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Success Factors in Title III Equity Crowdfunding in the United States

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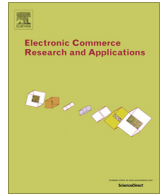
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Feature article

Success factors in Title III equity crowdfunding in the United States

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ABSTRACT

The financial industry is seeing rapid introduction of new technologies and new business models that are challenging established practices. Recent changes in financial regulation in the United States have spurred evolution of equity crowdfunding as a potential alternative to traditional sources of venture capital. To address the relative lack of knowledge about success factors, we focus on Title III equity crowdfunding platforms in the United States that are open to non-accredited investors. We draw on traditional venture finance research and we examine the effects of market, execution and agency risks in equity crowdfunding under Title III. We collect data on 133 ventures that attracted more than \$11 million in funding commitments across sixteen Title III equity crowdfunding platforms. We find that all three types of risks can affect the likelihood of successful fundraising under Title III. We discuss the implications of these findings for entrepreneurs, investors, crowdfunding platforms and policy makers.

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1. introduction

Continuous evolution of technology provides innovation opportunities across different sectors of the economy (Kauffman et al., 2017). The finance industry has often been at the forefront of introducing new technologies to reduce friction in commercial transactions and generate new business opportunities. For example, introduction of cashless payment methods in developing economies has been shown to promote the volume of transactions (Runnemark et al., 2015). The Internet has become an effective platform to support innovation in different types of traditional banking activities. For example, Internet-mediated peer-to-peer lending has rapidly grown into a multibillion dollar industry globally (Chen et al., 2016) and Internet-based cryptocurrencies are promising to offer a decentralized alternative to traditional value store systems (Alabi, 2017). In this study, we focus on the innovation in entrepreneurial venture fundraising in the United States. More specifically, we examine the success factors associated with venture fundraising via equity crowdfunding under Title III of the JOBS Act in the United States.

Equity crowdfunding refers to the process of raising funds for entrepreneurial ventures, typically via Internet-based platforms, whereby investors receive equity in exchange for capital (SEC, 2016). Equity crowdfunding is distinct from reward-based crowdfunding. In reward-based crowdfunding, project backers provide

funds to early stage entrepreneurial projects, typically in exchange for a discount on the planned product, but receive no equity in the project. For example, Oculus Rift raised over \$2.4 million on Kickstarter (Gleasure and Feller, 2016), a reward-based crowdfunding platform, through pre-orders for the virtual reality headset, but the individual backers received no equity in the company and they did not benefit from the \$2.3 billion acquisition of the company by Facebook (Constine, 2014).

Equity crowdfunding was explicitly prohibited in the United States prior to the passage of the JOBS Act in 2012 (SEC, 2015a). The JOBS Act sought to make it easier for entrepreneurs to raise funding and it contains several provisions. Title II of the JOBS Act became effective in 2013 and it relaxed the rules concerning public investment solicitation from accredited investors (SEC, 2015b). Accredited investors are individuals who either have income exceeding \$200,000 per year or have at least \$1 million in assets, excluding the primary residence (SEC, 2013). Preliminary research on Title II equity crowdfunding shows that over \$1.26 billion have been committed by accredited investors to Title II projects (Mamonov et al., 2017), however, much less is known about Title III.

Title III of the JOBS Act expanded permissible equity crowdfunding to include the general public (Ivanov and Knyazeva, 2017). Title III allows companies to raise up to \$1 million from accredited and non-accredited investors over a 12-month period. It allows individual non-accredited investors to commit up to \$2,000 a year to equity crowdfunded projects if the person's income is less than \$100,000 a year and up to \$10,000 if the person's income is above \$100,000 (Ivanov and Knyazeva, 2017).

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Investor participation in early-stage venture financing exposes the investors to many risks (Siegel, 2013). Concerns about individual non-accredited investor protections delayed the implementation of Title III provisions until May 2016 (Ivanov and Knyazeva, 2017). A theoretical evaluation of Title III legislation suggested that Title III would likely fail due to information asymmetry and adverse selection problems (Catalini et al., 2016), yet little is known about the actual state of affairs across Title III equity crowdfunding platforms. This is the research gap that we begin to address in the present study.

Title III equity crowdfunding is open to both accredited and non-accredited investors. Prior research on crowdfunding has shown that less experienced investors often follow the lead of more experienced professional investors (Kim and Viswanathan, 2014). We draw on prior research on factors that are commonly considered by accredited investors in potential offline investment opportunity evaluation (Carpentier and Suret, 2015) and we examine the effects of market, execution and agency risks on venture fundraising success in Title III equity crowdfunding. We analyze 133 projects across sixteen Title III equity crowdfunding platforms that sought to raise funding in the period between May 2016 and February 2017. In addition to providing empirical evidence that entrepreneurial ventures can be successful in raising funds under Title III, our results reveal that all three types of risks can affect the success of fundraising in Title III platforms.

The remainder of the manuscript is structured as follows. First, we provide an overview of prior research on equity crowdfunding. Next, we draw on research in risk capital investments and we develop the research framework in our study. We then describe the data and our analytical methodology, and we present the results. We conclude with a discussion of emergent insights and implications of our findings for entrepreneurs, investors, crowdfunding platforms and policy makers.

