competitors**

There have been many electronic service providers that have entered the market place during the last 18 months. However, our research suggests that none of them offer an ‘advanced electronic signature’ like that of e-sign.

The two main competitors of e-sign are Docusign and echosign by Adobe. Both these companies offer the same type of electronic signature service, where a user simply uploads a document onto their service, then sign by typing their name onto the document. This is then transformed into a computer simulated hand signature. Other methods include where a user scribes their signature onto the uploaded document by using a mouse.

We feel the problems with these methods are as follows:

- Holds less validity than a hand signature
- No way to verify the signatory
- No audit trial
- Easily forged
- Not an advanced electronic signature
- Replication of a hand signature and not a true electronic signature

Despite this, one of e-signs closest competitors (docusign) boasted an increase of nearly 40 million users over the last 18 months.

E-Sign addresses issues in the marketplace for where signatures matter. And offers a full audit trial from start to finish, giving the document author notifications each step of the way.

19) Electronic signatures are considered legally binding in all 50 states.

- True
- False
20) E-sign's electronic signature is superior to its competitors because (check all that apply):

- E-Sign's 'advanced electronic signature' is not easily forged and also easy to verify.
- E-Sign's signature provides an audit trail.
- E-Sign's signature is not simply an "electronically simulated hand signature" like its competitors.

21) How credible do you find E-Sign's disclosure about the market?

The People

Winston Stone - Company founder and CEO

Studied computer science (MIT), and business (MBA at Wharton). Experience in product development (Google).

Seth Knight - Operations director

Experience in operations in pharmaceutical industry, as well as forensic testing and life sciences

Tina White – Lead software developer  Studied computer science (MIT).

22) E-Sign's founder and CEO, Winston Stone, has the following qualifications:

- Computer Science degree from Massachusetts Institute of Technology (MIT)
- Business degree from University of Nebraska.
- Masters in Business Administration (MBA) from Wharton (University of Pennsylvania's business school).
- Worked in product development at Google.

23) E-Sign's lead software developer has the following qualifications:

- Computer Science degree from Massachusetts Institute of Technology (MIT)
- Worked at Google as Director and Front-end Web Developer.
- Knows how to program using HTML, CSS, Javascript.

24) How credible do you find E-Sign's disclosure about its executives and their backgrounds?

The Exit

E-Sign seeks to deliver a ready market for its shares by the end of 2019 (approximately 5 years). We envisage achieving this through a trade sale to a quoted company (adobe etc), or through flotation (IPO).

If we achieve our forecasted results, we estimate E-Sign to have a market valuation of approximately $13.6m ($13,600K), based on Growing API sales, and larger companies acting as re-sellers.

This estimation is in line with what financial analysts have estimated companies operating within the remit of electronic signature service provider, hold as a value at this particular timeframe when considering market exit strategies.

Given E-Sign's high potential for growth, we believe that this is a conservative valuation. However, it is important to mention that startups seeking funding on Crowdfunder
USA often fail. Based on past data, companies only manage to successfully execute their business strategy and exit strategy 5% of the time.

25) Recall, E-Sign is offering 10.00% of its company for $84K. It projects a market valuation upon exit of $13,600K. This means that, if E-Sign successfully executes its business plan and exit strategy, investors can expect a return of:

- 1.519\% = 100\% \times (\$13,600K \times 10\% - \$84K)/\$(84K)
- 0.62\% = 100\% \times \$84K / \$13600K

26) Based on past data, a good estimate of the probability that E-Sign will be able to successfully execute its business strategy and exit strategy is approximately:

- 5\%
- 30\%
- 50\%

27) If you invest in E-Sign and it successfully executes its business plan and exit strategy, you will experience a return in approximately _____ years.

- 3
- 4
- 5
- 6
- 7
- 8

28) How credible do you find E-Sign's disclosure about its exit strategy?

![Credibility Scale]

**Rewards**

- Invest $100 and get
  - Shares in E-Sign and E-Sign "Early Investor" T-Shirt
- Invest $[Reward Thershold] and get
- Shares in E-Sign and name and photo on E-Sign's 'founders hall of fame' section of the website

29) If I invest $[Reward Threshold] or more in E-Sign, I receive:

- Equity in E-Sign
- Equity in E-Sign, a T-shirt, and my name and photo on E-Sign's 'founders' hall of fame' section of its website
- A subscription to E-Sign's service
30) Who made the most recent investment in E-Sign?

- Celia Bailey
- Neil Douglas
- Tomas Grant
31) How much money did Mario Aguilar invest in E-Sign?

- $1,000
- $500
- $50

You can find historical financial statements and a 3 year financial forecast below.

32) As of January 2014, E-Sign has yet to earn revenue.

- True
- False
33) Based on E-Sign's current customer base and best financial projections, its forecast indicates its first profits will be earned in:

- [ ] February 2014
- [ ] March 2014
- [ ] April 2014
- [ ] May 2014
- [ ] June 2015

34) How credible do you find E-Sign's forecasted financial statements?

On the next page, you will answer some questions. You might want to refer to information that you read earlier, which you can see by clicking on the squares displayed below. The next page will have a back arrow that will allow you to come back to this page.

If at any time you would like to review E-Sign's disclosures, click the back arrow at the bottom of the page!

35) Overall, how credible do you find E-Sign's disclosures?
36) How attractive do you find E-Sign as an investment?

37) How much of your $10,000 inheritance would you invest in E-Sign?
*Note: E-Sign is only offering $9,000 in equity so you are unable to invest your entire inheritance.

38) As an investment, how risky do you believe E-Sign to be?

39) What do you think the probability is of E-Sign successfully executing its exit strategy?

40) If E-Sign successfully executes its business strategy, what percentage return do you expect it to deliver to investors that invested in its Crowdfunder USA investment round?
41) If E-Sign successfully executes its business strategy, it is uncertain how large a return they will deliver. Assume E-Sign exits. How uncertain is the return they deliver?

![Uncertainty Scale]

42) Overall, how interesting did you find this study?
Extremely Boring 0…1…2…3…4…5…6…7…8…9…10 Extremely Interesting.

