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REGIONAL DETERMINANTS OF FIRM'S ENTRY IN THE CROWDFUNDING INDUSTRY

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ABSTRACT

The purpose of this dissertation is to better understand the regional determinants of firm`s entry in reward, donation, equity and lending segments of the emerging crowdfunding industry in EU-15 countries. We conducted a longitudinal analysis of firms operating a crowdfunding platform across 214 NUTS 2 regions, and studied their entry into the industry in period 2008-2015. Based on the literature stream of crowdfunding and the stream on entry to industry, we developed a framework and 10 hypotheses that were tested on the newly created research dataset, containing 1712 region-year observations. The estimates of a Negative Binomial model reveal that the population density is a significant predictor of regional entry in all 4 segments of the crowdfunding industry. Disposable income, financial firms operating in the region, and high crowdfunding`s field density are significant predictors of entry in the equity segment. The number of NGOs operating in social services area and the level of altruism among people in the region drive the entry in the donation segment. Firms' entry in the lending segment is negatively affected by stricter regulations, and positively affected by the increased use of social networks in the region. Conversely, social networks are found to negatively affect the entry of firms in the reward segment of the crowdfunding industry. Key contribution to the stream of the crowdfunding literature is that it represents an empirical and cross-regional study of crowdfunding intermediaries, from entrepreneurial point of view, i.e. it analyzes the firm`s entry at regional level in Europe. The main contribution to the literature stream on entry to industry is the cross-segmentation of our analysis - we analyzed the firms` entry with a respect to diverse segments in a single industry. We statistically prove that diverse segments could have different entry determinants, depending on the distinguishing characteristics of that identified segment, within an emerging industry.

Keywords: firm`s entry, crowdfunding industry, regional characteristics, rewards, donation, equity, lending, platforms, segment

ESRATTO

Il punto di partenza di questa tesi di laurea magistrale è stata la seguente domanda di ricerca: "in che modo le caratteristiche regionali influenzano l'ingresso di imprese nell'industria del crowdfunding nelle nazioni EU-15?". Lo scopo della tesi è quello di comprendere meglio i fattori regionali che determinano l'ingresso nel mercato di tali imprese e le differenze che esistono tra le regioni NUTS 2 sul numero di imprese che gesticono piattaforme di crowdfunding. Si vuole quindi fornire un framework di ricerca utile ad analizzare l'ingresso nel settore crowdfunding, diversificato in base ai diversi settori. Pertanto, abbiamo analizzato su scala regionale, anziché su scala nazionale, i driver che spingono nuove imprese di crowdfunding ad entrare in uno dei 4 segmenti dello specifico mercato (reward, donation, lending and equity). In questo modo, siamo stati in grado di comprendere meglio dal punto di vista imprenditoriale il fenomeno del crowdfunding, utilizzando come unità base di analisi l'ingresso delle imprese operanti nelle regioni EU-15 in un segmento del mercato crowdfunding.
In altre parole, lo scopo di questa tesi è stato quello di identificare i determinanti regionali e la loro influenza sull'entrata nel mercato emergente del crowdfunding nell'UE-15.

Per rispondere alla domanda di ricerca, abbiamo costruito 5 variabili dipendenti (4 come il numero dei segmenti di mercato e uno aggiuntivo per tener traccia del numero totale di ingressi nell'intero mercato crowdfunding), con lo scopo di contare il numero di ingressi di nuove società che gestiscono una piattaforma di crowdfunding all'interno di una regione geografica in un determinato anno. L'area geografica di riferimento è data dalla classificazione regionale NUTS 2, e di conseguenza la raccolta dei dati è stata effettuata per 214 regioni NUTS 2 all'interno dell'area UE-15 nel periodo 2007-2016. Dopo un'analisi iniziale, abbiamo deciso di concentrare la nostra analisi sul periodo 2008-2015, poiché prima del 2008 non si sono verificate entrate significative nel settore crowdfunding, ed i dati relativi al 2016 non sono ancora completi a causa di ritardo nella segnalazione di nuove entrate di aziende nel settore. In questo modo, abbiamo creato un database di dati di ricerca composto da 1712 osservazioni regione-anno (214 regioni in un periodo complessivo di 8 anni).
Il framework di ricerca che abbiamo sviluppato si basa su due principali branche della letteratura. In primo luogo, la letteratura sul crowdfunding che ci è stata utile per identificare i concetti teorici fondamentali che abbiamo incluso nell'analisi del settore crowdfunding dal punto di vista aziendale. In

secondo luogo, la letteratura sul processo di emersione del settore (tra cui la teoria istituzionale, economia evolutiva ed ecologia organizzativa) per identificare i driver potenziali che spingono all'ingresso nel settore emergente.

Basandoci su quanto appena descritto, abbiamo sviluppato 9 ipotesi di ricerca (e uno supplementare come parte della prova di robustezza) per testare l'influenza delle caratteristiche regionali sull'entrata di nuove aziende nei 4 segmenti dell'industria crowdfunding. Le 9 ipotesi sono classificate in 6 macro-categorie che possono influire positivamente o negativamente sull'ingresso delle imprese: la domanda e l'offerta di servizi crowdfunding, legislazioni, norme sociali e comportamenti, le piattaforme di crowdfunding esistenti (vale a dire competizione interne al mercato) e fornitori di servizi sostitutivi.

Per verificare le nostre ipotesi iniziali, abbiamo utilizzato 9 variabili esplicative (uno per ciascuna delle ipotesi iniziali) e 3 variabili di controllo, e sulla base delle 5 variabili dipendenti, sono stati costruiti 10 modelli statistici. A causa della natura delle nostre variabili dipendenti abbiamo scelto come modello statistico più appropriato la regressione binomiale negativa e svolto l'analisi nel pacchetto software IBM SPSS 23.

Per riassumere, i risultati delle nostre stime econometriche dimostrano che la maggior parte delle nostre ipotesi teoriche sono corrette, ma molte di esse sono verificate solo per alcuni specifici segmenti del mercato crowdfunding. Grazie a queste ipotesi siamo stati in grado di identificare e comprendere meglio i driver che influenzano la scelta del segmento di mercato crowdfunding specifico delle imprese europee. La densità di popolazione è risultato essere un principale determinante di entrata regionale nell'industria. Questo fattore è quindi una spiegazione logica del fatto che la maggior parte delle piattaforme di crowdfunding sono lanciate nelle grandi città europee come Londra, Berlino, Parigi, Milano e Monaco di Baviera.
Per quanto riguarda invece il segmento donation, un'intuizione molto interessante si trova nel fatto che le organizzazioni non governative che forniscono servizi sociali all'interno di una regione geografica stanno influenzando positivamente l'ingresso in questo segmento dell'industria crowdfunding. Inoltre, le regioni con un più elevato livello di altruismo e cura per il benessere degli abitanti nei loro dintorni hanno maggiori probabilità di avere il più alto tasso di entrata di piattaforme di donation.

Risultati piuttosto inattesi sono stati ottenuti nel segmento reward dell'industria crowdfunding. È infatti emerso che le regioni NUTS 2 con maggiore utilizzo di social network hanno un ridotto numero di iscrizioni nel segmento reward. Tuttavia, questo risultato deve essere attentamente valutato in quanto potrebbe essere alterato dal metodo utilizzato per il trattamento dei dati mancanti.

L'ingresso di aziende che operano piattaforme di equity crowdfunding è più frequente in regioni economicamente più ricche, con più alto reddito pro capite, con un settore finanziario ben sviluppato e con un'alta densità nel campo crowdfunding. È inoltre interessante notare come norme più rigide non impediscono l'entrata di nuove piattaforme equity, a differenze del caso di piattaforme lending il cui accesso è significativamente diminuito dopo l'introduzione di atti normativi più severi per il settore crowdfunding. D'altra parte, l'ingresso di nuove imprese operanti nel segmento lending è positivamente influenzato da un elevato utilizzo di social network tra gli abitanti di una regione.

Parole Chiave: ingresso delle imprese, industria del crowdfunding, caratteristiche regionali, rewards, donation, equity, lending, piattaforma, segmento

1. CHAPTER 1 – INTRODUCTION

Crowdfunding is a collective action for collecting small amounts of money from a large number of people to finance some type of project or cause. One of the first documented crowdfunding campaigns occurred in the XIX century and was started by Joseph Pulitzer to financially support the construction of the Statue of Liberty (Brüntje & Ganja, 2015). Collective actions were used for centuries by charity organizations, as the primary mechanism for their fundraising activities.

However, crowdfunding has gained a lot of hype and traction over the last years, with the big success of online platforms like Kickstarter and Indiegogo. Crowdfunding has become a major alternative to the traditional funding methods for backing up social, artistic, or new business venture projects, that need capital and is very difficult to access it through financial institutions. The advancements in the Internet technologies and the dispersed use of the Web in everyday life have allowed people to discover new ways to meet their needs, and individuals have started to become more interconnected to each other. As a consequence of all these developments, the concept of crowdfunding was reinvented and emerged in its current shape. Crowdfunding is a new way of financing individual projects or providing new ventures with startup capital by a large crowd of individuals through the internet, usually using a dedicated platform, without any financial intermediaries (Mollick, 2014). Although the crowdfunding phenomenon was considered as a breakthrough at the beginning of this century, it is becoming as much used as traditional financing methods.

Typically, three main actors are involved in the crowdfunding process. The first ones are the project initiators (campaign creators) who look for funds for their projects, the second ones are the project backers (money providers) who fund the projects, and the third actor is the crowdfunding platform which acts as an intermediary between the two parties, and enable the interaction between them (Belleflamme et al., 2014).

Crowdfunding has recently attracted the interest of a growing number of scholars. Most academic studies on this topic focus on the determinants of success of crowdfunding campaign (Colombo et al., 2015; Guidici et al., 2013). Another vast stream of literature is focused on project backers and studies the motives for providing capital (Cholakova & Clarysse, 2015), the importance of social networks (Lin

et al., 2009), the signals in crowdfunding transactions (Molick, 2013). Then, a smaller stream of literature focuses on crowdfunding platforms and provides classifications of crowdfunding intermediaries (Hass et al., 2014) or explores platform`s growth and competitive positioning (Doshi, 2014). As this stream is less covered in the academic field, we decided to enrich it. To do so, we take a closer look at the European crowdfunding industry, we focus on the firms that operate online crowdfunding platforms (i.e. constitute the industry) and explore the determinants of their entry in the industry. Specifically, our main research question is: *"How do the regional characteristics influence the entry of firms in crowdfunding industry in EU-15 countries?"* In so doing, we contribute to the existing literature because, while most of the extant studies take into consideration one national market, we look at a wider geographical area (EU-15 countries) but, at the same time, try to capture regional differences in the behavior of firms entering the crowdfunding industry.

In order to adequately answer the above research question, we relied on two main literature areas- literature on crowdfunding and literature on industry emergence, more specifically entry in the industry literature. Relying on this theory, we derived 9 initial research hypotheses that summarized our assumptions on the effects of demand, supply, regulations, social values, social behaviors, firm density, substitute service providers. Later, in robustness test we added another hypothesis to better analyze the actual effect of firm density.

To test these hypotheses, we have used a unique, hand-constructed dataset that gathers information on entry of firms operating some type of crowdfunding platforms in one of the EU-15 countries until the end of 2015. The platforms may operate in 4 segments of the crowdfunding industry depending on their business model: reward segment, donation segment, equity segment and lending segment. So, we wanted to determine the specific drivers of firm`s entry to emerging crowdfunding industry in each of these 4 segments.

In the empirical part of the dissertation, we considered as the geographical unit of analysis the NUTS 2 regional classification, and collected data on firms entered in the 214 EU-15 NUT[1] S 2 regions in the period before 2007 until the end of 2015. As before 2008 entry in the crowdfunding industry was negligible, we focused our empirical analysis on the period 2008-2015, research sample included 1712 region-year observations, which was used to perform our statistical analysis. The estimates of a Negative Binomial model reveal that the population density is a significant predictor of regional entry in all 4 segments of crowdfunding industry. Disposable income, financial firms operating in the region, and firm density are significant predictors of entry in the equity segment. The number of NGOs operating in social services area and the level of altruism among people in the region drive the entry in the donation segment. Firms' entry in the lending segment is negatively affected by stricter regulations, and positively affected by the increased use of social networks in the region. Conversely, social networks are found to negatively affect the entry of firms in the reward segment of the crowdfunding industry.

This master dissertation provides multiple contributions to the extant literature on crowdfunding. First, while most scholars studying crowdfunding have focused on the campaigns, the project backers and project initiators, our study shifts the focus on the firms operating crowdfunding platforms. Second, while most studies on crowdfunding are focused on one type of platform or a single geographical territory, here we consider all crowdfunding types on cross-country and cross-regional level, adding to both depth and width of some of the previous studies. Third, despite there is a vast literature on crowdfunding in USA, more empirical studies are needed on Europe, as there are numerous differences between two markets. Therefore, our empirical study contributes to the better understanding of crowdfunding platforms lifecycle and European industry in general. Additionally, it identifies the specific drivers of entry to crowdfunding industry, enabled through the creation of research framework that is used as a starting research point. Finally, the dataset used to test our econometrical models is a unique dataset that was created originally by the Entrepreneurship, Finance and Innovation research group at

[1] The NUTS (Nomenclature of territorial units for statistics) classification is a geocode standard for referencing the subdivisions of countries and a hierarchical system for dividing up the economic territory of the EU for statistical purposes. The current NUTS 2013 classification is valid since 1 January 2015 and lists 98 regions at NUTS 1, 276 regions at NUTS 2 and 1342 regions at NUTS 3 level. The NUTS 2 classification is selected as the regions included are usually the basic regions for the application of regional policies, and often (but not always) the administrative regions within a single country. Furthermore, they are geographically and demographically large enough, usually ranging between 800.000 – 3 M of inhabitants, to conduct sound statistical analyses.

the Department of Management, Economics and Industrial Engineering of Politecnico di Milano, but updated in the 2015 by authors during the course of academic 2015/2016 year.