2. Equity crowdfunding literature review

Equity crowdfunding is distinct from other types of crowdfunding that exist, in that it allows backers to receive an equity stake in the company. Generally, four types of crowdfunding are recognized: *reward-based*, *equity-based*, *loan-based*, and *donation-based*. Reward-based crowdfunding allows entrepreneurs to raise funding by enabling project backers to pre-order a product or service that is being developed (Kim et al., 2017). Reward-based crowdfunding has always been legal in the United States. Joseph Pulitzer, the publisher of *New York World*, led a crowdfunding campaign to build the pedestal for the Statue of Liberty, and successfully raised funding from 160,000 contributors in 1885 (National Park Service, 2016). Because the campaign initiated by Joseph Pulitzer offered tangible rewards to the participants – the Statue of Liberty would be available for viewing and the top contributions were incentivized by the inclusion of the contributors' names on the memorial plaque on the pedestal, this campaign is generally discussed as an early example of reward-based crowdfunding.

Indiegogo and Kickstarter were among the first platforms to leverage the Internet to expand the reach of reward-based crowdfunding, and they have brokered over \$3 billion in funding commitments since launch (Kickstarter, 2017). There is an active stream of research exploring factors that affect the success of projects hosted on the reward-based platforms (Kim et al., 2017; Mollick, 2014; Mollick and Nanda, 2016; Ryu and Kim, 2016). However, these studies do not necessarily yield useful insights for equity-based crowdfunding, because investor motivations for participation in equity-based crowdfunding platforms are very different from backers in reward-based crowdfunding (Belleflamme et al., 2014). Equity investors are typically motivated by the

expected gains in the value of their investments, as opposed to receiving a product or service from a reward-based project.

Loan-based lending, also known as *peer-to-peer* (P2P) *lending* is the third type of crowdfunding (Zhang and Chen, 2017). Platforms that facilitate P2P lending, such as LendingClub, typically perform credit risk assessment on the requests for unsecured personal loans and they connect borrowers with potential lenders (Chen et al., 2016). The key difference between loan-based and equity-based crowdfunding is the risk/reward profile of the participating investors. P2P lending typically involves relatively short-term loans (6–36 months), with a clearly defined interest rate that is set at the time of loan origination. Equity-based crowdfunding exposes the investors to much greater uncertainty in terms of both the time horizon for realizing a return on the investment, as well as the likelihood of earning a financial return. Research on early-stage venture investments suggests that it commonly takes 5–8 years for the investors in early-stage entrepreneurial ventures to achieve liquidity and more than half of the investments in early-stage ventures result in a loss of the invested capital (Mason and Harrison, 2008).

Whereas the participation in equity, rewards, and loan-based crowdfunding is typically motivated by self-interest (Belleflamme et al., 2014), there are also crowdfunding platforms, such as Kiva.org, that facilitate philanthropic activities. Donors on the Kiva platform provide funds to support entrepreneurs in developing countries. This activity is primarily altruistic – the donors have no financial incentives to participate on the platform (Gleasure and Feller, 2016). Table 1 summarizes the key differences between different types of crowdfunding.

While equity crowdfunding is a relatively recent phenomenon in the United States, a number of other countries have had a head start. Equity crowdfunding has always been legal in Australia and the Australian Small Scale Offering Board (ASSOB) has helped entrepreneurs raise over \$146 million since its launch in 2005 (ASSOB, 2017). Ahlers et al. (2015) examined factors that influence equity crowdfunding success on ASSOB. The authors found that provision of financial projections by the entrepreneurs and a greater share of equity being retained by the entrepreneurs were positively associated with crowdfunding success.

Equity crowdfunding regulation has advanced rapidly in Europe and each country in the European Union has at least one equity crowdfunding platform (CrowdfundingHub, 2016). Several studies have explored factors that can affect the success of equity crowdfunding on the European platforms. Lukkarinen et al. (2016) examined an equity crowdfunding platform in Finland and found that the size of the entrepreneurs' social networks had a positive effect on the likelihood of successful fundraising, while the minimum investment amount required from each potential investor had a negative effect on the likelihood of success. Vismara (2016a, 2016b) explored success factors on Crowdcube, an equity crowdfunding platform based in the United Kingdom, and found that social connections, equity retention and engagement of professional investors were positively associated with successful campaigns. Professional investor involvement was also identified as an important factor by Ralcheva and Roosenboom (2016) who also studied Crowdcube.