![Study's Interestingness Scale]

43) Do you own a smartphone?
- Yes
- No

44) To what extent do you agree with the following: E-Sign's rewards played a crucial part in my decision to invest.

![Agreement Scale]

45) Did you increase your investment just so that you could get one of the rewards offered by E-Sign?
- Yes
- No
46) An image of a QR Code appears below. Are you familiar with QR Codes?

☑ Yes - I've seen a QR code before, but I do not know what they are for.
☑ Yes - I've seen a QR code before, but I have never used one.
☑ Yes - I've used a QR code before.
☑ No

47) Have you invested in a company, public or private, in the past?

☑ Yes
☑ No

48) How much money do you currently have invested in equity, public or private?

49) Do you plan to invest in public or private companies in the future?

☑ Yes
☑ No

50) Would you be interested in investing in startups via a crowdfunding platform?

☑ Yes
☑ No

51) Let us know what you think about investing in startups via a crowdfunding platform:

______________________________________________________________________
______________________________________________________________________

52) Approximately how many of the following courses have you taken at the University level (If you are currently a student please include both courses completed and courses in progress.)?

   Introductory accounting _____
   Financial accounting _____
   Managerial accounting _____
   Auditing/assurance _____
   Finance _____
53) What is your gender?
- Male
- Female
This inventory consists of a number of pairs of statements with which you may or may not identify.

Consider this example:

<table>
<thead>
<tr>
<th>I like having authority over people</th>
<th>I don't mind following orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have a natural talent for influencing people.</td>
<td>I am not good at influencing people.</td>
</tr>
<tr>
<td>Modesty doesn't become me.</td>
<td>I am essentially a modest person.</td>
</tr>
<tr>
<td>I would do almost anything on a dare.</td>
<td>I tend to be a fairly cautious person.</td>
</tr>
<tr>
<td>When people compliment me I sometimes get embarrassed.</td>
<td>I know that I am good because everybody keeps telling me so.</td>
</tr>
<tr>
<td>The thought of ruling the world frightens the hell out of me.</td>
<td>If I ruled the world it would be a better place.</td>
</tr>
<tr>
<td>I can usually talk my way out of anything.</td>
<td>I try to accept the consequences of my behavior.</td>
</tr>
<tr>
<td>I prefer to blend in with the crowd.</td>
<td>I like to be the center of attention.</td>
</tr>
<tr>
<td>I will be a success.</td>
<td>I am not too concerned about success.</td>
</tr>
<tr>
<td>I am no better or worse than most people.</td>
<td>I think I am a special person.</td>
</tr>
<tr>
<td>I am not sure if I would make a good leader.</td>
<td>I see myself as a good leader.</td>
</tr>
<tr>
<td>I am assertive.</td>
<td>I wish I were more assertive.</td>
</tr>
<tr>
<td>I like to have authority over other people.</td>
<td>I don't mind following orders.</td>
</tr>
<tr>
<td>I find it easy to manipulate people.</td>
<td>I don't like it when I find myself manipulating people.</td>
</tr>
<tr>
<td>I insist upon getting the respect that is due me.</td>
<td>I usually get the respect that I deserve.</td>
</tr>
<tr>
<td>I don't particularly like to show off my body.</td>
<td>I like to show off my body.</td>
</tr>
<tr>
<td>I can read people like a book.</td>
<td>People are sometimes hard to understand.</td>
</tr>
<tr>
<td>If I feel competent I am willing to take responsibility for making decisions.</td>
<td>I like to take responsibility for making decisions.</td>
</tr>
<tr>
<td>I just want to be reasonably happy.</td>
<td>I want to amount to something in the eyes of the world.</td>
</tr>
</tbody>
</table>

Which of these two statements is closer to your own feelings about yourself? If you identify more with "liking to have authority over people" than with "not minding following orders", then you would choose option on the left hand side.

You may identify with both statements. In this case you should choose the statement that seems closer to yourself. Or, if you do not identify with either statement, select the one that is least objectionable or remote. In other words, read each pair of statements and then choose the one that is closer to your own feelings. Indicate your answer by selecting either the left or right bubble. Please do not skip any items.
<table>
<thead>
<tr>
<th>My body is nothing special.</th>
<th>I like to look at my body.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sometimes I tell good stories.</td>
<td>I will usually show off if I get the chance.</td>
</tr>
<tr>
<td>I don't care about new fads and fashions.</td>
<td>Sometimes I am not sure of what I am doing.</td>
</tr>
<tr>
<td>I like to look at myself in the mirror.</td>
<td>I rarely depend on anyone else to get things done.</td>
</tr>
<tr>
<td>I can live my life in any way I want to.</td>
<td>Everybody likes to hear my stories.</td>
</tr>
<tr>
<td>Being an authority doesn't mean that much to me.</td>
<td>I like to do things for other people.</td>
</tr>
<tr>
<td>I would prefer to be a leader.</td>
<td>I take my satisfactions as they come.</td>
</tr>
<tr>
<td>I am going to be a great person.</td>
<td>I like to be complimented.</td>
</tr>
<tr>
<td>People sometimes believe what I tell them.</td>
<td>Power for its own sake doesn't interest me.</td>
</tr>
<tr>
<td>I am a born leader.</td>
<td>I like to start new fads and fashions.</td>
</tr>
<tr>
<td>I wish somebody would someday write my biography.</td>
<td>I am not particularly interested in looking at myself in the mirror.</td>
</tr>
<tr>
<td>I get upset when people don't notice how I look when I go out in public.</td>
<td>It makes me uncomfortable to be the center of attention.</td>
</tr>
<tr>
<td>I am more capable than other people.</td>
<td>People can't always live their lives in terms of what they want.</td>
</tr>
<tr>
<td>I am much like everybody else.</td>
<td>People always seem to recognize my authority.</td>
</tr>
<tr>
<td>I don't mind blending into the crowd when I go out in public.</td>
<td>It makes little difference to me whether I am a leader or not.</td>
</tr>
<tr>
<td>There is a lot that I can learn from other people.</td>
<td>I hope I am going to be successful.</td>
</tr>
<tr>
<td>I am an extraordinary person.</td>
<td>I can make anybody believe anything I want them to.</td>
</tr>
<tr>
<td>Leadership is a quality that takes a long time to develop.</td>
<td>I don't like people to pry into my life for any reason.</td>
</tr>
</tbody>
</table>
Below, you will make 10 hypothetical decisions. Each decision is a paired choice between "Option A" and "Option B". Each option corresponds with a lottery. The outcome of the lottery is determined by the roll of a 10-sided die (all sides have the same probability of facing upwards after the die is rolled). The faces are numbered from 1 to 10, and whatever number that is facing upwards will determine your (hypothetical) payoff.