Besides contributing to the crowdfunding literature, our study also contributes to the literature on industry emergence, and more specifically firm`s entry into the emerging industry. We shift focus from investigating entry into a single industry to more detailed level of analysis- single industry`s segments, as we consider that industry is too broadly defined concept. Our proposed approach is that depending on the distinguishing characteristics of the identified segment within a single industry, firms` entry will be affected by different entry determinants. Our idea was to distinguish between segments from a single industry and identifying /analyzing specific entry drivers into each segment. In this way, it is possible to obtain more insights on the determinants of entry in emerging industry, in our opinion.

The dissertation is organized in 6 chapters. After this introduction, literature review follows, that has two main subchapters- literature review on crowdfunding and literature review on entry in the emergent industry. In chapter 3, we explain the logic behind our assumptions and set out our research framework and hypotheses. The fourth chapter describes the data collection process, variables and models used as well as the methodology of econometric analysis to test the hypotheses. In chapter 5, the results of the econometric analysis are displayed and discussed. Finally, chapter 6 concludes the dissertation with a discussion of its key insights, contribution to theory, limitations and future research directions.

2. CHAPTER 2 – LITERATURE REVIEW

2.1 Literature review of crowdfunding research area

2.1.1. Process of identification of papers

To search for papers on crowdfunding, we used the keyword search method. Specifically, we searched for papers in the Scopus Database that included in the title or in the abstract these following keywords: ''crowdfunding'' and "crowd-funding" and "crowd funding". We considered only papers published since 2006. Because before 2006, the term crowdfunding was not well defined. This hypothesis is confirmed as only minority of total articles found with the keyword "crowdfunding" search was published in 2006 and 2007.

In total 300 article`s abstracts on crowdfunding were downloaded and read as a starting point of literature review. Then, according to the relevance for the topic (main topic of the paper is crowdfunding), the core set of 40 articles was developed. These 40 articles were downloaded and read, and their references were examined in order to find additional papers that we could include in literature review. 17 additional scientific papers and 4 online articles were included in the core set, totaling to 61 articles used for writing this literature review. A first group of papers provides definitions of the term crowdfunding and describes the actors involved in crowdfunding process. The papers in second group explain the types of platforms, their business models and categorization. In the third group the evolution of crowdfunding from historical perspective, enabling factors of industry creation and current industry trends were elaborated. And the forth group of papers is dealing with the main research topics covered by prominent scholars in crowdfunding area. In the following parts, each of the group is elaborated further focusing on key theoretical arguments proposed.

2.1.2. Crowdfunding definition

From the theoretical standpoint, crowdfunding is originated from crowdsourcing. Latter, this term was firstly introduced by Howe (2006). Crowdsourcing refers to an open call for contributions from members of the crowd to solve a problem or carry out human intelligence tasks, often in exchange for micro-payments, social recognition, or entertainment value (Brabham, 2013). If we include the ICT component in the definition, crowdsourcing can be described as outsourcing of various tasks to an

undefined group of people using information technologies (Blohm et al., 2013). Companies use it as a way of developing new ideas and innovations by including customers' needs and requests in the innovation process (Chesbrough, 2006). Crowdsourcing approaches often aim to benefit from the wisdom of the crowd – the collective opinion of a group of individuals rather than that of a single expert (Surowiecki, 2004). Also it is a form of collective intelligence- defined as shared or group intelligence that emerges from the collaboration, collective efforts, and competition of many individuals (Leimeister, 2010; Kazai, 2011).

In crowdfunding, the crowd provides the project owner with money through the crowdfunding platform, while in crowdsourcing, the project owner pays money or other remuneration to the crowd for their non-financial contributions. The following table reports the definitions of crowdfunding from different authors:

Table 1: The definitions of crowdfunding by scholars

AUTHORS	CROWDFUNDING DEFINITIONS	MISSING ASPECTS
Kappel (2008)	*"Crowdfunding is the act of informally generating and distributing funds, usually online, by groups of people for specific social, personal, entertainment or other purposes".*	• The expectations of the funders
Larralde & Schwienbacher (2010)	*"Crowdfunding is an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes.''.*	• The expectations of the funders
Rubinton (2011)	*"The process of one party progressing towards a goal by requesting and receiving small contributions from many parties in exchange for a form of value to those parties."*	• The importance of social media and internet

De Buysere et al. (2012)	*"Crowdfunding can be defined as a collective effort of many individuals who network and pool their resources to support efforts initiated by other people or organizations. This is usually done via or with the help of the Internet. Individual projects and businesses are financed with small contributions from a large number of individuals, allowing innovators, entrepreneurs and business owners to utilize their social networks to raise capital."*	• The definition stays within the boundaries of entrepreneurial perspective. Indeed, the scope of crowdfunding goes far beyond the entrepreneurship.
Steinberg (2012)	*"Crowdfunding is the process of asking the general public for donations that provide startup capital for new ventures."*	• The importance of social media and internet and focused only on entrepreneurial perspective
Lebraty & Lobre-Lebraty (2013)	*"Crowdfunding can be defined as a resource allowing a project initiator to obtain financing from Internet users."*	• The expectations of the funders
Belleflamme et al. (2013)	*"Crowdfunding involves an open call, mostly through the Internet, for the provision of financial resources either in the form of donation or in exchange for the future product or some form of reward to support initiatives for specific purposes."*	• The definition explains donation and rewards-based crowdfunding, but fails in considering equity-based crowdfunding
Marom & Sade (2014)	*"Crowdfunding is an innovative funding mechanism which leverages the internet and social networks in order to raise funds from a large number of investors, usually raising small amounts from each investor."*	• The expectations of the funders
Mollick (2014)	*"Crowdfunding refers to the efforts by entrepreneurial individuals and groups – cultural, social, and for-profit – to fund their ventures by drawing on relatively small contributions from a relatively large*	• The expectations of the funders

	number of individuals using the internet, without standard financial intermediaries".	
Belleflamme et al. (2014)	*"The basic idea of crowdfunding is to raise external finance from a large audience (the "crowd"), where each individual provides a very small amount, instead of soliciting a small group of sophisticated investors"*	• The importance of social media and internet

Relying on Table 1, we can describe crowdfunding process as follows. The initiator or creator of the idea/project presents his/her idea via Internet to a crowd of potential funders in a written form with supportive audio/video contents. The idea should be able to attract the attention of the potential funders and convince them to make financial pledges. Project funders, based on the type of fundraising campaign and their belief in appeal and quality of the idea, the promises made by the initiator or the expectation of a return, can donate, pre-purchase products, lend or invest.

The ideas can be presented to the crowd by using an intermediary crowdfunding platform. For the purpose of raising awareness of the idea and its open call on a particular platform, the content of the idea can be posted and spread online through dedicated social networks such as Facebook, Twitter, YouTube, LinkedIn, as well as through other internet based marketing tools such as DEM (direct e-mail marketing) etc. The fundraising campaign has usually limited timeframe at which potential funders can pledge funds and the total amount pledged by funders can be usually seen on the crowdfunding platform. Platforms take commissions including transaction handling costs from the projects that successfully raise funds.

2.1.3. Key Actors in Crowdfunding

Typically, the players involved in crowdfunding are the project initiators/creators who look for funds for their projects, the backers/funders who funds projects, and the crowdfunding platforms acting as intermediaries (Belleflamme et al., 2014).

2.1.3.1. Project Initiators

The project initiator is the person, team or organization who launches the fundraising campaign on a crowdfunding platform for a particular purpose. The project initiator could be an entrepreneur who wants to start up his/her own business or wants to test an idea to see whether it would take the attention of public, an artist who is seeking funding for his digital studio record from a crowd of fans, a sport athlete who is looking for sponsorship to participate in a competition etc. They basically use crowdfunding in order to have access to funding from a pool of crowd funder. Another important reason is to see the feedbacks on the idea whether it is feasible or not.

2.1.3.2. Backers

The backer or campaign supporter is the individual, team, organization who pledges to financially support a crowdfunding initiative. Depending upon the type of crowdfunding model, the backer may expect to get no tangible return, a product, the return of their investment with interest, or an equity ownership and they are referred to as a donor, funder, lender, equity investor, pre-purchaser etc.

Many scholars have investigated backers' behaviors and motives. It has been shown that backers watch the other backers' decisions and get influenced by the behavior of other backers (Gierczak et al., 2016). Project initiators' family and friends are often an important portion of backers in crowdfunding projects (Agrawal et al., 2011). Additionally, backers could be motivated to support projects to which they have an emotional relationship, projects with which they are familiar, or projects that are initiated by somebody they have a friendship identification with (Agrawal et al., 2011). Another motive for supporting a project is the geographical proximity between project initiator and backers (Lin et al., 2013).

2.1.3.3. Crowdfunding Platform

The crowdfunding platform is the internet-based intermediary bringing project initiators and backers together at one place. Project initiators use the platform to display a campaign idea with the necessary information, such as a detailed project description usually with a multimedia content, the benefits of the project, pledging options for backers, length of the project on the platform, founder, etc. All platforms aim at pooling relatively modest contributions from a large crowd of potential contributors to finance a fundraising initiative. They either charge a percentage based-commission on the amount raised or charge fixed fees (Micic, 2015). The main objective of the platforms is to take attention of both initiators

and backers to help them make it real. Platform creators can decide the layout of the platform and its position in the crowdfunding market; the crowdfunding model used, the level of information provided, the rules and regulations adopted etc. (Agrawal et al., 2013).

Crowdfunding platforms are peculiar financial intermediaries. In contrast to traditional intermediaries, they do not borrow, pool, and lend money on their own account. They focus on the matching of project initiators and backers. Depending upon the type of model, the platforms have a particular type of funding mechanism, such as pledge levels, minimum pledge amounts, funding principle (Mollick, 2014). In case of pledge levels which are defined by project initiator, there is a certain return for each pledge and the return increases with the increasing pledge amounts (e.g. Thank you message for 5€, or a digital record or poster for 10 € etc.). Differently from the previous mechanism, the minimum level of pledge shows the lowest possible amount which can be pledged by backers. The minimum level of pledge differs widely depending upon the type of the fundraising project. While minimum pledge level for charity projects is not so high, it is considerably high in case of start-up funding.

Particularly, in Rewards-based crowdfunding campaigns explained in the following part, two different funding models are offered in one of two models: "Keep-It-All" and "All-Or-Nothing". In "Keep-it-All" funding model, a fundraising target is set and the entire amount raised during the campaign is kept regardless of whether or not they meet their goal while in "All-or-Nothing" funding model, again a fundraising target is set but nothing is kept unless the goal is achieved. "All-or-Nothing" model provides a credible signal to the crowd that the project initiator commits not to undertake the project if not enough money is raised. That means less risk to the crowd. Through this model of funding, projects raising more money and be more likely to reach their goal. In contrast, projects using "Keep-it-All" model tend to be less successful, since the crowd faces the risk that project initiator undertakes a project that is underfunded and therefore these projects are more likely to fail.

2.1.4. Crowdfunding Models

The literature has described main crowdfunding models based on the nature of the reward provided. The models are grouped in four different categories as rewards-based, donation-based, lending-based and equity-based.

2.1.4.1. Rewards-based crowdfunding

In the rewards-based model, project backers are offered "non-financial rewards" (Bannerman, 2012). The reward changes depending upon the type of initiative or project. As reward, for instance, one could have the chance to get the CD of a music band, to get a free concert ticket, or to meet with a music band to have coffee or dinner together by supporting their first or new album. Usually, the value of reward changes based on the degree of funding. This crowdfunding model is usually preferred when it comes to product designing, marketing and launching processes (Larralde &, Schwienbacher, 2010). Potential customers or funders are invited to presale or pre-order the product since they receive a beta version of a product (Hemer, 2011).

2.1.4.2. Donation-based crowdfunding

The donation-based model is used for crowdfunding projects having philanthropic purposes. The campaigns usually try to solve a social or an environmental problem such as poverty, drought etc. Project backers provide financial support without expecting any type of return (Bannerman, 2012). Donations are mainly made for social and charitable initiatives (Mollick, 2014). Donations can be made also for profit-oriented enterprises in addition to the requests of charities and nonprofit organizations (Bradford, 2012). In some cases, funders may get a symbolic return such as thank you or gratitude card etc. from the initiators of the project.