Focusing on equity crowdfunding in the United States, Agrawal et al. (2013) presented a theoretical analysis highlighting the potential for the crowdfunding platforms to amplify information asymmetries that commonly exist in early-stage ventures. Entrepreneurs typically know more about the prospects of a business venture than the potential investors and the information asymmetry presents a challenge in the evaluation of investment opportunities. However, in a subsequent study, the authors found that angel investors often pool their resources and form syndicates, wherein a well-known investor takes the lead role in performing the due

Table 1
Capital provider motivations, risks and liquidity horizons across crowdfunding categories.

| | Donation-based CF | Reward-based CF | Loan-based CF | Equity-based CF |
|-----------------------------|-------------------|----------------------------------|-------------------|---------------------|
| Capital provider motivation | Altruism | Product or service | Earned interest | Equity appreciation |
| Risks | None | Product or service not delivered | Loss of principal | Loss of investment |
| Liquidity horizon | Not applicable | Not applicable | 6–36 months | 5–8 years |

diligence on potential investments, thus providing a solution to the information asymmetry challenges (Agrawal et al., 2014). Focusing on Title II equity crowdfunding platforms, Mamonov et al. (2017) showed that real estate projects are particularly successful in raising funding from the accredited investors under Title II. Table 2 summarizes the insights of empirical studies that examined equity crowdfunding in different geographies.

3. Research framework and hypotheses

The goal of the present study is to understand factors that can impact the success of equity crowdfunding under Title III in the United States. Title III equity crowdfunding is open to both accredited and non-accredited investors. While little is known about the criteria that may influence non-accredited investor decision making in this context, research has suggested that faced with the uncertainty of investment decisions, less knowledgeable investors often take their cues from experts (Kim and Viswanathan, 2014). We expect that in Title III equity crowdfunding less sophisticated investors will follow the lead of business angels (accredited investors) who are also active in Title III equity crowdfunding platforms. Hence, we draw on research focusing on business angel investor decision making to develop the theoretical framework in our study.

Research has shown that investors in informal risk capital markets focus on risks that fall into three general categories: market risk, execution risk and agency risk (Carpentier and Suret, 2015). *Market risk* is the risk of losing money on an investment due to overall market factors. Examples of market factors include competition, growth potential, recession and political turmoil. Many of these risks are external to the venture and outside the entrepreneur's control. However, prior research has shown that market risk is the top reason why professional angel investor groups reject an investment (Carpentier and Suret, 2015; Maxwell et al., 2011). When analyzing market risk, investors typically consider the stage

of the venture in question. Market risk is reduced as the venture proceeds from idea/concept to prototype to actual sales.

A venture that is just in the idea or concept phase has the most market risk because its market potential has not been proven. As the venture moves from the idea or concept stage to the prototype or minimal viable product stage some uncertainty about the product is removed. However, the market risk still remains high.

A venture needs to show that its product/service can succeed in the market. It can accomplish this by selling its product/service directly to consumers for a *business-to-consumer* (B2C) venture or signing corporate customers for a *business-to-business* (B2B) venture (Feld and Mendelson, 2016). Successful consumer product launches and signings of marquee corporate clients are commonly interpreted by risk capital investors as market validation (Maxwell et al., 2011) and we expect a similar behavior among the investors in the context of equity crowdfunding platforms.

- **Hypothesis 1a (The Completed Product or Service Development Hypothesis).** *Ventures that completed product or service development are more likely to raise funding in online equity crowdfunding campaigns than early-stage ventures (ideas or prototypes).*
- **Hypothesis 1b (The Ventures with Large Corporate Clients Hypothesis).** *Ventures that have large corporate clients are more likely to raise funding in online equity crowdfunding campaigns than ventures lacking such clients.*

Prior research has shown that investors consider whether the venture represents a disruptive or incremental innovation as a criterion for providing funding (Metrick and Yasuda, 2010). Startups that offer only incremental innovations are unlikely to succeed in competition with established incumbents. This is due to the fact that incumbents typically have greater resources (i.e., financial, marketing, R&D, etc.) than startups and can react aggressively to incremental innovation. For example, the incumbent can accelerate their R&D cycle to develop and market a similar or superior incremental innovation (Echambadi et al., 2008; Markman and Waldron, 2014).

Startups based on a disruptive innovation are more likely to attract funding (Christensen et al., 2002). While not a perfect proxy for disruptive innovation, patents provide strong evidence of significant practical innovation (Häussler et al., 2013). Patents also provide protection for startups from potential imitation by incumbents and thus they can offer a source of sustainable competitive advantage.

- **Hypothesis 2 (The Venture Holding Patents Hypothesis).** *Ventures that hold patents are more likely to raise funding in online equity crowdfunding campaigns than ventures that do not have patents.*

Execution risk is the risk that a venture's business plans will not succeed in the market. In order to execute their plans successfully, startup ventures require a diverse portfolio of skills, such as product development, marketing, operations, financial management, etc. (Lazear, 2004). No individual entrepreneur is likely to possess all of the skills required to make the venture a success. Prior research indicates that venture capitalists are more likely to invest

Table 2
Empirical studies in equity crowdfunding.

| Authors/Context | Insights |
|---|---|
| Ahlers et al. (2015) Australian Small Scale Offering Board | Provision of financial projections and entrepreneurs retaining greater equity percentage are associated with successful fundraising. |
| Lukkarinen et al. (2016) Finland | The size of the minimum investment (negative effect) and early finding from entrepreneurs' private networks are associated with successful fundraising. |
| Vismara (2016a) Crowdcube, UK | Equity retention and number of social connections in social networking sites are predictive of funding success. |
| Vismara (2016b) Crowdcube, UK | Engagement of well-known investors has a positive effect on project success. |
| Ralcheva and Roosenboom (2016) Crowdcube, UK | Professional investor involvement and patents are associated with success. |
| Agrawal et al. (2014) Angel.co – Title II equity crowdfunding | Syndicate driven investments dominate the angel investor oriented equity crowdfunding platform. |
| Mamonov et al. (2017) Title II equity crowdfunding platforms | Real estate investments are disproportionately more successful in Title II crowdfunding. |

in startup teams over single entrepreneurs (Hsu, 2007). In addition, venture capitalists prefer teams that are comprised of both young entrepreneurs with new ideas and more seasoned executives who can guide the venture to successful execution of its plans.