For example, look at the first decision. Option A will award you $2 if the die lands on 1, and $1.60 if the die lands on 2-10. That means there is a 1/10 chance you will receive $2 and a 9/10 chance you will receive $1.60. Option B is different; it pays $3.85 if the die lands on 1, and $0.10 otherwise. Your choice is to pick between these two options.
APPENDIX B:

MATERIALS FROM EXPERIMENT TWO

GENERAL INSTRUCTIONS

Thank you for participating in this study. The purpose of the study is to examine how individuals make investment judgments and decisions. Your participation today will take approximately 30 minutes. You will receive payment for completing this study.

The information included in the case is not intended to be completely representative of what would normally be available when you evaluate a company. Providing you with that level of detail would require more time to complete the case than could realistically be expected. Please make the best judgments you can based on the information provided in these materials.

INHERITANCE

Imagine you have a cash balance of $10,000 in your savings account that you would like to invest. We will present you with a hypothetical investment opportunity that you can use any of your $10,000 to invest in. The law currently does not require you to pay taxes on your $10,000 inheritance.

1) For purposes of this case study, which of the following are true statements? Please check ALL that apply:

- I have $10,000 worth of savings that I may invest.
- I can choose to invest any amount of the $10,000 in an investment opportunity.
- My inheritance is not subject to tax under current tax laws.

The JOBS Act of 2013 allows for a new type of investing called crowdfunding.

A company that wishes to raise money via crowdfunding must create a webpage with a crowdfunding portal. The webpage must include a basic description of the business (i.e. business
plan), historical financial statements prepared in accordance with GAAP, and a variety of additional disclosures. The startup can ask for any amount of money up to $1,000,000, but they must raise the entire asking amount in order to receive any money.

The typical crowdfunding investment is a company that is in a very early stage of development, and often has yet to earn any revenue. Being pre-revenue does not mean that a company is unsuccessful, but the probability of success is very low for startups.

2) Companies looking to raise money via crowdfunding are usually startup companies that may have yet to earn revenue.
   ☐ True
   ☐ False

3) If a startup fails to raise all the capital it asks for, then it receives:
   ☐ All the capital it seeks to raise.
   ☐ Some of the capital it seeks to raise.
   ☐ None of the capital it seeks to raise.

**Startups are companies that are in an early stage of development.**

For a startup to develop into a business, it must raise capital from investors to fund its product development, inventory, and/or operations. Often times startups are created by students or young entrepreneurs who do not have the capital necessary to start a business.

Since startups are in an early stage of development, they make for a risky investment. Investing early before a company grows very large can offer a substantial return; however, more often than not a startup fails to be profitable and simply goes out of business.

A startup needs money to start becoming a full-fledged business. Since startups are focused on growing their business, it is very rare that they pay dividends to their investors - they need all the
cash they can get! So investors should not expect to make a return from dividends. Rather, investors that invest in a startup hope to earn a return through an exit by the startup.

An exit, also known as a liquidation, occurs when the startup sells its ownership to new owners. There are several ways this can occur, but the two most profitable scenarios involve either 1) an IPO or 2) a merger or acquisition. When an IPO occurs, the startup becomes a publicly owned and traded company. Early investors are therefore able to sell their ownership on a public stock exchange (e.g. NYSE), and often for a substantial return. When a merger or acquisition occurs, a different company sees value in the startup's business plan, product design, and/or customer base. The acquiring company, in turn, offers the owners of the startup cash or shares (in the acquiring company) in return for the owners' shares (in the startup). An acquisition or merge can also offer a substantial return to investors.

Given the importance of a startups' exit, it is very common for a startup to disclose its "exit strategy". That is, when seeking money from investors, startups often discuss how they plan to bring investors a return. A startup will give both a strategy and a timeline for when it expects to exit, and therefore when investors will experience a return on their investment.

In some cases, an investor can sell his or her shares before a startup executes its exit strategy. However, doing so can be quite difficult because a liquid market for a startup's shares is unlikely to exist.

4) An investor will experience a financial return from investing in a startup when a startup executes its exit strategy.

☐ True
☐ False

5) An investor can easily sell its shares in a startup at any time.

☐ True
☐ False

You will soon be presented with a crowdfunding opportunity. However, before you can invest, you must complete the training required by the crowdfunding portal (Crowdfunder USA). This
training is required by law, and ensures that investors understand the risk they face when investing in startups. Click the arrow to begin the training.

**Become an Investor on Crowdfunder USA**

Before investing on Crowdfunder USA, you must complete a short training to make sure you understand the risk you face when investing in a startup.

**PAST EXITS ON CROWDFUNDER**

Startups are a risky investment. Most fail, but the small percentage that succeed can bring a significant return. In the past, startups on Crowdfunder USA successfully execute their exit strategy only 5% of the time. Exits typically occur in 4-7 years from when their funding campaign closes. When an exit strategy fails, investors' entire investment is almost always lost.

**LIQUIDITY OF INVESTMENT PRIOR TO EXIT**

Usually, there is no active market for the shares you purchase on Crowdfunder USA. For this reason, it can be very difficult for an early investor to sell his/her shares prior to a startup making an exit. Often times no market develops for a startup's shares, and when a market does exist it often has few, if any, buyers.

6) Based on past data, the probability that a firm listed on Crowdfunder brings investors a return, that is the probability it successfully executes its exit strategy, is approximately:

- 5%
- 10%
- 50%
7) If I invest in a startup on Crowdfunder USA, and the startup fails:
   - No one will be liable to pay me back the amount I invested, and my investment will be lost
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    - I will definitely be able to find someone to buy my shares in the startup at any point.
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- True
- False

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- True
- False

18) E-Sign's 'digital ID' makes its 'advanced electronic signatures' very secure because signatures cannot be copied and storage is encrypted.