2.1.4.3. Lending-based crowdfunding

In this model, funders supply financial support to the crowd-lending campaigns for a pre-defined period of time and in return they expect from initiator to repay the funds with some interest. This type of crowdfunding can be seen as an evolution of the peer-to-peer model of lending (Pazowski & Czudec, 2014). Project initiators who look for debt-financing can present their crowdfunding initiatives to receive small amounts of the overall loan from a crowd of funders. Micro lending and social lending are examples in which small amounts of financial aid are collected and distributed by non-profit and social oriented platforms. The funds are collected from the backers and lent to the initiators under certain rules. The principle amount with its interest might be returned in a lump sum or some sort of payment schedule. Of course, the funders put their money at risk in case initiators cannot return.

2.1.4.4. Equity-based crowdfunding

In this model, broad groups of backers provide funds to start-up companies and small businesses in return for equity, revenue, or a share of the profits. So, funders can become owners of a certain percentage of the business by supporting it financially. Shares can give the crowd funders distribution of revenues and decision power (Hemer, 2011). The share or voting right varies proportional to the amount contributed. The more money invested, more shares or rights are given to the funders. Since equity investments are strongly affected by regulatory practices, other types of crowdfunding that bestows the funders with compensations other than equity have spread much more (Bannerman, 2013). Equity crowdfunding, through adaptation to new policies and regulations in crowdfunding industry, is becoming increasingly important (Kranacher, 2012). However, it may engender risks for project initiators because it could make them lose the control over their project (Agrawal et al., 2013).

Each model differs along 3 key dimensions. The first dimension is project initiators. Donation and rewards-based campaigns are mostly started by individuals, while equity and lending-based ones are usually started by entrepreneurs or startup teams seeking capital for their business venture. The second dimension is backers. The backers of donation-based campaigns are the individuals or the organizations who are aware of socio-cultural, environmental challenges. They have intrinsic and philanthropic goals to help them make the situation better. Similar concept implies for rewards-based campaigns, with a small difference that the individuals support the projects that they believe in, but not necessarily the projects oriented to solve socio-cultural, environmental etc. issues and the backers are offered a reward which is usually non-monetary, but usually material. Conversely, the backers of equity and lending-based campaigns are usually typical investors who expect to get some return out of the investment made regardless of the real purpose of the campaign. The reward for both equity and lending-based campaigns is monetary as primary motivation for backers. Additionally, the individual contribution from backer for project is usually much higher in equity and lending-based platforms. The third dimension is level of risk involved for the project funders. The level of risk in equity and lending-based platforms is considered to be medium to high. The amount of money invested in these two categories of crowdfunding is much higher than the amount of money donated or pledged in donation and rewards-based platforms. The project funders do not have always reliable information about the credibility of project initiators and are mainly over concentrated on the return of their investment, which

might lead to insufficient assessment. This poses high risks to the funders. Similarly, in rewards-based platforms, the funders are offered rewards not in form of money, but in form of material/non-material. Some project initiators tend to mislead funders by overpromising during the fundraising campaign. In case the project fails, funders lose their motivation and do not get any type of reward. The level of risk is not as high as in equity and lending-based platforms since the amount pledged is considerably lower. In donation-based platforms, the project funders do not receive any type of reward but any misappropriation of raised funds could therefore have demotivating effect on the funders' morale.

Figure 1: Main features of the crowdfunding phenomenon (Source: Archetypes of crowdfunding platforms: A Multidimensional Comparison, Florian Danmayr)

Therefore, platforms adopting different models can also be regarded as the segments of crowdfunding industry, i.e. reward, donation, equity and lending segments of crowdfunding industry.

2.1.5. Crowdfunding Industry and Trends

At the beginning of this century, crowdfunding was a novelty, as an alternative way to the traditional methods of financing and these days, crowdfunding campaigns are becoming as common as any of the other financing options. According to Massolution Crowdfunding Report (2015), the total funding volume in the global crowdfunding industry is projected to reach approximately $34.4 Billion in the end of 2015. Looking at this number by market segment, the largest segment of the industry with a projected $25.1 Billion in funding for 2015 is ''P2P Lending''. The reward and donation-based crowdfunding comes after ''P2P Lending'' as being the second largest segment of the industry with about $5.5 Billion in funding and equity-based crowdfunding comes in the third place with a projected $2.5 Billion in

funding. In terms of annual industry growth, Asian crowdfunding market is leading with 210% growth rate, followed by European and African crowdfunding markets with a growth rate of almost 100%.

One of the new trend observed in European crowdfunding industry is the consolidation of crowdfunding platforms. Although there is an increase in the number of platforms, the growth in identified platforms is slowing down. Platforms are merging to have a larger investor and project base instead of becoming rivals and splitting the opportunities. Another emerging trend is internationalization. Platforms are going international to expand both investor base and base of projects looking for funding. Cross-border crowdfunding activities usually happen in smaller EU member countries where markets are not large enough to ensure the sustainability of the platforms' activities. In terms of the new market segments, the campaigns are concentrated more on traditional and existing sectors where they can easily disintermediate the process of funding such as real estate campaigns. There is also a trend of increasing activity and interest in niche segments such as renewable and clean energy, student loans, and real estate.

''Il Crowdfunding in Italia'' report (Univesita Cattolica del Sacro Cuore, 2015) gives us a glimpse of how the situation is in Italian crowdfunding industry. An enormous increase in the total funding volume has been observed from €56.8 Million with an increase of 85% compared to €30.6 Million in 2014. With the new regulations by the Italian securities market regulator (CONSOB) in 2015 and 2016, the regulatory framework has been simplified and the costs of raising money through crowdfunding platforms have been reduced. These reforms on the regulations particularly remove the barriers on the further development of equity-based crowdfunding platforms since donation and rewards-based crowdfunding do not need to be licensed and are not subject to any regulations. Considering the new approach to alternative financing methods by people, the reforms on the regulations supporting the development of crowdfunding industry, the numbers reflecting what is going on in the market, Italy has still a great potential for crowdfunding.

2.1.6. Evolution of crowdfunding

Over the last years, crowdfunding has become a buzzword and gained popularity but actually it has been taking place in different forms for a long period of time. To start with, in 1885, when US government sources failed to provide funding to build a monumental base for the Statue of Liberty,

Joseph Pulitzer, at that time publisher of New York's newspaper ''World'', asked the citizens of New York to make a financial contribution. In return, he offered to print the name of each backer in the newspaper. This newspaper led-campaign attracted small donations from 160,000 donors and reached US$102,000 (Brüntje & Ganja, 2015). This is one of the early and clear example of collective initiative by a crowd of people. Additionally, communities alongside with NGOs and charities have been providing with humanitarian aid to third world countries for decades. However, this traditional form of collecting funds has been a burdensome process limiting the size of the crowd because it was required to go door to door in order to collect funds from the crowd. So, this was limiting the scope and reach of this funding method.

Modern crowdfunding is actually a new phenomenon since It has started to evolve with the emergence of Web 2.0. The development of Web 2.0 technologies within the past decade has enabled the evolution of new and innovative business models. This transformation to new and innovative business models requires whole industries to think and act differently - leading to a fundamental transformation from offline business models to digital ones. Crowdfunding has taken the modern form after this essential transformation from traditional to digital through Web 2.0. It first gained popularity in music communities where musicians could seek donations from their fans to produce digital recordings and to arrange concert tours with the money donated by their fans since traditional music studios were focusing on popular artists. The first modern crowdfunding incidence was in 1997, when fans underwrote an entire U.S. tour for the British rock group Marillion, raising US$60,000 in donations by means of a fan-based Internet campaign. Crowdfunding gained traction when Brian Camelio, a Boston musician and computer programmer, launched ArtistShare in 2003. ArtistShare's first crowdfunding project was American composer Maria Schneider's jazz album "Concert in a Garden." Through the campaign, she raised enough money to, pay her musicians, rent a large recording studio, and produce and market the album and sell it exclusively through the ArtistShare website. With her jazz album, she won the 2005 Grammy Award for best large jazz ensemble album. (Freedman & Nutting, 2015)

Crowdfunding gained traction after the successful launch of ArtistShare in 2003. More and more crowdfunding platforms started to appear on the internet. The most prominent of which were Indiegogo in 2008 and Kickstarter in 2009 in US. As explained before, majority of the crowdfunding

websites were focused on music and art communities in the beginning but later on, these websites also begun to host funding campaigns for social causes (animals, community, education, environment, health, politics, religion) and entrepreneurs and small businesses (food, sports, gaming, publishing, technology). Another factor that has a great impact on the acceleration of crowdfunding platforms is the use of social media and developments on web-based payments systems. Nowadays, the platforms use web-based payment systems (e.g. Amazon Payments) to facilitate the exchange of resources between entrepreneurs and supporters by using social media (e.g. Facebook) to raise awareness about the effort. (Hui et al., 2014).

2.1.7. Main research topics in the literature on Crowdfunding Industry

In this section, the most relevant articles on crowdfunding are listed and summarized. The articles are categorized based on three main perspectives, namely, Capital Seekers, Capital Providers and Intermediaries and their main research are reported and in the following table.

Table 2: Main Research Topics in Crowdfunding Industry

#	AUTHORS	MAIN RESEARCH TOPIC	CATEGORY
1.	Gerber & Hui (2014)	Motivations of capital seekers and capital providers for crowdfunding.	Capital Seekers-Motivations for crowdfunding
2.	Belleflamme et al. (2013)	Motivations of entrepreneurs to participate in crowdfunding and the individual practices and drivers of fundraising success	Capital Seekers- Motivations for Crowdfunding-Determinants of Success
3.	Colombo, M. G., Franzoni, C., & Rossi-Lamastra, C. (2015)	The effect of internal social capital and early contributions on the success of a crowdfunding campaign.	Capital Seekers-Determinants of Success
4.	Cumming, D. J., Leboeuf, G., & Schwienbacher, A. (2014)	The comparative analysis of two different crowdfunding models "Keep-It-All" vs. "All-Or-Nothing" in rewards-based platforms.	Capital Seekers-Determinants of Success

5.	Zvilichovsky, D., Inbar, Y., & Barzilay, O. (2015)	The effect of playing both sides of the market on the performance of crowdfunding campaign and the financing outcomes.	Capital Seekers- Determinants of Success
6.	Hekman, E., & Brussee, R. (2013)	The relation of the success of the campaign with the social network	Capital Seekers- Determinants of Success
7.	Giudici, Guerini, & Rossi-Lamastra (2013)	The role of internal and territorial social capital on the success of the crowdfunding project.	Capital Seekers- Determinants of Success
8.	Martin, T. (2012)	Analysis of JOBS Act with its benefits and risks.	Capital Seekers-Legal Framework
9.	Bradford, C. S. (2012)	The impacts of federal securities law on crowdfunding platforms and the possible outcomes that can come with the crowdfunding exemptions	Capital Seekers-Legal Framework
10.	Hazen, T. L. (2012)	The impact of JOBS Act on the crowdfunding platforms and the actors involved	Capital Seekers-Legal Framework
11.	Stemler (2013)-	The benefits that come with Jumpstart Our Business Startups (JOBS) Act	Capital Seekers-Legal Framework
12.	Cholakova, M., & Clarysse, B. (2015).	The role of financial and nonfinancial incentives on investors' willingness to pledge or invest for equity in crowdfunding projects	Capital Providers-The motives for capital providers
13.	Hildebrand, T., Puri, M., & Rocholl, J. (2016)	Analysis of adverse incentives of agents in crowdfunding market, particularly in online peer-to-peer lending and lending-based crowdfunding platforms.	Capital Providers-The motives for capital providers
14.	Lin, Boh, & Goh (2014)	The development of Archetypes of Crowd funders and Their Choice of Projects	Capital Providers-The motives for capital providers

15.	Kuppuswamy, V., & Bayus, B. L. (2015)	The analysis of backer dynamics and several factors including the impact of social networks	Capital Providers-Importance of social network
16.	Lin, Prabhala, & Viswanathan (2009)	The impact of relational network in peer-to-peer online lending market.	Capital Providers-Importance of social network
17.	Ahlers, G. K., Cumming, D., Günther, C., & Schweizer, D. (2015).	The impact of venture quality (human, social and intellectual capital) and uncertainty taken from the offering documents on fundraising success.	Capital Providers-Signals in crowdfunding transactions
18.	Mollick, E. (2013)	The comparative analysis of assessment of the quality of entrepreneurial ventures from two perspectives: Venture Capitalists (VCs) and crowdfunding backers.	Capital Providers-Signals in crowdfunding transactions
19.	Haas et al. (2014)	Empirical taxonomy of crowdfunding intermediaries; identification of three archetypes of crowdfunding platforms.	Intermediary Platform
20.	Wash & Solomon (2013)	Comparison of ''All-or-Nothing'' and ''Keep-it-All'' crowdfunding models	Intermediary Platform
21.	Doshi, A. (2014)	The analysis of platforms' growth and performance	Intermediary Platform

2.1.7.1. The literature reviews with a focus on capital seekers

First group of literature collected are focused on a couple of topics from the capital seeker's perspective such as the motivation of capital seeker for crowdfunding, the determinants of success of campaigns, the legal framework.

i. Motivations for crowdfunding

Gerber & Hui (2013) find out that people are motivated to participate in crowdfunding because of social interactions created through the platform. Project initiators can fortify their idea throug the feedbacks

received from funders. Another motivation mentioned is the feelings of connectedness that bring people who have similar interests or ideals together and that create a unified community around it. Similarly, Belleflamme et al. (2013) shows that individuals have the possibility to tailor their campaigns which they are not able to do so with other standardized platforms and to offer to the crowd active involvement in their initiative with a variety of financial or non-financial compensation.

ii. Determinants of Success

The determinants of successful crowdfunding projects have been investigated by a variety of scholars. Colombo et al. (2015) highlights that ''internal social capital'' and ''raising capital in the early days of the campaign ''are two key elements closely associated with the success of the crowdfunding project. The platforms provide social interactions and connections which are beneficial for capital seekers. Similarly, Guidici et al. (2013) focuses on social and territorial capital and demonstrates that internal social capital is positively correlated with the probability of success of a crowdfunding project. Conversely, there is no significant correlation with the territorial (locally shared) social capital.