Research has shown that angel investors consider an entrepreneur's prior industry experience and prior entrepreneurial experience when deciding whether to invest (Maxwell et al., 2011). Potential investors value prior entrepreneurial experience due to the fact that in order to realize financial reward from an early-stage investment the venture must have an "exit" (buyout or public offering). Entrepreneurs who have had previous successful exits understand the expectations of investors and have shown their ability to deliver financial rewards.

- **Hypothesis 3a (The Single Entrepreneur Hypothesis).** Single entrepreneurs are less likely to successfully raise funding in online equity crowdfunding campaigns than entrepreneurial teams comprised of 2 or more members.
- **Hypothesis 3b (The Serial Entrepreneur Hypothesis).** Serial entrepreneurs are more likely to successfully raise funding in online equity crowdfunding campaigns.
- **Hypothesis 3c (The Experienced Entrepreneur Hypothesis).** Entrepreneurs with prior experience in the target industry are more likely to raise funding in online equity crowdfunding campaigns.
- **Hypothesis 3d (The Larger Entrepreneurial Teams Hypothesis).** Larger entrepreneurial teams are more likely to successfully raise funding in online equity crowdfunding campaigns.

The information asymmetry between the entrepreneurs and potential investors leads to agency risk. Entrepreneurs know more about their business than potential investors. This can result in opportunism which is more common among younger, smaller firms (NOE and Rebello, 1996). Angel investors typically mitigate the agency risk by close involvement in the entrepreneurial ventures in which they invest. However, online platform-mediated investments allow for more geographically-distant investments which make active angel investor engagement in the entrepreneurial ventures very challenging (Morrissette, 2007). In these cases, potential investors may rely on another angel investor or VC firm to take a lead role in closely monitoring the venture. Research conducted on the angel-oriented, equity crowdfunding platform Angel.co has shown that successful fundraising is dominated by syndicate-based investments. In this structure a well-known angel investor or VC takes the lead role – providing due diligence and close monitoring (Agrawal et al., 2014). Therefore, we anticipate that companies that have funding from an experienced angel or VC are more likely to attract further funding from investors on equity crowdfunding platforms.

- **Hypothesis 4a (The Venture with Established Angel Investors Hypothesis).** Ventures that have already attracted funding from established angel investors would be more likely to successfully raise funding in online equity crowdfunding campaigns.
- **Hypothesis 4b (The Venture with Professional Venture Capital Firms Investors Hypothesis).** Ventures that have already attracted funding from professional venture capital firms would be more likely to successfully raise funding in online equity crowdfunding campaigns.

Characteristics of the entrepreneur have been shown to be an important screening factor for angel and VC investors (Chen et al., 2009). For example, prior research has noted the importance of entrepreneurial passion and determination as well as trustworthiness in successful venture fundraising (Murnieks et al., 2016). Entrepreneurs that do not show passion and determination

undermine investor confidence that the entrepreneur can overcome the many challenges faced in shepherding a venture to success and then an exit. Investors also want to feel that the entrepreneur will be a trustworthy steward of any money invested (Maxwell et al., 2011). Entrepreneurs may find it challenging to communicate their various positive characteristics to investors in a computer-mediated context. Prior research in reward-based crowdfunding has shown that video is an important communication tool in computer-mediated communication (Mollick, 2014). We expect that successful entrepreneurs will make use of video in communicating with potential investors in equity crowdfunding platforms.

- **Hypothesis 5a (The Project Descriptions Video Hypothesis).** Ventures that use video in their project descriptions will be more likely to successfully raise funding in online equity crowdfunding campaigns.
- **Hypothesis 5b (The Project Founders Video Hypothesis).** Ventures that use video featuring the founders in their project descriptions will be more likely to successfully raise funding in online equity crowdfunding campaigns.

4. Data and methodology

We obtained the dataset for our study by collecting project-level details across sixteen known Title III equity crowdfunding platforms. We acquired project descriptions as well as the information about the amount of capital sought and funds committed by the investors to each project. Appendix 2 provides a summary of the number of projects and total capital commitments for each of the platforms in our dataset.

Project success is the dependent variable in our study. Following the accepted practice (Ahlers et al., 2015), we defined *project success* as a venture raising the minimum amount of capital that was sought. 69 of 133 (51.9%) projects in our dataset were successful in achieving their funding goals.