- True
- False

19) How credible do you find E-Sign's disclosure about its business idea?
The Market

Digital signatures on the rise worldwide

Cutting operational costs, moving to greener methods and even regulatory compliance are all factors driving the move away from keeping paper records and other documents, and towards secure electronic equivalents. A leading part of more “secure” electronic equivalents is the digital signature. The world is now adopting digital signatures as more organizations move from paper shuffling to more efficient online processes. When talking about “signing” an electronic document, for example, a PDF, it’s important to note that a digital signature is far more than an electronic representation of your authorization. In fact, a digital signature is a mathematical
scheme for demonstrating the authenticity of a digital document. Digital signatures can assure that information has not been altered, as well as verify the signer’s digital identity.

**The market size**

E-Sign has clients and users from a very diverse market, which are highlighted below:

- Banks and other loan and finance institutions
- Law firms (both small and global)
- Chartered accountants, (again both small and global)
- Insurance
- Estate agents
- Tax and revenue bodies
- Human resource
- Pensions and life assurance
- Life sciences
- Retail & fashion
- Digital media
- Advertising and PR

**Current legal structure**

As of 2014, all 50 states and Puerto Rico consider electronic signatures to be legally binding.

In 2010, US Congress passed the ESIGN Act which made electronic signatures legally binding for all interstate and international commerce. Furthermore, congress shortly after passed the Uniform Electronic Transactions (UET) Act which was subsequently adopted in 47 states and
Puerto Rico. The three states that have not adopted the UET Act nevertheless consider electronic signatures to be legally binding.

Market competitors

There have been many electronic service providers that have entered the market place during the last 18 months. However, our research suggests that none of them offer an ‘advanced electronic signature’ like that of e-sign.

The two main competitors of e-sign are Docusign and echosign by Adobe. Both these companies offer the same type of electronic signature service, where a user simply uploads a document onto their service, then sign by typing their name onto the document. This is then transformed into a computer simulated hand signature. Other methods include where a user scribes their signature onto the uploaded document by using a mouse.

We feel the problems with these methods are as follows:

- Holds less validity than a hand signature
- No way to verify the signatory
- No audit trial
- Easily forged
- Not an advanced electronic signature
- Replication of a hand signature and not a true electronic signature

Despite this, one of e-signs closest competitors (docusign) boasted an increase of nearly 40 million users over the last 18 months.

E-Sign addresses issues in the marketplace for where signatures matter. And offers a full audit trial from start to finish, giving the document author notifications each step of the way.

20) Electronic signatures are considered legally binding in all 50 states.

○ True
○ False
21) E-sign's electronic signature is superior to its competitors because (check all that apply):

- E-Sign's 'advanced electronic signature' is not easily forged and also easy to verify.
- E-Sign's signature provides an audit trail.
- E-Sign's signature is not simply an "electronically simulated hand signature" like its competitors.

22) How credible do you find E-Sign's disclosure about the market?
The People

Winston Stone - Company founder and CEO

Studied computer science (MIT), and business (MBA at Wharton). Experience in product developement (Google).

Seth Knight - Operations director

Experience in operations in pharmaceutical industry, as well as forensic testing and life sciences

Tina White – Lead software developer Studied computer science (MIT).


23) E-Sign's founder and CEO, Winston Stone, has the following qualifications:

☐ Computer Science degree from Massachusetts Instituted of Technology (MIT)
☐ Business degree from University of Nebraska.
☐ Masters in Business Administration(MBA) from Wharton(University of Pennsylvania's business school).
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☐ Computer Science degree from Massachusetts Instituted of Technology (MIT)
☐ Worked at Google as Director and Front-end Web Developer.
☐ Knows how to program using HTML, CSS, Javascript.
25) How credible do you find E-Sign's disclosure about its executives and their backgrounds?
The Exit

E-Sign seeks to deliver a ready market for its shares by the end of 2019 (approximately 5 years). We envisage achieving this through a trade sale to a quoted company (adobe etc), or through flotation (IPO).

If we achieve our forecasted results, we estimate E-Sign to have a market valuation of approximately $13.6m ($13,600K), based on Growing API sales, and larger companies acting as re-sellers.

This estimation is in line with what financial analysts have estimated companies operating within the remit of electronic signature service provider, hold as a value at this particular timeframe when considering market exit strategies.

Given E-Sign's high potential for growth, we believe that this is a conservative valuation. However, it is important to mention that startups seeking funding on Crowfunder USA often fail. Based on past data, companies only manage to successfully execute their business strategy and exit strategy 5% of the time.

26) Recall, E-Sign is offering 10.00% of its company for $84K. It projects a market valuation upon exit of $13,600K. This means that, if E-Sign successfully executes its business plan and exit strategy, investors can expect a return of:

- $1.519\% = 100\%\times($13,600K\times10\% - $84K)/($84K)$
- $0.62\% = 100\%\times$84K / $13600K$

27) Based on past data, a good estimate of the probability that E-Sign will be able to successfully execute its business strategy and exit strategy is approximately:

- 5\%
- 30\%
- 50\%
28) If you invest in E-Sign and it successfully executes its business plan and exit strategy, you will experience a return in approximately _____ years.

- 3
- 4
- 5
- 6
- 7
- 8

29) How credible do you find E-Sign's disclosure about its exit strategy?

You can find historical financial statements and a 3 year financial forecast below.
30) As of January 2014, E-Sign has yet to earn revenue.

- True
- False

31a) Based on E-Sign's current customer base and best financial projections, its forecast indicates its first profits will be earned in:

- February 2014
- March 2014
- April 2014
- May 2014
- June 2015

[Rewards Present Condition only]

**Rewards**

- Invest $5,000 and get
  - Shares in E-Sign and name and photo on E-Sign's 'founders hall of fame' section of the website

32b) If I invest $5,000 or more in E-Sign, I receive:

- Equity in E-Sign
- Equity in E-Sign and my name and photo on E-Sign's 'founders' hall of fame' section of its website
- A subscription to E-Sign's service

[Rewards Condition]
On the next page, you will answer some questions. You might want to refer to information that you read earlier, which you can see by clicking on the squares displayed below. The next page will have a back arrow that will allow you to come back to this page.