Some authors, instead, concentrates on how their network impacts on the success of crowdfunding project. Zvilichovsky et al. (2015) studies the importance of playing in both sides (project initiator and project backer) of the market. The campaigns initiated by the entrepreneurs who have a previously backed other crowdfunding projects have significantly positive financing outcomes. More links and networks captured by being present in both sides of market could attract more backers to their campaign and help them pool more funding which leads to higher success rate of campaigns. The impact of online social network on the success of the campaigns was also analyzed by Hekman & Brussee (2013). They find out that diverse social networks are leading to the successful crowdfunding.

There is also an article from Cumming et al. (2014) with a special focus on the impact of two different models of rewards-based crowdfunding on the success of the campaign. The study shows that campaigns using ''All-or-Nothing'' model is much more likely to be successful in achieving the funding target compared to the ones using ''Keep-it-All'' model since it assures that the project will be not be started with low funding.

iii. Legal Framework

Some authors placed their focus on the legal side of crowdfunding in order to create a better legal framework both ensuring the investor protection and facilitating the way the securities are being sold. Bradford (2012) places his focus on the legal side and explains the impact of federal securities law on the crowdfunding platform. The author suggests that the exemptions on security laws would remove costly registration requirements for the small offerings including the sale of securities.

There are some papers with a special focus on the impact of JOBS Act on crowdfunding. According to Hazen (2012), while applying an exemption for crowdfunding, an appropriate compromise should be reached between the desire to encourage small business financing and the investor protection since the potential for fraud is increased with the coming of social media technologies. Martin (2012) mentions, in his study, about the increased risk of fraud and need of accreditation requirements. Despite the limitations of JOBs Act on the government's oversight on the market, economic benefits that come with crowdfunding outweigh. Likewise, Stemler (2013) underlines that the benefits and risks of JOBs Act on crowdfunding and its actors. This Act mainly opened the funding opportunity to countless entrepreneurs and small business by legalizing and facilitating the sale of securities and additionally gave chance to investors to diversify their portfolios. Despite all the benefits, crowdfunding comes with risks that changed the regulations quickly.

2.1.7.2.The literature reviews with a focus on capital providers

The second group of literature investigates the motives for capital providers, the importance of social network, the signals in crowdfunding transactions.

i. The motives for capital providers

To understand the motivations and drivers for crowd-funders, some authors attempted to explain some related topics. The study of Cholakova & Clarysse (2015) focuses on the effect of financial and non-financial incentives of funders on their decision to pledge or to invest in with a special attention to equity and rewards-based platforms rather than only focusing on the performance of campaigns. According to their study, bundling financial and non-financial incentives can be effective for the crowdfunding campaigns.

The archetypes of crowd funders have been examined by Lin et al. (2014). They identified four distinct type of crowd funders: Active Backers, Trend Followers, the Altruistic, and the Crowd. Each archetype has different motivations and strategies influencing their decision in funding. The active backers tend to actively back larger number of projects and have a broader interest as they invest in more than 7 crowdfunding categories. The trend followers prefer to follow flocks and back projects having smaller average fundraising target. The altruistic backers, on the other hand, prefer to back projects having significantly higher average fundraising goal. They are not driven by rewards, and appear to be less concerned about project risk and popularity. Finally, the backers in ''the Crowd'' category tend to be focused on rewards and is relatively risk adverse, backing projects with smaller goals.

Additionally, Hildebrand et al. (2016) concentrates specifically on lending-based crowdfunding platforms and reveals how adverse incentives of backers impact the interest rate and the default rate of the projects. Their study shows that, in presence of reward for the group leaders, they act strategically. Thus, in group leader bids, they create a wrong perception on the quality of an issue which result in lower interest rates but higher default rates. In absence of reward for the group leaders, these adverse incentives disappear, instead lower interest rates with lower default rates are observed.

ii. The importance of social networks

Social interations and networks among individuals can significantly impact the motivations of crowd-funders to pledge or to invest in crowdfunding projects. Lin et al. (2009) focuses on peer to peer lending platform and attempted to test the impact of social networks on the lending outcomes. The stronger and more verifiable relational network are found to be more associated with a higher probability of a project reaching its fundrasing target. According to Kuppuswamy & Bayus (2015), backers are inclined to support projects closer to their funding goals as they are more likely to succeed. In addition, Kuppuswamy & Bayus (2015) found out that the number of friends on online social networks which creates wider networking opoortunities are closely associated with the success of the projects.

iii. Signaling in Crowdfunding Transactions

There are certain signals that captial providers are searching for in every project before coming to the final decision to support. Ahlers et al. (2015) particularly focuses on equity crowdfunding platforms and explains the impacts of social, human and intellectual capital owned by entrepreneurial ventures on the

success of fundraising campaign. Retaining more equities and demonstrating more detailed information about the risks of project are effective signal for crowd-funders. Additionally, highly qualified board members and board structure can be interpreted as an effective signal to attract more funder.

Molick (2013) explains the way venture capitalists (VCs) and crowd backers assess the entrepreneurial ventures. Crowdfunding backers and VCs seem to be searching for the same signals such as history of successful project, third part endorsement, preparedness, geography and gender. They also highlighted in their study that crowd-funders seem to be less subject to gender and geographic biases compared with VCs.

2.1.7.3. The literature reviews with a focus on intermediaries

The intermediaries are important as much as capital seekers and providers to understand how crowdfunding phenomenon functions. Hass et al. (2014) attempted to classify crowdfunding intermediaries on the basis of two theories financial intermediation and two-sided markets. They developed a crowdfunding taxonomy which eases the understanding of how financial intermediation functions between capital giving and capital providing agents. Doshi (2014) studies platforms' growth and competitive positioning. Heterogeneous users have significant effect on the subsequent activities of the platforms. One of the most important findings in their results is that being aware of the relationship between a platform's growth, its regulations and the mix of its users are the key to grow and keep its position strong. The platforms compete with each other in order to attract superstar high performance sellers as they increase the transaction volume on the platform and the funding volume of other projects on a particular platform.

As previously discussed, the model chosen by site designer in a crowdfunding platform has distinctive outcomes. Wash & Solomon (2014) analyzed two crowdfunding models: the return rule ("All-or-Nothing") and the direct donation model ("Keep-it-All") and their study shows that the projects are much more likely to be fully funded as they are coordinated to achieve the fundraising target in platforms using ''Keep-it-All'' model.

2.2. Literature review of the industry emergence with focus on entry

2.2.1. Process of identification of relevant papers

The literature review process was conducted by using the keyword search method. We first identified a series of keywords related to industry entry namely: "entry", "emergence", "industry", "regional determinants". The keywords were used to search for papers that included them in the title or in the abstract. Search was performed using the Scopus database. After initial search, more than 3000 papers were found. Than search parameters were set to include only papers from 2000-2016 from the area of Social Sciences and Humanities and article or review type of document was selected. By applying modified filters and excluding articles with no citations, we found 363 papers. All 363 abstracts were read and according to their content, the relevance to our topic and citations, we identified the 33 most important papers for our core set of articles. We than examined the references of the 33 articles to find additional, less recent papers on the topic we are interested in. In doing so, we identified 18 that we could add to our core list, making a final list of papers used for this part of literature review to total of 51 articles (33+18). 36 were theoretical papers (the majority of them are seminal works published before 2000) that explain the stages of industry emergence process and main theories; 15 articles were performing empirical analysis and were published after 2000. Finally, the identified papers were structured in 4 subsections:

- Stages of industry emergence- as entry determinants are depending on the current stage of industry;
- Main theories- where three main theories explaining the theoretical foundation behind drivers of entry were elaborated;
- Determinants of entry- presenting papers that are using empirical approach to test hypothesis on entry and their main findings;
- Summary- presenting key theoretical arguments that we could use from literature for developing our hypotheses and research framework in crowdfunding industry.

2.2.1.1.Stages of industry emergence

Most of the papers we found define and identify stages of industry emergence process. This is done, because the main determinants of entry are depending on the current stage of industry emergence,

therefore different stages have different drivers of entry. The main difficulties are in terms of defining these stages, their start and end points in time, and the transitions between them. However, according to Gustafsson et al. (2016), we can identify a relative consensus in literature, regarding three key phases in the industry emergence process and consequently different drivers of entry: an initial stage in which the stage for the industry emergence process is set; a co-evolutionary stage in which the different elements of the emerging industry co-evolve and converge to form a new industry; and a growth stage in which the sales of the newly formed industry take off. Now, each of these phases will be elaborated more.

i. Initial stage

Different authors have different terms for labeling the initial stage of industry emergence. Agrawal & Bayus (2004) define it as the pre-firm take-off stage, Phaal et al. (2011) refer it as the precursor phase, while embryonic phase or pre-founding stage is the label used by the Forbes & Kirsch (2011). Still most of these authors agree that this is the stage where existing market or technological system is challenged initially and in which the development of the new industry structure does not progress significantly. It is the nascent phase of the novel industry where it`s structure is not fully defined yet and it is usually triggered by some external events. Multiple market categories and industry identities emerge, during this stage (Mitchell, 1989). The initial stage is characterized by an increasing number of entrepreneurial opportunities and consequently, an increase in nascent entrepreneurial activities and the number of new firms that are established (Mezias & Kuperman, 2001).

In literature, there are a couple of directions that authors used to identify the trigger of the initial stage. One of the most prominent directions is the scientific and technological development- how inventions and innovations can challenge existing technology, market, product or service and create a new industry (Hargadon & Douglas, 2001; Munir and Phillips, 2002). The emergence of a novel technology or a technological discontinuity is usually a starting point for the creation of a new industry through new firms' entry. However, the technological basis around which the new industry is ultimately founded is typically quite different from the initial technological innovations that trigger the initial entry of first movers in the industry.

Changes in cultural values could be also another trigger for setting of the initial stage of industry and seen as determinant of entry. Rao et al. (2000) stress out the importance of cultural innovation, and moves from the concept of technological innovation, to discuss the importance that social movements as the source that can create new organizational forms. While governments are central to regulatory changes, changes in cultural values and changing demand conditions, the pressures for change (triggers) are often conferred by non-market actors (such as social movement or customer interest groups). Government's interest in this stage, exposed through media coverage can also positively affect firm`s entry into new market category space, as demonstrated by Schultz et al. (2014) in the broadband access industry. To sum up, in initial phase the main drivers of entry could be grouped into 4 factors: technology push, demand pull, cultural changes and regulatory changes.

ii. Co-evolutionary stage

The co-evolutionary stage entails the convergence of the variety of product categories that emerged during the initial stage. The transition from the initial stage to the co-evolutionary stage is marked by the emergence of a "dominant category", term proposed by Suarez et al. (2014) that fulfils "the need of stakeholders to communicate meaningfully with other stakeholders regarding their activities in the emerging industry". During this stage, an increasing number of collaborative actions by firms, innovation activities and engagement with consumers take their form. This phase of industry emergence is characterized as a stage in which the co-evolution of organizational, technical, product and service innovations emergences occurs and the phase during which rapid imitation accelerates the firms` entry in industry (Mezias & Kuperman, 2001). Other renowned scholars (Klepper & Graddy, 1990; Agarwal & Bayus, 2004) that were studying the evolutionary process of industry also agree that in the co-evolutionary phase, increasing number of firms are entering the industry. Phaal et al. (2011) label this phase as the "nurture phase" while Forbes & Kirsch (2011) call it "emergent stage of industry development".

iii. Growth stage

Growth stage is characterized by permanent shift in industry landscape as the consequence of disruption and reshaping occurred in initial and co-evolutionary stages. Some of the authors showed that growth stage can emerge when a sub-market or technological niche of an existing industry develops and differentiate from originating industry (Geels, 2002; Jacobides, 2005). On the other hand,

a new industry may also arise from largely unrelated or existing industries such as scientific discoveries and innovations, like in case of the birth of mainframe computer industry (Malerba et al., 1999). Another form of emergence could also come from parallel developments in several technologies that all together, serve a new purpose or need, like in case of the flight simulator industry (Rosenkopf & Tushman, 1998). So, main drivers of entry in this phase are diversification coming from related /unrelated fields and technological innovations.

It is the stage when irreversible moves such as investment, knowledge, technological and production commitments are set within an industry (van Merkerk & Robinson, 2006). This shift can also be seen from the market side, when there is widely accepted market or industry category (such as "nanotechnology industry"), between the players and relevant audience of the new industry (Suarez et al., 2014).

Authors from different areas agree that in growth stage, the overall industry sales take off in response to market emergence (Phaal et al., 2011). Additionally, the quality of the product/service improves and the competitive environment is clarified. During this stage, the number of firms continues to grow before flattening out and reaching its peak, and entry rate starts to decrease due to increased competition (Klepper & Graddy, 1990).