We engaged two graduate assistants with experience in entrepreneurship and equity crowdfunding to review the project descriptions and code the data. The coders met with the authors to resolve coding differences. Table 3 summarizes the independent variable and co-variate coding schema and it also provides the descriptive statistics for the data in our study.

Table 3
Variable coding schema and descriptive statistics.

| Variable name/Coding schema | Descriptive statistics |
|---|---|
| Single_entrepreneur | 21.8% of ventures were led by a single entrepreneur |
| Industry_experience | 95.5% of ventures had founders with experience in target industry |
| Serial_entrepreneur. At least one founder had prior entrepreneurial experience. | 9% of ventures were led by serial entrepreneurs |
| Team_size. Number people in venture. | Min = 1; max = 22; average = 3.9; st. dev = 2.5 |
| Venture_stage | Idea = 5; beta = 65; product = 63 |
| Angel_investors | 19.5% of ventures received funding from pro angel investors |
| VC_investment | 18% ventures received funding from VC investors |
| Video | 84.9% of the venture funding solicitations included a video |
| Entrepreneur_video | 60.15% of solicitations included a video featuring the founder(s) |
| Patents_issued | 12.8% of ventures had obtained patents |
| Minimum issue amount | Min: \$10,000; max: \$15 mil; average: \$349,307; most common value: \$100,000; st. dev.: \$1.3 mil |

To assess the effects of the independent variables on project equity crowdfunding success we ran a series of logistic regression models. We relied on SPSS Version 22 to conduct the analysis. In the next section, we discuss the results.

5. Results

The results of our research are summarized in Table 4 below.

In the first step of our analysis, we examined the separate effects of market, execution, agency and computer-mediation on the likelihood of venture success in raising funding in online Title III equity crowdfunding platforms.

Focusing on the market risks, we found that the company development stage had an effect on the success of a crowdfunding campaign. Companies in the beta/prototype stage were less likely to raise funding (43.1% success rate) than companies that completed product development (65.1% success rate). None of the companies in the “idea” stage were successful in raising the full target amount. We also found a significant positive effect of a company having corporate clients in its portfolio. 70.3% of B2B companies with existing clients were successful in raising the full target amount, whereas only 44.2% of the B2B companies with no mention of existing clients were successful in raising the full amount. These results lend support for the Completed Product or Service Development Hypothesis (H1a) and the Ventures with Large Corporate Clients Hypothesis (H1b). Although 12.9% of the companies in our dataset held patents, we found no statistically significant

effects of the patents on the likelihood of successful equity crowdfunding. The Ventures Holding Patents Hypothesis (H2) was not supported.

Focusing on the execution risks, we found a negative effect for single-entrepreneur led ventures and a positive effect for the size of the entrepreneurial team. Single entrepreneurs were successful in raising the full amount 47.1% of the time, whereas larger entrepreneurial teams succeeded in 69% of the campaigns. These results provide support for the Single Entrepreneur Hypothesis (H3a) and the Larger Entrepreneurial Teams Hypothesis (H3d). We found no support for the effects of prior industry experience or serial entrepreneurial experience on the success of equity crowdfunding in our data. The Serial Entrepreneur Hypothesis (H3b) and the Experienced Entrepreneur Hypothesis (H3c) were not supported.

Next, we examined the effects of professional investor involvement in the mitigation of agency risks that commonly exist in early-stage ventures. We found that when examined individually, both professional angel investor involvement and venture capitalist participation had a positive effect on the success in equity crowdfunding, however only VC participation was positively correlated with the likelihood of success in the model that included both factors. 80.8% of ventures with well-known angel investors and 91.7% of the VC-backed ventures were successful in their equity crowdfunding campaigns, compared to 42.6% success rate for ventures with no angel or VC backing. The results provide support for the Venture with Established Angel Investors Hypothesis (H4a) and the Venture with Professional Venture Capital Firms Investors Hypothesis (H4b).

Finally, we assessed the full model that included market, execution and agency risks as well as the use of video to communicate with the potential investors in equity crowdfunding platforms. We found that in the full model the company stage, the size of the entrepreneurial team, professional angel investor, and VC involvement retained their effects on the success of equity crowdfunding under Title III. These results remain significant after controlling for the size of the investment required by the companies and the month when the fundraising campaign was launched. Those who want to see the detailed statistics from the study can find them in Appendix 1.

6. Discussion and implications

6.1. Discussion

In this study, we argued that less sophisticated non-accredited investors in Title III equity crowdfunding platforms would follow the more sophisticated investors’ lead. We drew on the risk capital framework and we evaluated the effects of market, execution and agency risks that are commonly considered by professional angel investors in traditional offline investments. Our results show that all three types of risks have an effect on the likelihood of a successful equity crowdfunding campaign in online Title III equity crowdfunding platforms. However, not all variables that we examined had an effect.