<table>
<thead>
<tr>
<th>Past Exits on CROWDFUNDER USA</th>
<th>Liquidity of Investment</th>
<th>E-Sign Portal</th>
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</tr>
<tr>
<td>Rewards</td>
<td>Projected Financial Statements</td>
<td></td>
<td></td>
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[No Rewards Condition]

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<td></td>
<td></td>
</tr>
</tbody>
</table>

If at any time you would like to review E-Sign's disclosures, click the back arrow at the bottom of the page!
33) Overall, how credible do you find E-Sign's disclosures?

34) How attractive do you find E-Sign as an investment?

35) How much of your $10,000 inheritance would you invest in E-Sign?

36) How likely are you to delay your decision about whether or not to invest in E-Sign?

37) As an investment, how risky do you believe E-Sign to be?
38) What do you think the probability is of E-Sign successfully executing its exit strategy?

39) If E-Sign successfully executes its business strategy, what percentage return do you expect it to deliver to investors that invested in its Crowdfunder USA investment round?

40) If E-Sign successfully executes its business strategy, it is uncertain how large a return they will deliver. Assume E-Sign exits. How uncertain is the return they deliver?

41) Do you have a Facebook account?
   - Yes
   - No

42) Do you have a Twitter account?
   - Yes
   - No
43) How likely are you to make a post on Facebook related to your investment?

44) How likely are you to post a tweet on Twitter related to your investment?

45) Approximately how many Facebook friends do you have? (Enter 0 if you are not on Facebook)

46) Approximately how many Twitter followers do you have? (Enter 0 if you are not on Twitter)

47) Overall, how interesting did you find this study? Extremely Boring 0…1…2…3…4…5…6…7…8…9…10 Extremely Interesting.
48) Do you own a smartphone?
- Yes
- No

49) Did you increase your investment just so that you could get one of the rewards offered by E-Sign?
- Yes
- No

50) An image of a QR Code appears below. Are you familiar with QR Codes?
- Yes - I've seen a QR code before, but I do not know what they are for.
- Yes - I've seen a QR code before, but I have never used one.
- Yes - I've used a QR code before.
- No

51) Have you invested in a company, public or private, in the past?
- Yes
- No

52) How much money do you currently have invested in equity, public or private?
- 

53) Do you plan to invest in public or private companies in the future?
- Yes
- No

54) Would you be interested in investing in startups via a crowdfunding platform?
- Yes
- No
55) Let us know what you think about investing in startups via a crowdfunding platform:
___________________________________________________________________
___________________________________________________________________

56) Approximately how many of the following courses have you taken at the University level (If you are currently a student please include both courses completed and courses in progress.)?
   Introductory accounting _____
   Financial accounting _____
   Managerial accounting _____
   Auditing/assurance _____
   Finance _____

57) What is your gender?
   ☐ Male
   ☐ Female
This inventory consists of a number of pairs of statements with which you may or may not identify.

Consider this example:

Which of these two statements is closer to your own feelings about yourself? If you identify more with "liking to have authority over people" than with "not minding following orders", then you would choose option on the left hand side.

You may identify with both statements. In this case you should choose the statement that seems closer to yourself. Or, if you do not identify with either statement, select the one that is least objectionable or remote. In other words, read each pair of statements and then choose the one that is closer to your own feelings. Indicate your answer by selecting either the left or right bubble. Please do not skip any items.
My body is nothing special.  
I try not to be a show off.  
I always know what I am doing.  
I sometimes depend on people to get things done.  
Sometimes I tell good stories.  
I expect a great deal from other people.  
I will never be satisfied until I get all that I deserve.  
Compliments embarrass me.  
I have a strong will to power.  
I don't care about new fads and fashions.  
I like to look at myself in the mirror.  
I really like to be the center of attention.  
I can live my life in any way I want to.  
Being an authority doesn't mean that much to me.  
I would prefer to be a leader.  
I am going to be a great person.  
People sometimes believe what I tell them.  
I am a born leader.  
I wish somebody would someday write my biography.  

I like to look at my body.  
I will usually show off if I get the chance.  
Sometimes I am not sure of what I am doing.  
I rarely depend on anyone else to get things done.  
Everybody likes to hear my stories.  
I like to do things for other people.  
I take my satisfactions as they come.  
I like to be complimented.  
Power for its own sake doesn't interest me.  
I like to start new fads and fashions.  
I am not particularly interested in looking at myself in the mirror.  
It makes me uncomfortable to be the center of attention.  
People can't always live their lives in terms of what they want.  
People always seem to recognize my authority.  
It makes little difference to me whether I am a leader or not.  
I hope I am going to be successful.  
I can make anybody believe anything I want them to.  
Leadership is a quality that takes a long time to develop.  
I don't like people to pry into my life for any reason.

I get upset when people don't notice how I look when I go out in public.  
I am more capable than other people.  
I am much like everybody else.  

I don't mind blending into the crowd when I go out in public.  
There is a lot that I can learn from other people.  
I am an extraordinary person.
Below, you will make 10 hypothetical decisions. Each decision is a paired choice between "Option A" and "Option B". Each option corresponds with a lottery. The outcome of the lottery is determined by the roll of a 10-sided die (all sides have the same probability of facing upwards after the die is rolled). The faces are numbered from 1 to 10, and whatever number that is facing upwards will determine your (hypothetical) payoff.

For example, look at the first decision. Option A will award you $2 if the die lands on 1, and $1.60 if the die lands on 2-10. That means there is a 1/10 chance you will receive $2 and a 9/10 chance you will receive $1.60. Option B is different; it pays $3.85 if the die lands on 1, and $0.10 otherwise. Your choice is to pick between these two options.
APPENDIX C:

MATERIALS FROM EXPERIMENT THREE

GENERAL INSTRUCTIONS

Thank you for participating in this study. The purpose of the study is to examine how individuals make investment judgments and decisions. Your participation today will take approximately 30 minutes. You will receive payment for completing this study.

The information included in the case is not intended to be completely representative of what would normally be available when you evaluate a company. Providing you with that level of detail would require more time to complete the case than could realistically be expected. Please make the best judgments you can based on the information provided in these materials.