There are two main differences in research standpoint, when studying the growth phase. According to Phaal et al. (2011) it is the stage leading to sustainable industrial growth and explaining the process how industry is created (emerged). On the other hand, Forbes & Kirsch (2011) consider it as phase where industry grows, but more in terms of all-encompassing phase in which industry also reaches maturity and the later dynamic processes like shake-outs and consolidation take place. Therefore, we can distinguish between the early and later phase of the growth stage.

In the early phase of the growth stage, with increasing sales, production and increasing numbers of firms, competitive pressures start to grow (Luo, 2003). Firm alliance strategies become increasingly central in the further development of the industry as a response mechanism to growing competitive and market pressures, and these alliances shifts from exploratory to exploitative according to Rice & Galvin (2006). In the later stages, industry dynamic is focused only on survival and the entry rate is low or negative, thus this stage is not considered as relevant for this master dissertation.

2.2.1.2.Main Theories

We identified three main theories that are used as foundations for the research about entry and the drivers of entry in emergent industries: institutional theory, evolutionary economics and organizational ecology. Each of them will be discussed in following sections and the findings of the most relevant theoretical implications will be summarized. In the next subsection, the most relevant empirical papers drawing on these theories will be elaborated and used later for developing our research framework.

i. Institutional theory

Institutional theory originated from the work by DiMaggio & Powell (1983), when a key question is addressed: "What makes firms so similar?" The basic concept of institutions is defined by Hoffman (1999) as "rules, norms, and beliefs that describe reality for the organization, explaining what is and is not, what can be acted upon and what cannot". Institutions are viewed as sort of performance scripts (what to do and what not to do) for repeated activities, and for what, every deviation in expected behavior is seen as costly or illegitimate. The main idea of this theory is that it tries to explain the homogeneity that arises among organizations, in certain organizational field/area after that area becomes well structured. This homogeneity process the authors refer to as isomorphism and it is the process of making one unit in population to resemble to other unit, while facing same environmental conditions. There are three main mechanisms that push organizations toward homogenization:

- Coercive isomorphism (comes from political influence and the problems of legitimacy)- formal and informal pressure coming from the organizations that have power on them or by cultural expectations in society
- Mimetic (standard response to uncertainty)- when organizations imitate the other organizations as the response to ambiguous goals/not understood technology
- Normative (related to professionalization)- collective struggle of members of occupation to define the conditions and method of work

The main implications of this theory is that socio-cognitive processes are seen as central to entry in the new industry process and tends to consider new industries as more or less socially constructed entities. The main mechanisms that influence entry are firm`s identity and legitimacy which will be explained later. The importance of social resources, social structure and social norms are proved to have larger impact on entry rate of firms, than the availability of natural/economical resources (Sine & Lee, 2009;

Pacheco et al., 2014; York & Lenox, 2014), meaning that the pressures coming from external environment and entrepreneur`s response to it, can be seen as an important predictor of firm`s entry. Speaking about pressure they are not coming only from socio-cultural environment, but also from political and economic environments (Shane, 2003).

ii. Evolutionary economics

The second theory used in studies on industry emergence and firm`s entry is the theory of evolutionary economics. The two main corner-stones of this theory are evolutionary concepts such as the path-dependent nature of capability development based on work of Arthur (1989), Winter & Nelson (1982) and the concept of industry life cycles mainly based on the work of Utterback & Abernathy (1975) and Klepper (1996).

Winter & Nelson (1982) took the ideas on economic evolution dynamics, proposed by Schumpeter (1934) and presented a direct evolutionary challenge to mainstream approaches to technological progress, economic growth, and competition between firms. Their conception has roots in biology and the Darwin theory of evolution, as they describe the firm as a collection of routines, which are equivalent of genes in biology. Firms search for innovative (or imitative) solution to increase their profits, with the most successful firms growing at the expense of the less successful. The process is fundamentally dynamic, as firms interact and create the relative competitive environment that each faces. The firms that may not be able to find the best technological solutions, nor seek to optimize profit perfectly, is the border that separates the evolutionary from orthodox approaches.

Utterback & Abernathy (1975) focused on the process of industry evolution through linear metaphorical cycles and the dynamics between process and product innovation that leads to dominant design concept. In a nutshell, their model presupposes a high level of uncertainty on the user`s side (user`s preference, i.e. user`s needs uncertainty), but also producer`s side (technological means to satisfy these user`s preferences/needs). This attracts more firms to enter market and to focus on product innovation ("fluid phase") in search of technological means to satisfy (still) uncertain users` needs. After the sets of experimentation with product by both users and firms, learning increases, so the uncertainty decrease, but the opportunities for product improvement are depleted ("transitional phase"). This leads to the creation of dominant design, a series of technological features of the product that emerges as the de

facto standard for industry. Firms, that cannot produce dominant design efficiently, exit the market. Remaining firms know that the product innovation is limited, since dominant design emerged and became industry standard, so there is no space for radical product improvements. Therefore, remaining firms do not fear that extensive technological investment in production process (process innovation) will become obsolete soon. Thus, they focus on capital-intensive productivity increase; consequently, reinforcing the shake-out as the efficiency level of production of the dominant design is increasing, forcing more competitors to exit ("specific phase").

The main implication of this theory is that it considers economic and technological forces as the main drivers of entry and industry emergence process. In most cases, evolutionary economic is focused on explaining the dynamics of firm`s behavior and interaction, according to current cycle of the industry. As entry in the industry is one of the characteristics of firm`s behavior, the evolutionary economic theory can also be used as theory to identify and explain the determinants of entry. This theory stresses out the importance of knowledge and technological innovation as the main drivers of entry (Giarttana, 2004; Klepper & Simons, 2000; Buenstorf et al., 2010).

iii. Organizational ecology

Organizational ecology is the third theory that influenced the research on the industry emergence and firm`s entry. Hannan & Freeman (1977) addressed the question "Why are there so many kinds of organizations?" which seeks to understand the distribution of organizations across different environments. To this end, ecologists have adapted and applied theories and formal models to explain population biology and human demography to explain the evolution of organizational systems – rate of founding, failure, growth, performance, and change (so called- vital rates). Using the population as their unit of analysis, population ecologists statistically examine the birth and mortality of firms and other organizational forms within the population. Three levels of analysis are demography of organizations (variations in vital rates), population ecology (influence of one population on another) and ecology of organizations (how vital rates are affected by other organizational population) (Hannan & Freeman, 1989).

There are four main areas of research for organizational ecology scholars: density dependence, niche width (level of specialization), structural inertia and identity. The most established one that will be

elaborated more are density dependence and niche width. The main argument of density dependence area- is that firms` vital rate depend on the population density. At low density, increasing density increases legitimacy of the organizations. At high density, increasing density increases the need for resources. Hannan & Freeman's (1989) studies of labor unions in United States show that unions' founding and failure rates followed the predicted non-monotonic patterns. Niche width differentiate between generalist- organizations that serve a wide range of clients with a diverse range of products/services and specialists- organizations that serve a more limited market (niche), offering them a narrower range of products/services. The basic argument is that when there are economies of scale and a resource distribution with a single rich center and poor peripheral regions, the resource "space" (the combination of inputs and demand for output) becomes partitioned, with generalist occupying the center and specialists occupy the peripheral (Carroll et al., 2002).

The "traditional" ecological research focuses on explaining entry (as one of the vital rates) through explanatory variables such as density, size, age, location etc. The main strength of "traditional" organizational ecological studies is that they have high level of paradigmatic consensus. It means they agree on what outcomes to study- founding rate, on what explanatory variables to consider (density, size, age, location, technology, networks and identities) and what analytical strategy to employ. The main strength is actually its main weakness; as organizational ecology does not have major influence outside of its own field. This approach uses statistical models to analyze the organizational population in one/more industry/ies along extensive time span. Therefore, the majority of these researches are performed on already established mature industries where industry emergence process is analytically explained through survival analysis. The main implication is that this theory explains that density and entry (founding rate) have inverted U-shape relationship. At low density, entry rate will increase due to legitimacy effect, up to the point the competition for limited resources takes over, and decrease the entry rate (Carrol & Khessina, 2005).

2.2.1.3. Determinants of Entry

i. Industry Specific Determinants of Entry

In this section the most relevant articles that explain the determinants of entry in a single industry are discussed. Each of the paper is referring to one of the theory explained above, key driver of entry is emphasized, as well as key findings that could serve as a starting point for developing our framework

for the analysis of entry determinants in crowdfunding industry. After the summary table, critical comments as a part of literature review are provided. This core set of 11 papers is selected according to the process explained at the beginning of the literature review section. The summary table follows:

Table 3: The summary of articles related to the industry specific determinants of entry based on 3 main theories: Institutional Theory, Evolutionary Economics, Organizational Ecology

INSTITUTIONAL THEORY			
Authors (Year)	Industry (Period)	Determinants of entry	Key findings
Sine, W. D., & Lee, B. H. (2009)	US wind energy producers (1978-1992)	• Number of environmental groups and their membership	Social resources are bigger determinant than availability of natural resources (land with high quality wind)
Pacheco, D. F., York, J. G., & Hargrave, T. J. (2014)	U.S. wind energy producers (1999-2008)	• Social movements organizations (SMOs) membership	The effect is two-sided as industry growing is also influencing increased diversity among SMOs
Lounsbury, M., Ventresca, M. & Hirsch, P.M. (2003)	US recycling industry (non-empirical)	• Recycling SMO number and membership	Social movements also contributed to regulatory changes and recycling SMO enabled the rise of for-profit recycling industry
York, J. G., & Lenox, M. J. (2014)	Green building supply industry (2000-2007)	• Economic: number of new commercial building permit • Regulatory: cumulative count of policies in place • Collective action: environmental SMO membership • Social norms: environmentalism	Sociocultural environment has a greater impact on the entry rate of de novo firms than the entry rate of de alio incumbents
EVOLUTIONARY ECONOMICS			
Authors (Year)	Industry (Period)	Determinants of entry	Key findings
Giarratana, M. S. (2004)	Encryption software-globally	• Technological innovation • Founders characteristics • Patents	Innovation and product differentiation, along with investments in co-specialized assets, are strongly correlated to firm`s probability to enter, survive and grow
Klepper, S. and Simons, K.L. (2000)	US television receiver manufacturing industry (1947-1989)	• Prior experience in related technological area (radio receiver manufacturing)	Firm capabilities and the evolution of the TV industry's structure were critically shaped by firms' experience prior to entry.

Buenstorf, G., Fritsch, M., & Medrano, L. F. (2010)	Laser systems production in West Germany (1975-2005)	• Regional knowledge in the related field (laser source) • Presence and agglomeration of suppliers • Universities with physics/ engineering departments	Regions with preexisting laser source producers, relevant university research, and larger stocks of laser source patents were more likely to experience the entry of laser systems suppliers.
ORGANIZATIONAL ECOLOGY			
Authors (Year)	Industry (Period)	Determinants of entry	Key findings
Wang, L., Madhok, A., & Xiao Li, S. (2014)	Ontario's winery industry (1865-1974)	• Agglomeration of wineries (density of firms in one region)	Agglomeration attracts more new entry in the growth stage only, while it contributes to firm survival in the mature stage only.
Dobrev, S. D., & Gotsopoulos, A. (2010)	Automobile industry in USA, France and Great Britain	• Firm`s density	Unfavorable conditions at the founding may result in consistently lower survival chance for new firms
Schultz, P. L., Marin, A., & Boal, K. B. (2014)	Broadband access industry in US (1993-2000)	• Media coverage • Firm`s density	Media-based legitimacy effects exert a stronger influence on the creation of new market categories compared to the effects suggested by density dependence theory
Sorensen, J. B., & Sorenson, O. (2003)	TV transmission station industry in Sweden	• Firm`s density	Increasing founding rates in already "crowded" geographical areas is a result of misinterpreted market information of population dynamic by new entrepreneurs (de novo firms).
McKendrick, D. G., Jaffee, J., Carroll, G. R., & Khessina, O. M. (2003)	Disk array producers	• Firm`s density	The density of de novo firms (but not that of de alio firms) has a legitimating effect on the industry by increasing founding rates of all firms and decreasing failure rates of all firms

According to the institutional theory, the two main mechanisms that influence firm`s entry is their reaction to exogenous and governmental institutional changes in the environment are identity and legitimacy. Identity is something that is seen as core, distinctive, and enduring about the character of an organization (Gioia et al., 2000). Legitimacy is defined as "generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995). The main starting point in the study of York

& Lenox (2014) is that the entry of de novo and de alio firms will be impacted differently by the institutional environment because of firm`s identity and forms of legitimacy chosen. By empirically testing hypothesis on economic, regulatory and socio-cultural environment, they proved that each of these factors are drivers of entry (in US photovoltaic industry). Interestingly, socio-cultural factors influence more the entry rate of de novo firms compared to de alio firms. The reason behind that is that de novo firms, in time of the entry, are aligning their identity and legitimacy to the values of the industry, in this case- environmentalism values and social norms. Therefore, the entry rate will be higher for de novo firms in regions where there are strong social norms aligned with firm`s identity and legitimacy-building actions. Sine & Lee (2009) proved that direct and indirect effect of social resources (in this case- social movement environmental organizations) had larger impact on creation of new firms in industry, than the availability of natural resources -land with high-quality wind, in the wind energy producers' industry. Similar conclusion was found in the same industry (wind energy in US), some years after in a study carried out by Pacheco et al. (2014), emphasizing the importance of social movements organizations (SMOs) influence on firms` decision to entry. The main implication is that SMOs through their activities are building up legitimacy of the whole industry, consequently increasing the entry rate in industry. Social movements also contributed to regulatory changes, as shown by Lounsbury et al. (2003) via recycling social movement that enabled the rise of for-profit recycling industry in the US. Speaking about regulatory factors, their influence on entry is high as government can act as a gate-keeper to market and can incentivize (or deter) firm`s entry. As shown by York & Lenox (2014) regulatory factors are important determinants of entry as much as economic factor, still their effect on entry is higher for de alio entrants. The main reason behind this is that identity and legitimacy are not aligned with the industry values, but, respectively, derived from activities from originating industry and their reliance on existing capabilities and resources.