In terms of market risks, we found that ventures that progressed to the product/service stage were more likely to be successful in raising funding in Title III platforms. 65.1% of the ventures in the product/service stage were successful, whereas only 43.1% of the ventures in the beta/prototype stage were successful. None of the five ventures in the idea stage was successful in achieving the funding goal. These results indicate that investors in Title III platforms are willing to consider companies in the beta/prototype stage of development, however, the companies that progressed to the product/service stage are more likely to achieve their funding goals. We also found that while patents had no

Table 4
Supported and Unsupported Hypotheses.

| Supported Hypotheses | Results |
|--|---|
| H1a. The Completed Product or Service Development Hypothesis. Ventures that completed product or service development are more likely to raise funding in online equity crowdfunding campaigns than early-stage ventures (ideas or prototypes). | |
| H1b. The Ventures with Large Corporate Clients Hypothesis. Ventures that have large corporate clients are more likely to raise funding in online equity crowdfunding campaigns than ventures lacking such clients. | |
| H3a. The Single Entrepreneur Hypothesis. Single entrepreneurs are less likely to successfully raise funding in online equity crowdfunding campaigns than entrepreneurial teams comprised of 2 or more members. | |
| H3d. The Larger Entrepreneurial Teams Hypothesis. Larger entrepreneurial teams are more likely to successfully raise funding in online equity crowdfunding campaigns. | |
| H4a. The Venture with Established Angel Investors Hypothesis. Ventures that have already attracted funding from established angel investors would be more likely to successfully raise funding in online equity crowdfunding campaigns. | |
| H4b. The Venture with Professional Venture Capital Firms Investors Hypothesis. Ventures that have already attracted funding from professional venture capital firms would be more likely to successfully raise funding in online equity crowdfunding campaigns. | |
| Unsupported Hypotheses | Results |
| H2. The Venture Holding Patents Hypothesis. Ventures that hold patents are more likely to raise funding in online equity crowdfunding campaigns than ventures that do not have patents. | The venture holding a patent does not seem to matter to equity crowdfunding investors |
| H3b. The Serial Entrepreneur Hypothesis. Serial entrepreneurs are more likely to successfully raise funding in online equity crowdfunding campaigns. | Serial entrepreneurs do not appear to be more successful in equity crowdfunding |
| H3c. The Experienced Entrepreneur Hypothesis. Entrepreneurs with prior experience in the target industry are more likely to raise funding in online equity crowdfunding campaigns. | Experienced entrepreneurs do not appear to be more successful in equity crowdfunding |

Appendix 1

The effects of market, execution and agency risks in Title III equity crowdfunding.

| | Model 1: Market Risk | Model 2: Execution Risk | Model 3: Agency Risk | Full Model |
|------------------------------|----------------------|-------------------------|----------------------|------------|
| Company stage | | | | |
| Idea | ns | | | ns |
| Beta/prototype | −0.84* | | | −0.78* |
| Product | | | | |
| Corporate clients | 0.88* | | | 1.05* |
| Patents | ns | | | ns |
| Single entrepreneur | | −1.15* | | −1.26* |
| Serial entrepreneur | | ns | | ns |
| Industry experience | | ns | | ns |
| Team size | | 0.251* | | 0.25* |
| Angel investors | | | ns | 0.98* |
| VC investors | | | 2.3** | 2.14* |
| Video | | | | ns |
| Entrepreneur in video | | | | ns |
| ln(Min issue amount) | | | | −0.89*** |
| Campaign start month | | | | ns |
| −2 log likelihood | 164.2 | 168.2 | 158 | 113.2 |
| Cox and Snell R ² | 0.14 | 0.106 | 0.178 | 0.408 |
| Nagelkerke R ² | 0.19 | 0.141 | 0.238 | 0.537 |

Unobserved project-level heterogeneity is a common concern in panel data analysis (Mood, 2010). To assess the potential effects of unobserved heterogeneity we reanalyzed the full model using the mixed logit technique which accounts for the potential subpopulations in the data (Hensher and Greene, 2003). The results of the mixed logit model affirmed the effects of the company stage, corporate clients, entrepreneurial team size and single entrepreneur led ventures as well the involvement of professional angel investors and venture capitalists on the success of equity crowdfunding under Title III.

* $p < .05$.** $p < .01$.**Appendix 2**

Title III equity crowdfunding platforms.

| Platform | Number of projects | Total capital commitments |
|---------------------------------|--------------------|---------------------------|
| Crowdsourcedfunded | 2 | 0 |
| Crudefund.com | 1 | 112,950 |
| Dreamfunded.vc | 1 | 0 |
| Flashfund.com | 8 | 138,188 |
| iBankers | 2 | 0 |
| Jumpstartmicro | 4 | 5,200 |
| Localstake | 1 | 14,000 |
| Netcapital | 2 | 13,925 |
| Nextseed.co | 7 | 1,295,400 |
| Republic | 4 | 185,502 |
| Seedinvest.com | 5 | 291,613 |
| Startengine.com | 17 | 1,318,732 |
| Trucrowd | 5 | 37,333 |
| uFundingportal | 18 | 30 |
| Centure.co | 4 | 46,002 |
| Wefunder | 43 | 7,857,725 |

statistically significant effect on the likelihood of success, market traction evidenced in a company having corporate customers had a significant positive effect. 70.3% of companies that had corporate customers were successful in raising funding in Title III platforms that we examined.