INHERITANCE

Imagine you have a cash balance of $10,000 in your savings account that you would like to invest. We will present you with a hypothetical investment opportunity that you can use any of your $10,000 to invest in. The law currently does not require you to pay taxes on your $10,000 inheritance.

1) For purposes of this case study, which of the following are true statements? Please check ALL that apply:

☐ I have $10,000 worth of savings that I may invest.
☐ I can choose to invest any amount of the $10,000 in an investment opportunity.
☐ My inheritance is not subject to tax under current tax laws.

The JOBS Act of 2013 allows for a new type of investing called crowdfunding.

A company that wishes to raise money via crowdfunding must create a webpage with a crowdfunding portal. The webpage must include a basic description of the business (i.e. business
plan), historical financial statements prepared in accordance with GAAP, and a variety of additional disclosures. The startup can ask for any amount of money up to $1,000,000, but they must raise the entire asking amount in order to receive any money.

The typical crowdfunding investment is a company that is in a very early stage of development, and often has yet to earn any revenue. Being pre-revenue does not mean that a company is unsuccessful, but the probability of success is very low for startups.

2) Companies looking to raise money via crowdfunding are usually startup companies that may have yet to earn revenue.
   - True
   - False

3) If a startup fails to raise all the capital it asks for, then it receives:
   - All the capital it seeks to raise.
   - Some of the capital it seeks to raise.
   - None of the capital it seeks to raise.

Startups are companies that are in an early stage of development.

For a startup to develop into a business, it must raise capital from investors to fund its product development, inventory, and/or operations. Often times startups are created by students or young entrepreneurs who do not have the capital necessary to start a business.

Since startups are in an early stage of development, they make for a risky investment. Investing early before a company grows very large can offer a substantial return; however, more often than not a startup fails to be profitable and simply goes out of business.

A startup needs money to start becoming a full-fledged business. Since startups are focused on growing their business, it is very rare that they pay dividends to their investors - they need all the
cash they can get! So investors should not expect to make a return from dividends. Rather, investors that invest in a startup hope to earn a return through an exit by the startup.

An exit, also known as a liquidation, occurs when the startup sells its ownership to new owners. There are several ways this can occur, but the two most profitable scenarios involve either 1) an IPO or 2) a merger or acquisition. When an IPO occurs, the startup becomes a publicly owned and traded company. Early investors are therefore able to sell their ownership on a public stock exchange (e.g. NYSE), and often for a substantial return. When a merger or acquisition occurs, a different company sees value in the startup's business plan, product design, and/or customer base. The acquiring company, in turn, offers the owners of the startup cash or shares (in the acquiring company) in return for the owners' shares (in the startup). An acquisition or merge can also offer a substantial return to investors.

Given the importance of a startups' exit, it is very common for a startup to disclose its "exit strategy". That is, when seeking money from investors, startups often discuss how they plan to bring investors a return. A startup will give both a strategy and a timeline for when it expects to exit, and therefore when investors will experience a return on their investment.

In some cases, an investor can sell his or her shares before a startup executes its exit strategy. However, doing so can be quite difficult because a liquid market for a startup's shares is unlikely to exist.

4) An investor will experience a financial return from investing in a startup when a startup executes its exit strategy.
   ○ True
   ○ False

5) An investor can easily sell its shares in a startup at any time.
   ○ True
   ○ False

You will soon be presented with a crowdfunding opportunity. However, before you can invest, you must complete the training required by the crowdfunding portal (Crowdfunder USA). This
training is required by law, and ensures that investors understand the risk they face when investing in startups. Click the arrow to begin the training.

**Become an Investor on Crowdfunder USA**

Before investing on Crowdfunder USA, you must complete a short training to make sure you understand the risk you face when investing in a startup.

**PAST EXITS ON CROWDFUNDER**

Startups are a risky investment. Most fail, but the small percentage that succeed can bring a significant return. In the past, startups on Crowdfunder USA successfully execute their exit strategy only 5% of the time. Exits typically occur in 4-7 years from when their funding campaign closes. When an exit strategy fails, investors' entire investment is almost always lost.

**LIQUIDITY OF INVESTMENT PRIOR TO EXIT**

Usually, there is no active market for the shares you purchase on Crowdfunder USA. For this reason, it can be very difficult for an early investor to sell his/her shares prior to a startup making an exit. Often times no market develops for a startup's shares, and when a market does exist it often has few, if any, buyers.

6) Based on past data, the probability that a firm listed on Crowdfunder brings investors a return, that is the probability it successfully executes its exit strategy, is approximately:

- 5%
- 10%
- 50%
7) If I invest in a startup on Crowdfunder USA, and the startup fails:

- No one will be liable to pay me back the amount I invested, and my investment will be lost
- The entrepreneurs who founded the startup will be personally liable to pay me back the amount I invested
- Crowdfunder USA will be liable to pay me back the amount I invested

8) If I invest in the equity of a startup, and I decide I want my money back:

- I will be able to surrender my shares to the company, and it will give me my money back
- I will be able to sell my shares on a stock exchange at any time
- I probably will not be able to sell my shares unless the startup is bought by another company or has an IPO

9) Startups generally:

- Do not pay dividends to investors
- Begin paying dividends immediately
- Pay dividends in about one year

10) If I invest in the equity of a startup, the startup succeeds, and I want to cash in on the success:

- I will definitely be able to find someone to buy my shares in the startup at any point.
- Unless the startup is bought by another company or has an IPO, it may be difficult to find someone to buy my shares
- The startup will always be required to buy back my shares
Below is a screenshot of E-Sign's webpage on Crowdfunder USA.

11) What does E-Sign do?
- It offers advanced electronic signatures that allow a person to sign a document via computer
- It offers customized, "signature" products such as pens and sunglasses

12) How much money is E-Sign trying to raise?
- $20,000
- $30,000
- $84,000
13) How much money has E-Sign already raised?
○ $0
○ $75,000
○ $100,000

14) How many investors have already invested in E-Sign?
○ 0
○ 40
○ 90
○ 140

The screen shot on the previous page indicated several disclosures made by E-Sign. To help investors understand its vision, business plan, and market, E-Sign has prepared text and video disclosures. In the next section, you will be able to view the information that E-Sign has disclosed to help you make your investment decision.