First stream of economic evolutionary theory is the one addressing the importance of innovation and knowledge as the determinants of entry. Giarratana (2004) demonstrates the importance of innovation, product differentiation but also investment in co-specialized assets, as variables that are strongly correlated to young firm probability to survive and grow in the encryption software industry (ES). Additionally, he stresses out the importance of entrepreneur characteristics and knowledge, during the first years of their venture and explains how one niche of the global software market became a new

industry- ES industry. The second stream of literature studies economic evolutionary process of industry emergence through firm`s prior experience in the related technological fields. In their study of US TV receiver manufacturing industry, Klepper & Simons (2000) suggested that firm capabilities and the evolution of the TV industry's market structure were critically shaped by the experience that firms developed prior to entry, as de alio entrants had higher innovation rates, and consequently grater market share and longer survival. The article that combine both streams and examines the importance of regional knowledge, coming from related fields and universities and the prior experience (through the entry driver of diversification) is the one by Buenstorf et al. (2010). Using the dataset on laser producers in West Germany, they concluded that regional knowledge (proxy used is number of patents) and the presence of universities with physics or engineering departments are strong drivers of entry. Another important driver of regional entry is de alio entry through diversification of firms operating upstream (suppliers of laser source).

Three studies that take into account geographical concentration and its effect on the firm`s entry are the research of winery industry in Canada (Wang et al., 2014), disk array producers industry (McKendrick et al., 2003) and TV transmission station industry (Sorensen & Sorenson 2003). Wang et al. (2014) displayed how proximity of the firms being located geographically close to one another (i.e. "agglomeration") attracts more entry in the growth stage of the industry, while it contributes to firm survival in the mature stage. Similar conclusion was drawn by McKendrick et al. (2003) as "the density of de novo firms (but not de alio firms) has a legitimating effect on the industry by increasing founding rates of all firms and decreasing failure rates of all firms" as perceived focus of organizational identity. On the other hand, Sorensen & Sorenson (2003) found that increasing founding rates in already "crowded" geographical areas is a result of misinterpreted information of population dynamic by nascent entrepreneurs (de novo firms). Since the TV transmission station is one of the rare cases of service providing industry in this literature review, similar arguments should be applied and tested in the case of crowdfunding industry. Similarly, Dobrev & Gotsopoulos (2010) proved that firms` density is a driver of entry, but that high density at foundation might also negatively affect future survival. The main conclusion of their work is that "unfavorable conditions at the founding may result in consistently lower survival chance for new firms". Further they demonstrated that population-level legitimacy vacuum adversely affects the fates of new entrants in the emerging industry and integrates in their

organizational structure. Nevertheless, all the articles of this "traditional approach" (using only firms` density as explanatory variable of entry) to organizational ecology are stressing out the importance of density and agglomeration effect as one of the main determinant of new firms` creation, so this theoretical argument must be taken into account for our research.

While widely used in studies of the development of established industries, the applicability of organizational ecology in studying emerging industries is limited to a certain point. During the industry emergence process the elements defining the industry are still evolving and, consequently, it is difficult to define the boundaries of the relevant organizational population for an ecological analysis (Gustafsson et al., 2016). Still some of the researches successfully incorporated theory of organizational ecology alongside with institutional theory and explained industry emergence from multi perspective. One of the multi perspective study is the one performed by Schultz et al. (2014). Government's interest, exposed through media coverage can also positively affect firm`s entry into new market category space, as demonstrated by Schultz et al. (2014) in the broadband access industry. Increasing positive media coverage of new market categories is one of the factors that contribute to an increase in firm`s entry rate. The media coverage is used in this case as a proxy of legitimacy building, and in connection to density dependence theory, interesting comment has been suggested by authors:" the population density provides industry participants with some knowledge about activities occurring within the market category, but changes in density provide information that may be only distantly linked to many critically important issues. Furthermore, in emergent organizational populations where density is extremely low, the legitimating effect of density may not be strong enough to affect entry rate". This important remark, should also been taken into account when analyzing (emergent) crowdfunding industry, as the density dependence theory is an important predictor for firm`s entry, but it is not sufficient to use it alone, but should be combined with other variables. Nevertheless, when combining density variables with other institutional (mainly legitimacy) variables, either as explanatory variable (Dobrev & Gotsopoulos, 2010) in post-hoc analysis (Schultz et al. (2014), or one of the control variables (York et al., 2014), as it can give useful insights on the firms` entry rate in an industry. To sum up, combination of theories and integration of different variables is necessary in order to make a broad research framework that will capture relevant drivers of entry in crowdfunding industry in Europe.

ii. Industry Generic Determinants of Entry

In addition to the core set of papers elaborated above, in table and text below, 4 papers that explain the regional drivers of entrepreneurial activity (entry) are elaborated and summarized. These papers do not take into account single industry, but analyze entry of all companies from multiple industries in single/multiple region/s, thus their findings and arguments can only serve as a support, but not as a direct input for our theoretical framework. These scientific papers explain general determinants of entry in one geographical region, but does not consider single industry, but firm`s entry from all industries combined. In our opinion, these papers should be reviewed separately because they do not take into account industry specific drivers of entry, nor one of the three main theories we explained. Their focus is on general macro-economic conditions that are drivers of all new entrepreneurial ventures in one region. Still they can provide us with valuable insights on what are the regional drivers of entrepreneurship what could affect entry of firms on local level. The following is the summary table of these articles:

Table 4: The summary of articles related to the regional determinants of entrepreneurship (overall industry determinants of entry)

Authors (Year)	Region (Period)	Regional determinants of new firm entry	Key findings
Sutaria, V., & Hicks, D. (2002)	State of Texas counties (1970-1991)	• **Negative effect:** unemployment rate change • **Positive effect:** mean establishment size, entry and exit rates (lagged one year), and total bank deposits	Determinants of new firm formations were analyzed by employing a new regression modeling technique-fixed effects regression technique. There was no evidence of an impact on new firms' entry of per capita personal income growth, unemployment rate, an earnings-denominated sectoral shift-to-services, or local government spending.
Naudé, W., Gries, T., Wood, E., & Meintjies, A. (2008)	South Africa's magisterial districts	• **Positive effect:** Profit rates, educational levels, agglomeration, access to formal bank finance	Profits have by far the strongest effect on start-up rates. This, together with the insignificance of unemployment for start-ups, may imply that start-ups in South Africa are mainly opportunity-driven
Armington, C., & Acs, Z. J. (2002)	Labor market areas in the US	• **Positive effect:** Human capital, training and education, and entrepreneurial environment	Significant differences in new firm formation rates are found from industrial regions to technologically progressive regions. Variations in firm birth rates are explained by industrial density, population and income growth. These results are consistent with thick labor markets and localized knowledge spillovers.
Tamasy, C. (2006)	Germany regions	• **Positive effect:** household income, share of middle-aged population • **Negative effect:** unemployment rate, high share of people with higher and/or vocational education, share of persons with close social ties	In the case of household income, unemployment, education and marital status the relationship is significant but contrary to earlier research. Only regional age structure seems to be a stable predictor of regional entrepreneurship. The results indicate that in recent years there was a major shift in the determinants and characteristics of entrepreneurship in Germany.

To conclude all of these articles are identifying the determinants entry at regional level, but considering all industries together and not distinguishing between drivers that could impact entry in specific industries. However, the importance of these papers is they provide good starting point in developing variables at regional level. If we consider all the crowdfunding platforms just as entrepreneurial ventures, it would be interesting to see if the same results are obtained or some different causal relationships are found.

3. CHAPTER 3 – HYPOTHESES

Based on the main theoretical concepts elaborated in literature review part above and taking into account the particular differences among various types of crowdfunding platforms, the potential drivers of firms` entry are identified for each type of platform. Our basic assumption was that firms which operates a certain type of crowdfunding platform are constituting the industry of crowdfunding. More specifically, firms can be classified based on the type of platforms operated. Therefore, if we use the most common crowdfunding platform type classification, and segment the firms on reward, donation, equity and lending type, we come to the 4 segments of crowdfunding industry. We used this approach to go deeper into the analysis of firm`s entry drivers in crowdfunding industry. The drivers are classified in 5 areas: economical, regulatory, socio-cultural, the field density of crowdfunding platforms and substitute service providers. Relying on that, we developed 9 hypotheses according to these 5 types of drivers and their effects on firm`s entry in industry.

3.1. Economical drivers (demand & supply effects)

Demand for crowdfunding is generated by prospective project initiators that have ideas to be funded and need money for realization of that project. Project initiators can be broadly grouped into different categories: individuals, Non-Governmental Organizations (abbreviated as NGOs) and young small and medium enterprises (abbreviated as SMEs). So separate hypotheses will be developed for each group of project initiators that could influence platforms` entry in the segments of the local crowdfunding industry. Our assumption is that a higher pool of project initiators at the local level will stimulate firm`s entry into industry. Taking into account the already mentioned differences across the 4 types of segments of the crowdfunding industry and their respective project initiators, we develop following hypotheses and our arguments behind it.

> The local project initiators come from the population living in a region, we except that the higher number of inhabitants in a region will increase the pool of prospective initiators of any types of projects (equity, lending, reward or donation). Posting a project on a platform likely requires some interaction between the proponent and platform`s managers. Hence project initiators, ceteris paribus, will choose to post their project on the closest platforms to reduce interaction costs. We assume that this will serve as a signal of higher demand to firms willing to enter

crowdfunding industry, and push them toward entry. Additionally, these firms will perceive areas with higher population more attractive for entering, as higher demand could mean better chance for their success /survival in the crowdfunding market.

HA1a: The number of inhabitants in a geographical area will positively affect the entry in all 4 segments of the crowdfunding industry in the area.

The majority of NGOs have social goals, thus according to our assumptions, they will perceive crowdfunding as a great mechanism for raising funds for their social actions. NGOs do not aim at making profits (monetary goals) but addressing and solving social problems (non-monetary goals), so there is a clear similarity in goals with the donation and rewards-based platforms. Hence, NGOs will perceive donation and rewards-based platforms as great partners that could help them raise funds for their activities. Conversely, NGOs represent a constant source of new activities with social cause, i.e. ideas that could become prospective projects on donation and rewards-based platforms. So, a higher number of NGOs operating in an area will have positive influence on the demand for donation and reward crowdfunding platforms. Prospective entrants in the crowdfunding industry will recognize this and perceive the presence of a high number of NGOs as a potential opportunity when entering the donation and reward segments of the crowdfunding industry.

HA1b: The number of NGOs operating in a geographical area will positively affect entry in the donation and reward segments of the crowdfunding industry in the area.

Newly created, young SMEs, that we also refer as start-ups suffer from funding gap, i.e. they lack financial resources lack of financial resources, and this constrains their growth (Carpenter & Petersen, 2002). Therefore, higher number of entrepreneurial ventures & startups in an area indicates that there are capital needs and can use the services of crowdfunding for getting funding (Giudici et al., 2012). Equity platforms are mainly oriented to funding entrepreneurial projects and can serve as a way of bridging entrepreneur`s need for financial resources. Lending platforms can serve as an alternative for start-up funding received from banks, with no need for collateral. Banks usually asks for a way of securing their loan through collateral or can charge

higher interest rate. In case, entrepreneurs do not possess adequate collateral or perceive bank`s interest rate as too expensive, but wish to increase their debt (and not share their equity), they will opt for getting funds through lending platforms. Thus, a higher pool of start-ups will drive the demand for equity and lending platforms at the local level and lead more firms to enter these segments of crowdfunding industry.

HA1c: The number of start-ups in a geographical area will positively affect entry in the equity and lending segments of the crowdfunding industry in the area.

Money to fund ideas is supported by the "crowd" which backs up projects posted on the platforms. A higher people`s disposable income will positively influence the (money) supply for crowdfunding, as people will have a surplus to invest/donate via crowdfunding platforms for the projects that raised their interest. Putting differently, better economic situation of the "crowd" living in an area will enable more individuals to become project-backers and pledge higher amount of money, pushing the supply for crowdfunding. In our assumption, this push in supply will positively influence firms` entry into crowdfunding industry. In other words:

HA2: The disposable income of inhabitants in a geographical area will positively affect the entry in all segments of the crowdfunding industry in the area.