Focusing on the execution risk, we found that single entrepreneur ventures were successful 47.1% of the time in reaching the funding goal, whereas ventures with entrepreneurial teams were successful 69% of the time. The importance of entrepreneurial teams versus single entrepreneurs is consistent with the insights from research on angel investor decision making (Carpentier and Suret, 2015; Sudek, 2006), however, we found no support for prior entrepreneurial experience or industry experience effects on investment decisions.

In our evaluation of agency risks in Title III crowdfunding, we focused on whether engagement of professional angel investors and/or venture capitalists is associated with a higher probability of successful equity crowdfunding. We found that both angel investor and VC participation had significant effects. 80.8% of ventures that received funding from a prominent angel investor prior to soliciting funding via equity crowdfunding were successful.

91.7% of companies that received funding from a venture capital firm prior to the engagement in equity crowdfunding platforms were successful in hitting their funding targets.

We also examined whether the use of video could help entrepreneurs overcome the challenges of communicating their passion and commitment to the success of the ventures to potential investors. Contrary to results from reward-based crowdfunding (Mollick, 2014), we found no effect for the use of video in investment solicitations.

To evaluate the robustness of our model, we examined the effect of incorporating the funding goal amount and the month in which the equity crowdfunding campaign was launched on the likelihood of crowdfunding success as covariates in our model. The effects of the key variables in our model remained significant after the addition of these covariates to the model. Consistent with prior research in equity crowdfunding (Vismara, 2016a), we found a negative effect of the funding goal amount on the likelihood of a campaign's success in our data. Further examination of the data revealed that 46 of 133 ventures (35.4%) sought to raise less than \$100,000 and 70% of these ventures were successful in raising the target capital. Whereas ventures seeking more than \$500,000 were successful only 33.4% of the time, and none of the ventures that sought to raise over \$1 million was successful.

In aggregate, our results suggest that investors in Title III crowdfunding platforms generally share their approach to potential investment evaluation with professional angel investors (Mamonov and Malaga, in press). We find that investors in these platforms are perceptive to market, execution and agency risks. The investors prefer to fund companies that are headed by entrepreneurial teams (as opposed to a single entrepreneur). The investors also prefer companies that completed product or service development and are showing market traction by signing corporate customers. Our results also indicate that investors in Title III equity crowdfunding platforms are looking for external validation of the ventures seeking funding and management of agency risks in the form of traditional angel investor or VC involvement. These results imply that although Title III platforms are aimed at the less sophisticated non-accredited investors, the apparent patterns of investor decision making suggest that sophisticated investors play a key role in influencing the success of individual campaigns.

6.2. Practical implications

Our study makes a number of contributions to both theory and practice. Our findings have practical implications for entrepreneurs and as well as the broader fintech ecosystem (operators of crowdfunding platforms, policy makers, regulators, etc.). The empirical insights emergent from our study suggest that Title III equity crowdfunding platforms can be a source of early capital for entrepreneurial ventures, however the amount of available capital tends to be relatively low – less than \$1 million, and more commonly, less than \$300,000. Given the relatively low amount of capital that can be raised in Title III platforms, these platforms are likely to be supplementary sources of funding for entrepreneurs. In other words, entrepreneurs seeking seed (typically \$500,000 – \$1 million) or series A (typically \$1–\$5 million) funding, would likely need to engage with traditional angel investors as the primary source of funds and then possibly augment the fundraising via a Title III campaign.

These observations also have implications for the operators of the Title III equity crowdfunding platforms. Provided that, at least at the moment, Title III platforms would be unlikely to serve as a singular source of seed or series A funds for new ventures, the platforms would benefit from close alignment with established angel investors and early-stage venture capitalists in order to generate deal flow and sustain interest from potential non-accredited investors. As we already noted, WeFunder, the most successful platform in our dataset, emerged from Y Combinator, one of the best known venture accelerator programs that has a strong VC network (Lawler, 2013).

Equity crowdfunding remains a hotly debated policy topic and Title III has received a fair share of criticism for coming up short in solving the challenge of easier access to funding for entrepreneurial ventures while also assuring investor protection (Catalini et al., 2016; Siegel, 2013). The results of our study indicate that while Title III had a slower start compared to Title II (Mamonov et al., 2017), legislation has been adopted in practice and Title III equity crowdfunding platforms are gaining traction. These results illustrate that regulatory changes can spur novel entrepreneurial fundraising channels that leverage online platforms. Online equity-based crowdfunding has the promise of democratizing access to capital as well as access to investment opportunities and thus contribute to other developments in the Fintech Revolution (Kauffman et al., 2017).

6.3. Theoretical contributions

Our first theoretical contribution is the adoption of the risk capital framework that was developed in the offline context (Carpentier and Suret, 2015) for the analysis of factors that can affect online venture equity crowdfunding success. The risk capital framework complements signaling and social capital perspectives that have been applied in studies of equity crowdfunding (Ahlers et al., 2015; Vismara, 2016a). The risk perspective recognizes that understanding how investors evaluate potential investment opportunities is critical to entrepreneurs securing an investment. The risk perspective focuses on actual risk evaluation, whereas the signaling perspective addresses the question of how entrepreneurs can signal the fitness of their ventures to potential investors. Actual risks and what entrepreneurs may be able to signal to potential investors are distinct and therefore there is a need to understand the fundamental risks inherent to early-stage ventures and how these risks affect investment decision in equity crowdfunding.