Please pay close attention, as this information is crucial for making your investment decision.

Please watch this video to learn about E-Sign:
15) E-Sign uses QR technology that provides a unique QR code that can be scanned to access information embedded in an electronic signature.

- True
- False

16) How credible do you find E-Sign's video?
The Idea

"Signatures are a thing of the past"

It is the Vision of E-Sign to improve growth and business efficiency, by changing the way businesses conclude transactions by removing the archaic process of hand signing, and replace this with a more secure advanced electronic signature.

The problems E-Sign solves

There are a number of problems and costs associated with hand written signatures, which E-Sign aims to solve. First, it significantly lowers the cost of signatures by eliminating paper and the need to send documents via mail. Storage costs for electronic signatures are also much cheaper than storage costs for paper signatures. Second, it reduces fraud through its simple, secure 'advanced electronic signature' service.

What E-Sign offers

E-Sign offers easy signature verification, advanced fraud protection, elimination of postal costs and a reduction in storage costs.

What we have achieved to date.

E-sign took over two years to develop, and went live late 2013. Since then, the company is generating interest, and is endeavouring to establish a considerable client base, from individual
users, SME's as well as several larger corporations such as Hugo Boss who are currently trialling our product. E-Sign can be accessed anywhere in the world.

Through the launch of our API platform, we have now created a scalable product which can be implemented and easily adapted to fit any companies needs.

E-Sign has recently achieved ISO27001 certification

The need for additional funding

Funding is needed to launch a successful marketing campaign, as well as development of exciting new features, such as IOS app development, and features that we wish to develop further after listening to customer feedback. We aim to have E-Sign accessible to everyone on any platform.

17) The cost of providing and storing an electronic signature through E-Sign is cheaper than that of a paper-and-pen signature.

☐ True
☐ False

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[Scale from 0 to 10 for credibility]
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- Banks and other loan and finance institutions
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- Human resource
- Pensions and life assurance
- Life sciences
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Seth Knight - Operations director

Experience in operations in pharmaceutical industry, as well as forensic testing and life sciences

Tina White – Lead software developer  Studied computer science (MIT).


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- 0.62% = 100%*$84K / $13600K

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- 5%
- 30%
- 50%
28) If you invest in E-Sign and it successfully executes its business plan and exit strategy, you will experience a return in approximately _____ years.

- 3
- 4
- 5
- 6
- 7
- 8

29) How credible do you find E-Sign's disclosure about its exit strategy?

You can find historical financial statements and a 3 year financial forecast below.

---

**Financial Summary**

<table>
<thead>
<tr>
<th>Prior Period</th>
<th>Year 1 Feb 16 - Jan 17</th>
<th>Year 2 Feb 17 - Jan 18</th>
<th>Year 3 Feb 18 - Jan 19</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Sales:</strong></td>
<td>$50</td>
<td>$72,772</td>
<td>$69,378</td>
</tr>
<tr>
<td><strong>Gross Margin:</strong></td>
<td>45%</td>
<td>164,645</td>
<td>628,089</td>
</tr>
<tr>
<td><strong>Net Income:</strong></td>
<td>8%</td>
<td>95.12%</td>
<td>95.67%</td>
</tr>
<tr>
<td><strong>Earnings before Tax &amp; Dep:</strong></td>
<td>6 (9.6%)</td>
<td>4,905</td>
<td>299,681</td>
</tr>
<tr>
<td><strong>Closing Cash:</strong></td>
<td>20,942</td>
<td>51,095</td>
<td>201,993</td>
</tr>
<tr>
<td><strong>Total Liabilities:</strong></td>
<td>31,078</td>
<td>30,906</td>
<td>94,772</td>
</tr>
<tr>
<td><strong>Total Assets:</strong></td>
<td>25,068</td>
<td>111,478</td>
<td>408,134</td>
</tr>
</tbody>
</table>

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**e-Sign 3 Year Illustrative Financials February 2016 - January 2019**

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120
32) As of January 2014, E-Sign has yet to earn revenue.

- True
- False
33) Overall, how credible do you find E-Sign's disclosures?

34) How attractive do you find E-Sign as an investment?

35) How much of your $10,000 inheritance would you invest in E-Sign?

*Note: E-Sign is only offering $9,000 in equity so you are unable to invest your entire inheritance. 
36) How likely are you to delay your decision about whether or not to invest in E-Sign?

37) As an investment, how risky do you believe E-Sign to be?

38) What do you think the probability is of E-Sign successfully executing its exit strategy?

39) If E-Sign successfully executes its business strategy, what percentage return do you expect it to deliver to investors that invested in its Crowdfunder USA investment round?
40) If E-Sign successfully executes its business strategy, it is uncertain how large a return they will deliver. Assume E-Sign exits. How uncertain is the return they deliver?

![Uncertainty Scale]

41) How likely are you to make a post on social media (e.g. Facebook or Twitter) related to your investment?

![Likelihood of Posting Scale]

Although you've already made your investment decision, some new information has come to light: E-Sign offers rewards for investments that exceed certain investment thresholds. Please move on to the next page to learn more.

**Rewards**

Invest $\text{Investment Amount}+100$ and get:

- Shares in E-Sign and name and photo on E-Sign's 'founders hall of fame' section of the website
42) If I invest $[Investment Amount+100] or more in E-Sign, I receive:

- Equity in E-Sign
- Equity in E-Sign and my name and photo on E-Sign's 'founders' hall of fame' section of its website
- A subscription to E-Sign's service

43) Would you increase your investment in order to receive the reward mentioned above?

- Yes
- No

44) Now that you know that E-Sign offers a reward for investing, how attractive do you find E-Sign as an investment?

![Investment Attractiveness Scale]

45) Now that you know that E-Sign offers a reward for investing, how much of your $10,000 inheritance would you invest in E-Sign?

*Note: E-Sign is only offering $9,000 in equity so you are unable to invest your entire inheritance.

___________

46) Now that you know that E-Sign offers a reward for investing, how risky do you believe E-Sign to be?