3.2. Regulatory effects

Governments' laws and regulations are important enabling conditions for entry into the crowdfunding industry. Since lending and equity segments have been regulated only recently in most countries (starting from 2010/11), it may be hard to capture the influence of regulatory factors on entry. On the other hand, reward and donation-based platforms are usually not strictly regulated, so the regulatory effect on these two crowdfunding models is negligible. It is worth mentioning that, there are no regional/local policies on the crowdfunding industry, as most of the laws are brought on national level. Regulatory factors are expected to have negative effects on the entry, because stricter regulations are creating more entry barriers. Moreover, by

regulating "small" crowdfunding platforms in same manner as "big" financial institutions, can demotivate firms to enter crowdfunding industry:

HB1: Stricter crowdfunding regulations in a geographical area will negatively affect the entry in equity and lending segments of the crowdfunding industry in the area.

3.3. Socio-cultural effects

As the initiators of projects on donation and rewards-based platforms have also non-monetary reason, and usually have some social (or other) cause, we assume that the areas where social values such as altruism and philanthropism are particularly strong, are likely to have higher entry rates in these two segments. Reward and donation-based platforms can be seen as an online place where people can actually express their level of altruism by initiating and also support projects with social (or other) causes.

HC1: The higher prevalence of altruism among people in a geographical area will positively affect entry into donation and reward segments of the crowdfunding industry in the area.

Social behaviors: the diffusion of crowdfunding is made possible by Web technologies. We expect that the higher the share of people using Internet technologies for buying/selling or other online monetary transactions, the higher entry rates will be, as the "crowd" is more familiar and have more trust in investing/donating money via Internet. Hypothesis:

HC2: The higher share of people in a geographical area who regularly use Internet will affect entry in all segments of crowdfunding industry in the area.

3.4. Firm density effects

Relying on organizational ecology- density of organizations and agglomerations should affect entry. These arguments are extended to crowdfunding industry to identify the effect of existing platforms and substitute service firms on platforms` entry.

Crowdfunding platforms: the higher the density of the already existing players (i.e. field density) in the industry, the greater the entry rates will be, due to positive effect of legitimacy on the whole industry. Legitimacy is in this connotation defined as "taken-for–grantedness" in sociological way, meaning that a certain term or process is having a ready-made explanation and it is familiar to the majority of people. If we consider crowdfunding as a relatively novel term/process, rarity of established dominant design in industry (de-facto industry standard) can represent a serious problem of legitimacy, as people are not sure what does exactly term/process "crowdfunding" refers to. With growing number of firms in industry, dominant design evolves and legitimacy is also achieved through more and more people getting familiar with the term and process of crowdfunding. However, once the dominant design has emerged, it seems unlikely that further increase in number of firms will have much effect on it`s taken-for-grantedness, i.e. people`s familiarity with the term, leading to more potential project initiators and backers. Therefore, we expect that this will positively affect that the entry rate of crowdfunding platforms:

HD1: Density of the crowdfunding platforms in a geographical area will positively affect entry of in all segments of the crowdfunding industry in the area.

3.5. Substitute service provider's effects

Substitute service firms- Other financial institutions, such as banks or venture capital funds, can provide the necessary amount of funds to project initiators, especially if their projects have an entrepreneurial- profit oriented goal. If the financial sector` firms are numerous and active in terms of supplying capital and credit lines, they can act as substitutes to the crowdfunding platforms (usually to equity and lending types of platforms as entrepreneurs mainly prefer these platforms to raise money for their venture). Hence, we expect that the availability of banks and other financial firms in a region will negatively affect entry rates in crowdfunding industry in that region. Conversely, if the availability and terms of the loans for entrepreneurs are low, or entrepreneurs do not own collateral or are not willing to obtain credit lines from banks or share their equity with venture capital funds, entrepreneurs will be more interested in trying to get the capital via crowdfunding. Thus, the number of financial institutions/firms can be used as a

proxy for the availability of capital for the entrepreneurs, and in our opinion, a higher number of substitute service provider firms, will negatively affect the entry of crowdfunding platforms.

HE: Higher number of financial institutions in a geographical area will negatively affect entry in equity and lending segments of the crowdfunding industry in the area.

Our research framework that summarizes all determinants and their expected effect on entry in crowdfunding industry in Europe follows:

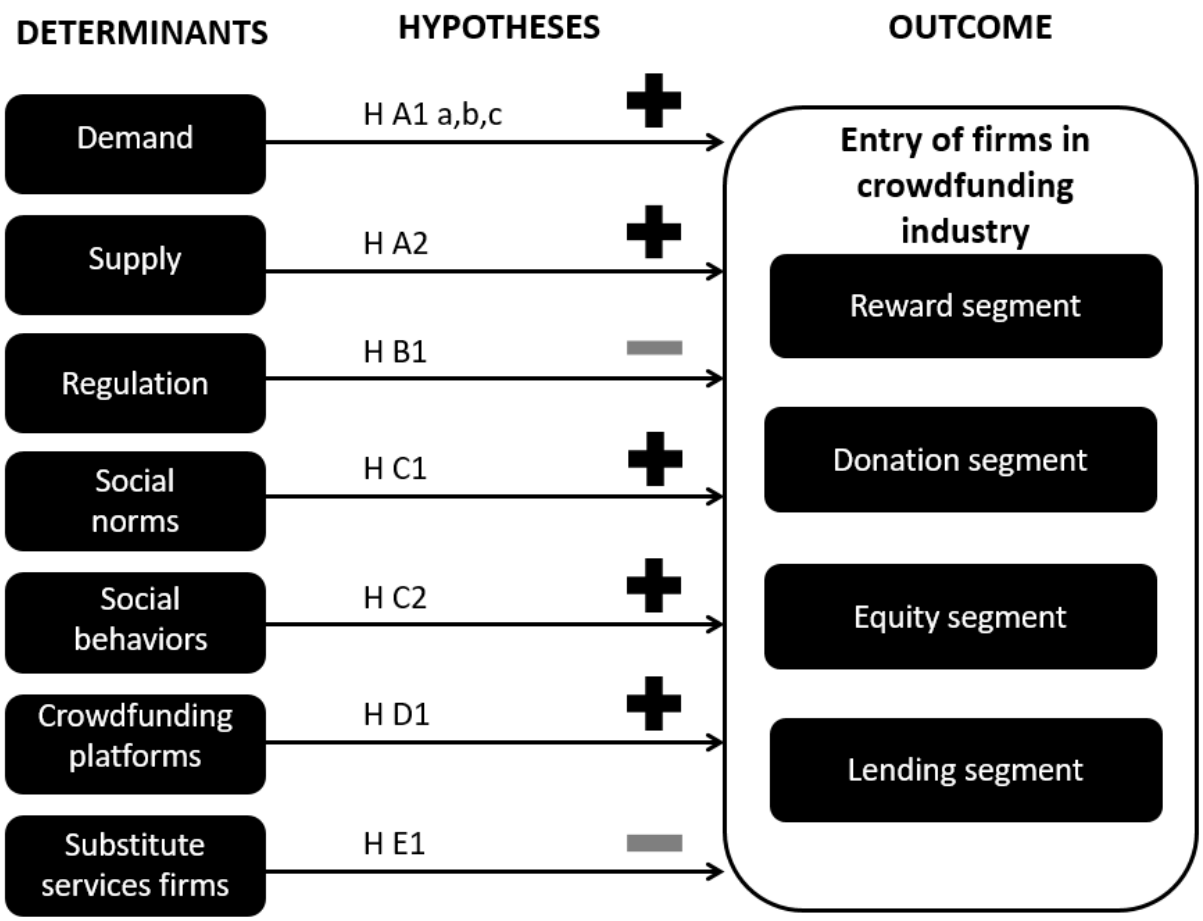

Figure 2: Our Research Framework and expected effects on the firm`s entry

4. CHAPTER 4 – DATA AND METHODOLOGY

4.1. Data collection and units of analysis

In order to analyze how regional characteristics influence firms' entry in the 4 segments of the crowdfunding industry (reward, donation, equity and lending) and test our hypotheses, we used a hand-constructed database to store information on the crowdfunding platforms launched by firms located in 15 countries of European Union (abbreviated as EU-15) including: Austria, Belgium, Denmark, Germany, Ireland, Italy, Spain, France, Luxemburg, Netherlands, Portugal, Finland, Sweden, United Kingdom and Greece.

4.1.1. Database on crowdfunding platforms in EU-15 countries

The original database was created by the Entrepreneurship, Finance and Innovation research group at the Department of Management, Economics and Industrial Engineering of Politecnico di Milano in 2014 and updated in 2015. Between February and May 2016, the existing data has been further updated and the database has been expanded by identifying new crowdfunding platforms that entered the market until the end of 2015.

The database was created through a series of steps. First, the list of all crowdfunding platforms created in EU-15 countries was compiled using data published on the Internet by international and national crowdfunding associations and websites specialized for monitoring crowdfunding industry. The complete list of the sources used can be found in Appendix A. Then, the website of each platform in the list was visited to collect and to build our research dataset. The dataset includes the following data: year of entry (the year of firm operating a crowdfunding platform opened its first platform), region of entry (geographical position of firm`s registered legal head office), type of platform (distinguishing between 4 main types: reward, donation, equity and lending ; and also mixed types including all the existing combination of 4 main types), year of firm`s exit (exit is seen as closure, inactivity in period higher than one year, but also the acquisition by other player on the market). In addition to those data described previously, the database includes some of data which is not directly used in our econometrical models as in the following: platform name, URL at creation, URL today, company name, VAT code, type of company (for-profit company, non-profit company), type of entry (de alio, de novo), type of de alio (description of the sector where the de alio entrant was operating before creating the platform), de alio

industry (further details on the sector where the de alio entrant was operating), address of registered office (address of the firm running the platform), country (county where the firm running the platform is located), NUTS_code3 (NUTS3 code of the area where the firm running the platform is located), NUTS_label3 (NUTS3 name of the area where the firm running the platform is located), NUTS_code2 (NUTS2 code of the area where the firm running the platform is located), NUTS_label2 (NUTS2 name of the area where the firm running the platform is located), changes in type of model (changes in the crowdfunding model since platform creation), languages (languages used in the platform for active platforms and at the last available date for closed platforms), changes in language (to detect whether new languages were added in the platform to original ones and when the addition occurred), foundation year of the company managing the platform, creating year of the platform (the year when the platform started being online), source of data.

As in our study, we focus on the legally registered business entities that founded at least one online crowdfunding platform, to test our hypotheses we started from this database and excluded the platforms created by a firm that had already founded one (or more) crowdfunding platform(s).

4.1.2. Period of analysis

Figure 3 reports the number of entries (and exits) in the crowdfunding industry in EU-15 countries from 2008[2] to 2015. After examining this figure, we have decided to focus our analysis on the period 2008-2015, as before 2008 entry in the crowdfunding industry is negligible (only 13 entries). Figure 3 shows that the entry in the crowdfunding industry is highly increasing till 2013, when it reaches its peak level. Then, entry starts decreasing considerably while at the same time, exits from the industry start increasing after 2011 and reach a stable mode after 2013.

[2] On the graph the data on entries and exits is collected starting from 2008, but in our original database, we possess data that go even before that year, i.e. since the creation first platforms in Europe by EU-15 based firms

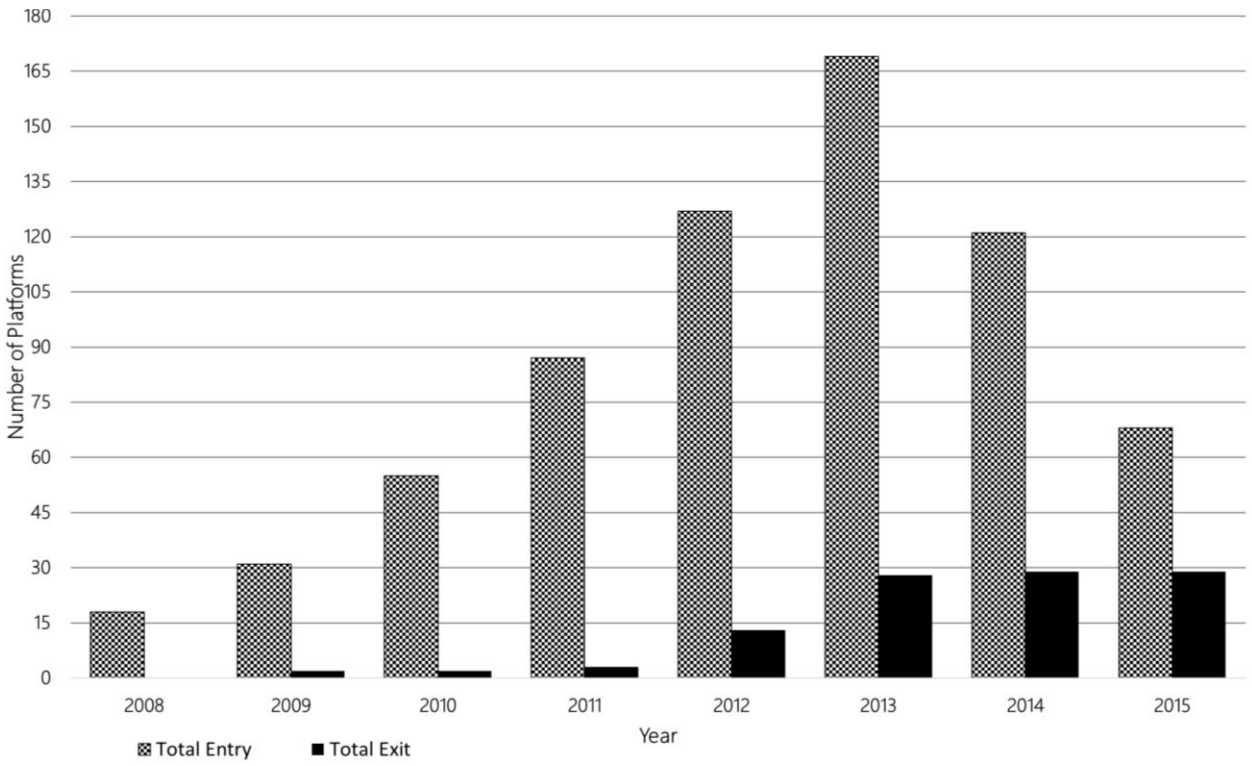

Figure 3: Annual number of entry and exit of crowdfunding platforms (our research)

Figure 4 shows that the entry rate is decreasing and that there is a certain levelling off in the number of active platforms in 2014. In the period 2014-2015, due to less entry in crowdfunding industry with an increasing number of exits, increase in the number of active platforms gets levelled-off compared with other years.