Our second theoretical contribution stems from provision of empirical evidence that shows that investors in Title III equity crowdfunding platform share their approach to investment evaluation with traditional offline business angel investors. These

results suggest that while the Title III goal was to open access to early-stage venture investments to non-accredited investors, it is the sophisticated, and likely accredited, investors who play the critical role in venture fundraising success under Title III. These results contribute to the emerging stream of evidence on the importance of experts in equity crowdfunding decisions (Kim and Viswanathan, 2014) and suggest that such behavior may reflect rational herding (Zhang and Liu, 2012), wherein less sophisticated investors follow the lead of the more experienced business angels.

Our third theoretical contribution also stems from the implications of empirical results in our study. Our findings suggest that professional business angels are the key participants in the online equity crowdfunding platforms in the United States. The most successful equity crowdfunding platform in our dataset (WeFunder) emerged from Y Combinator and draws on its venture investor network to generate deal flow (Lawler, 2013). The investment opportunities offered on the platform tend to be high growth potential ventures. This is in contrast with successful equity crowdfunding platforms in other countries. Microbreweries, for example, have been a very successful category on Crowdcube in the UK (Evans, 2015), and farms offering delicious meet products have done well in equity crowdfunding in Australia (Guenther et al., 2017). The country and platform specific differences may account for the lack of evidence in support for venture related factors in some studies (Lukkarinen et al., 2016). Our results highlight the importance of accounting for country specific contextual factors that may influence equity crowdfunding success and also examining the success factors across different platforms within each country in order to identify generalizable patterns.

6.4. Opportunity for future research

The results of our study point to a number of opportunities for further research. While the capital risk framework has generally proven its value in the Title III equity crowdfunding context in that we found evidence supporting the effects of market, execution and agency risks in this context, not all factors that we evaluated showed statistically significant effects. We found no evidence to support the effects of ventures holding patents, entrepreneurial experience or serial entrepreneurship in our data. These variables are firmly established as consideration criteria in investment opportunity evaluation in traditional offline venture financing (Carpentier and Suret, 2015) and it would be important to examine the possible reasons why these factors maybe of lesser importance in the online equity crowdfunding platforms.

There are also further opportunities to research the nuances of the specific factors that we included in our study. For example, venture capitalists are known to syndicate their investments (Tian, 2011). This is typically done with the dual goal of improving the due diligence process by engaging additional VCs in investment opportunity evaluation (Casamatta and Haritchabalet, 2007) and engaging other VCs in supporting venture development following the investment (Tian, 2011). While we found no syndicated deals in our dataset, it would be important to examine how investment syndication can affect Title III equity crowdfunding success. Further, it would also be important to understand whether the mere act of an investment by a venture capitalist is sufficient to power a venture's success in equity crowdfunding, or whether it is the active engagement with the venture by a venture capitalist that ultimately propels an entrepreneurial firm to success. In a related vein of inquiry, it would be important to further explore the mechanisms underlying the effects of the size of the entrepreneurial team on the success in equity crowdfunding. Prior literature has noted that the size of entrepreneurial social networks can play a role in reward-based crowdfunding (Butticè et al., 2017;

Colombo et al., 2015). It would be of interest to examine whether the larger entrepreneurial teams are simply engaging a larger number of personal connections as potential investors or whether the potential investors are focusing on the complementarity of entrepreneurial team members' skills in making the investment decisions.

6.5. Concluding remarks

While we collected data across all known Title III equity crowdfunding platforms, our dataset contains only 133 venture listings. However, our dataset does reflect the historical information that is actually available to potential investors on Title III platforms and 64 of 133 (48.1%) ventures did not reach the full target amount affording us an opportunity to examine the factors associated with fundraising success under Title III. Further research will be needed to reevaluate the insights that emerged in our study as Title III platforms continue to develop.

In conclusion, in this study we sought to address the lack of knowledge on the success factors in equity crowdfunding open to non-accredited investors in the United States under Title III of the JOBS Act. We argued that because Title III platforms are open to both non-accredited and accredited investors, the accredited investors would lead the way and they would leverage established practices in investment evaluation by examining market, execution and agency risks associated with early-stage venture investments. We examined the role of these factors using a dataset collected across sixteen Title III equity crowdfunding platforms. Our results indicate that investors in Title III platforms are cognizant of market, execution and agency risks, but they are also selective in which factors they consider. We found that ventures started by teams of entrepreneurs, which progressed to product/service development, signed corporate clients, and received funding from professional investors were more likely to be successful in raising funding in Title III equity crowdfunding platforms. The results suggest that Title III platforms complement, rather than replace the professional investor funding for entrepreneurial ventures. These findings contribute to the ongoing polemic on the role of technology-enabled innovation and regulatory changes in the financial sector (Liu et al., 2015) and illustrate the potential of the equity crowdfunding platforms to democratize both venture financing and access to early stage venture investments.

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