![Riskiness of E-Sign Scale]

47) By how much money would you be willing to increase your investment to receive the reward that E-Sign is offering?

___________
48) Now that you know that E-Sign offers rewards for investing, how likely are you to make a post on social media (e.g. Facebook or Twitter) related to your investment?

[Graph showing Likelihood of posting]

49) Overall, how interesting did you find this study? Extremely Boring 0...1...2...3...4...5...6...7...8...9...10 Extremely Interesting.

[Graph showing Study's Interestingness]

50) Do you own a smartphone?

☑ Yes
☑ No

60) To what extent do you agree with the following: E-Sign's rewards played a crucial part in my decision to invest.

[Graph showing Agreement]

61) Did you increase your investment just so that you could get one of the rewards offered by E-Sign?

☑ Yes
☑ No
62) An image of a QR Code appears below. Are you familiar with QR Codes?

☐ Yes - I've seen a QR code before, but I do not know what they are for.
☐ Yes - I've seen a QR code before, but I have never used one.
☐ Yes - I've used a QR code before.
☐ No

63) Have you invested in a company, public or private, in the past?

☐ Yes
☐ No

64) How much money do you currently have invested in equity, public or private? ______

65) Do you plan to invest in public or private companies in the future?

☐ Yes
☐ No

66) Would you be interested in investing in startups via a crowdfunding platform?

☐ Yes
☐ No

67) Let us know what you think about investing in startups via a crowdfunding platform:

68) Approximately how many of the following courses have you taken at the University level (If you are currently a student please include both courses completed and courses in progress.)?

   Introductory accounting ______
   Financial accounting ______
   Managerial accounting ______
   Auditing/assurance ______
   Finance ______

69) What is your gender?

☐ Males
☐ Female
This inventory consists of a number of pairs of statements with which you may or may not identify.

Consider this example:

Which of these two statements is closer to your own feelings about yourself? If you identify more with "liking to have authority over people" than with "not minding following orders", then you would choose option on the left hand side.

You may identify with both statements. In this case you should choose the statement that seems closer to yourself. Or, if you do not identify with either statement, select the one that is least objectionable or remote. In other words, read each pair of statements and then choose the one that is closer to your own feelings. Indicate your answer by selecting either the left or right bubble. Please do not skip any items.
My body is nothing special.
I try not to be a show off.
I always know what I am doing.
I sometimes depend on people to get things done.
Sometimes I tell good stories.
I expect a great deal from other people.
I will never be satisfied until I get all that I deserve.
Compliments embarrass me.
I have a strong will to power.
I don't care about new fads and fashions.
I like to look at myself in the mirror.
I really like to be the center of attention.
I can live my life in any way I want to.
Being an authority doesn't mean that much to me.
I would prefer to be a leader.
I am going to be a great person.
People sometimes believe what I tell them.
I am a born leader.
I wish somebody would someday write my biography.

I like to look at my body.
I will usually show off if I get the chance.
Sometimes I am not sure of what I am doing.
I rarely depend on anyone else to get things done.
Everybody likes to hear my stories.
I like to do things for other people.
I take my satisfactions as they come.
I like to be complimented.
Power for its own sake doesn't interest me.
I like to start new fads and fashions.
I am not particularly interested in looking at myself in the mirror.
It makes me uncomfortable to be the center of attention.
People can't always live their lives in terms of what they want.
People always seem to recognize my authority.
It makes little difference to me whether I am a leader or not.
I hope I am going to be successful.
I can make anybody believe anything I want them to.
Leadership is a quality that takes a long time to develop.
I don't like people to pry into my life for any reason.

I don't mind blending into the crowd when I go out in public.
There is a lot that I can learn from other people.
I am an extraordinary person.
Below, you will make 10 hypothetical decisions. Each decision is a paired choice between "Option A" and "Option B". Each option corresponds with a lottery. The outcome of the lottery is determined by the roll of a 10-sided die (all sides have the same probability of facing upwards after the die is rolled). The faces are numbered from 1 to 10, and whatever number that is facing upwards will determine your (hypothetical) payoff.

For example, look at the first decision. Option A will award you $2 if the die lands on 1, and $1.60 if the die lands on 2-10. That means there is a 1/10 chance you will receive $2 and a 9/10 chance you will receive $1.60. Option B is different; it pays $3.85 if the die lands on 1, and $0.10 otherwise. Your choice is to pick between these two options.

<table>
<thead>
<tr>
<th></th>
<th>Option A</th>
<th>Option B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/10 of $2.00, 9/10 of $1.60</td>
<td>1/10 of $3.85, 9/10 of $0.10</td>
<td></td>
</tr>
<tr>
<td>2/10 of $2.00, 8/10 of $1.60</td>
<td>2/10 of $3.85, 8/10 of $0.10</td>
<td></td>
</tr>
<tr>
<td>3/10 of $2.00, 7/10 of $1.60</td>
<td>3/10 of $3.85, 7/10 of $0.10</td>
<td></td>
</tr>
<tr>
<td>4/10 of $2.00, 6/10 of $1.60</td>
<td>4/10 of $3.85, 6/10 of $0.10</td>
<td></td>
</tr>
<tr>
<td>5/10 of $2.00, 5/10 of $1.60</td>
<td>5/10 of $3.85, 5/10 of $0.10</td>
<td></td>
</tr>
<tr>
<td>6/10 of $2.00, 4/10 of $1.60</td>
<td>6/10 of $3.85, 4/10 of $0.10</td>
<td></td>
</tr>
<tr>
<td>7/10 of $2.00, 3/10 of $1.60</td>
<td>7/10 of $3.85, 3/10 of $0.10</td>
<td></td>
</tr>
<tr>
<td>8/10 of $2.00, 2/10 of $1.60</td>
<td>8/10 of $3.85, 2/10 of $0.10</td>
<td></td>
</tr>
<tr>
<td>9/10 of $2.00, 1/10 of $1.60</td>
<td>9/10 of $3.85, 1/10 of $0.10</td>
<td></td>
</tr>
<tr>
<td>10/10 of $2.00, 0/10 of $1.60</td>
<td>10/10 of $3.85, 0/10 of $0.10</td>
<td></td>
</tr>
</tbody>
</table>