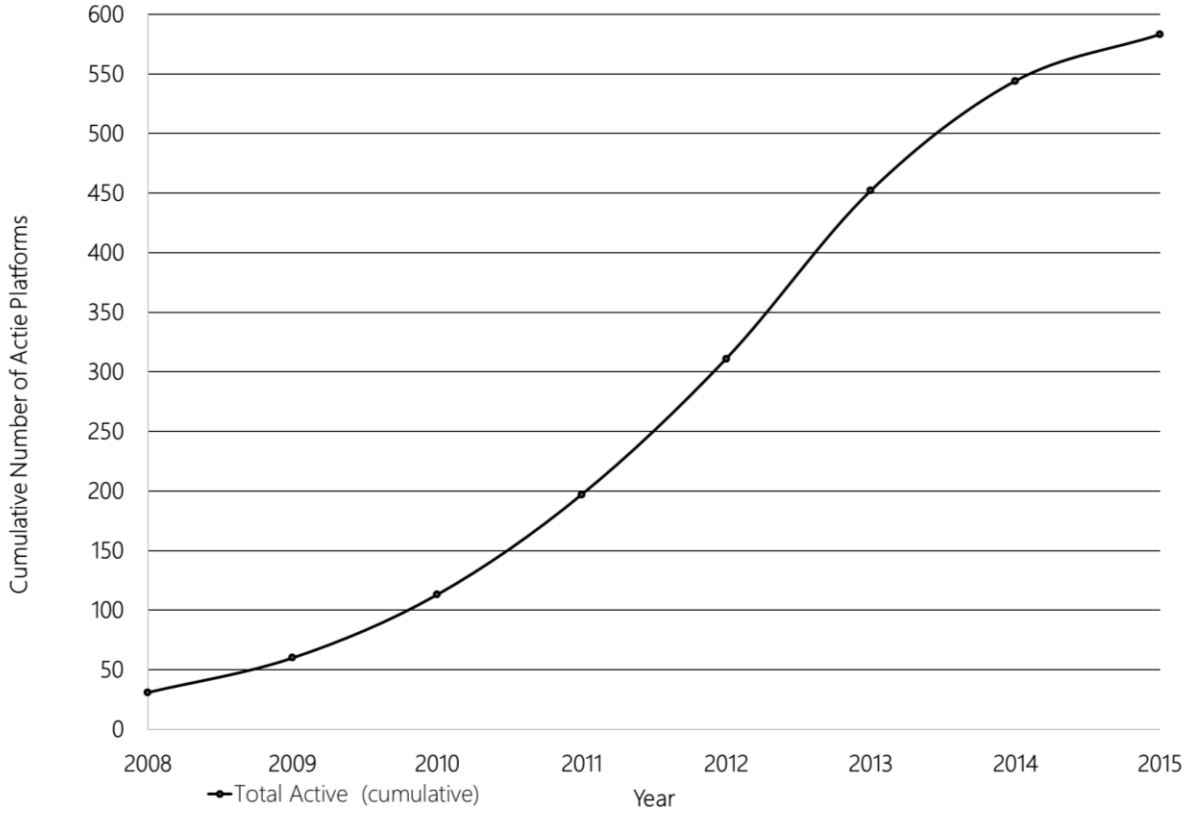

Figure 4: Cumulative number of active platforms

4.1.3. Geographical unit of analysis:

NUTS 2[3] is used as the geographical unit of analysis for classifying entries by firms operating crowdfunding platforms. The 214 regions located in EU-15 countries are listed in Appendix B, while Table 6 reports aggregated data on EU-15 countries.

[3] The NUTS (Nomenclature of territorial units for statistics) classification is a geocode standard for referencing the subdivisions of countries and a hierarchical system for dividing up the economic territory of the EU for statistical purposes. The current NUTS 2013 classification is valid since 1 January 2015 and lists 98 regions at NUTS 1, 276 regions at NUTS 2 and 1342 regions at NUTS 3 level. The NUTS 2 classification is selected as the regions included are usually the basic regions for the application of regional policies, and often (but not always) the administrative regions within a single country. Furthermore, they are geographically and demographically large enough, usually ranging between 800.000 – 3 M of inhabitants, to conduct sound statistical analyses.

Table 5: Total entry and active platforms in EU-15 Countries (our research)

Countries	Total Entry 2008-2015	Total Active at 31.12.2015	Entry in Segments				
			Equity only	Reward only	Donation only	Lending only	Multiple
Belgium	18	14	4	5	3	2	4
Denmark	7	7	1	2	3	1	0
Germany	118	105	30	33	17	23	15
Ireland	7	7	1	4	0	1	1
Spain	54	44	6	17	10	8	13
France	114	95	25	33	27	13	16
Italy	53	52	15	17	9	2	10
Luxemburg	2	1	1	1	0	0	0
Netherlands	87	74	12	16	29	14	16
Austria	16	16	3	2	5	4	2
Portugal	8	6	0	4	3	1	0
Finland	9	9	4	0	0	3	2
Sweden	13	10	1	3	5	3	1
UK	163	136	35	39	29	39	21
Greece	7	7	2	3	1	0	1

The table 5 shows the total entry and the entry in each segment of the crowdfunding industry from January, 2008 until December, 2015 together with the number of active platforms as off 31.12.2015 at the country level. It is worth noting that there is no entry in 90 out of 214 regions of EU-15 countries and most of the entries occur in metropolitan regions such as London, Paris and Berlin. Among NUTS 2 regions, Inner London has the highest number of entries (107), followed by Ile de France (82), and Berlin (33). Speaking about the country differences, we can conclude that the most developed countries of EU-15 are having the highest number of crowdfunding platforms, with UK leading the group (163), followed by Germany and France (118 and 114 respectively). Luxembourg has the lowest number of platforms which is probably due to the very small size of the country.

As we mentioned above, to test our hypotheses, we also needed data on regional characteristics, that we collected using several different information sources. Data on regional demographic, economic activity, business demography was extracted from official European Union statistical office- Eurostat online database (available on: http://ec.europa.eu/eurostat/data/database).

Further, data on crowdfunding regulatory regimes were collected via two reports: "Crowdfunding in the EU Capital Markets Union" published by European Commission in 2016 and "Review of Crowdfunding Regulation" published by European Crowdfunding Network in 2014, via Internet links in August 2016.

Data on social norms were collected from the 4th wave of European Values Study[4] carried out in 2008 and extracted via ZACAT online database provided by GESIS - Leibniz Institute for the Social Sciences. Global Entrepreneurship Monitor (GEM)[5] was used to extract data on entrepreneurial activity.

4.2. Variables and methodology

4.2.1. Dependent variable and model specification

4.2.1.1. Dependent variable

The entry event is defined as the creation of its first online crowdfunding platform by a new or already existing legal entity (firm). As the focus is on EU 15 countries, only firms that have registered their legal headquarters in one of the NUTS 2 region in countries of EU-15 are considered in our research. Additionally, firms that launched and are managing more than one crowdfunding platform were identified and de-duplicated, in order to avoid counting for multiple entries by single legal entity. Entry for these multi-platform firms is counted single time and only for the first platform they launched. The sum of the entry events that occurred in a single NUTS 2 region in a given year is the dependent variable used in the statistical analysis. As we wanted to analyze both entry in overall crowdfunding industry and entry in the 4 segments of the industry, we have developed 5 dependent variables:

- Entry_All - count of the total entries in all the 4 segments of crowdfunding industry in a single NUTS 2 region in a given year

[4] The European Values Study is a large-scale, cross-national, and longitudinal survey research program on basic human values. It provides insights into the ideas, beliefs, preferences, attitudes, values and opinions of citizens all over Europe. It is a unique research project on how Europeans think about life, family, work, religion, politics and society. The study is conducted in four waves- 1981, 1990, 1999 and the latest 2008. The last study was conducted in 2008.

[5] The Global Entrepreneurship Monitor (GEM) is a global study conducted by a consortium of universities, led by Babson University. Started in 1999, it aims to analyze the level of entrepreneurship worldwide. GEM measures entrepreneurship through both surveys and interviews to field experts, conducted by the teams of each country.

- Entry_Reward - count of the entries in the reward segment of the crowdfunding industry (including entries of both pure reward platforms and mixed platforms including reward) in a single NUTS 2 region in a given year
- Entry_Donation - count of the entries in the donation segment of the crowdfunding industry (including entries of both pure donation platforms and mixed platforms including donation) in a single NUTS 2 region in a given year
- Entry_Equity - count of the entries in the equity segment of the crowdfunding industry (including entries of both pure equity platforms and mixed platforms including equity) in a single NUTS 2 region in a given year
- Entry_Lending - count of the entries in the lending segment of the crowdfunding industry (including entries of both pure lending platforms and mixed platforms including lending) in a single NUTS 2 region in a given year

4.2.1.2.Statistical model and software

Since the 5 dependent variables are count type, we used Negative binomial models. Poisson distribution could be an alternative model, but, as the sample variance in our case exceeds the sample mean (mean=0,36 while Std. deviation=1,508 for the total entry dependent variable), it is not suitable to use Poisson distribution because of the over-dispersion of observations. The statistical analysis was performed using IBM SPSS Statistics 23 software package.

4.2.2. Independent variables

4.2.2.1.Demand

Total_Population and Population_Density are the two demand variables. They have been directly extracted from general and regional statistics from Eurostat database, section: demography, variable: demo_r_d3dens. After initial analysis in SPSS, population is found to be correlated (above Pearson R > 0,7) with Population Density. Thus, we decided to exclude Total_Population from the models to avoid possible multicollinearity issues. The number of NGOS and number of startups are directly extracted from section: business demography, variable: [bd_9bd_sz_cl_r2]. As these data were only available on national level, to get to the regional level data we had to construct weights on the basis of another Eurostat variable – structural business statistics [sbs_r_nuts06_r2], that presents the number of local business units across different sectors of industry on NUTS 2 regional level. These data were summed

and the weights are created as the ratio of total local business units in a single region and the overall number of business units in the respective country in a given year. The weights are then multiplied with the data on national level to estimate the number of NGOs and startups at regional level. Finally, the number of NGOs and startups were calculated per capita (divided by the number of inhabitants in region). Additionally, the indicator is scaled down by multiplying with 1000000 for easier interpretation of coefficients. In total 3 independent variables are used to express the demand for crowdfunding service:

- Population_Density - logarithm with base 10 of average number of inhabitants per square kilometer calculated by the ratio of the population of a NUTS 2 region to the (land) area of the region in respective year.

  The total area (including inland waters) is used when land area is not available. Furthermore, this indicator is more useful than population, as it enables direct comparison between the regions. As the population measure was used to construct some of the other variables, the original population density had to be transformed using logarithmic transformation to normalize the variable and to avoid multicollinearity with other variables.

- NGOs_Per_Capita - weighted number of active enterprises per capita in a NUTS 2 region in respective year in the NACE sector Q88. This is the sector of social work activities without accommodation, where most of the non-governmental organizations (NGOs) are classified. We excluded public sector organizations like hospitals (Q 86 NACE code), elderly care (Q 87 NACE code) and other public (governmental) social service providers.
- Startups_Per_Capita - weighted number of high growth enterprises per capita in a NUTS 2 region measured in employment (growth by 10% or more) in sectors of industry, construction and services except insurance activities of holding companies. It must be noted that Startups_Per_Capita calculated in this way does not allow us to see the actual age of the enterprises. The data on Startups_Per_Capita includes high growth SMEs which are present on the market for years so they cannot be considered as the ''young'' firms (startups can be considered as relatively young business ventures). Still, the majority of these enterprises are assumed to be relatively young SMEs (up to 3 years), as it is very difficult for a big company to

maintain a growth of employment higher than %10. So, we decided to name the variable as startups

4.2.2.2.Supply

Disposable income of people living in a region is considered as the pool of available money that a single inhabitant in a region could ideally invest/donate via local crowdfunding platforms. Hence, net disposable income of inhabitants is used as supply variable and we directly extracted it from Eurostat database, section: economic accounts, variable: nama_10r_2hhinc). The data on disposable income were divided by 1000, in order to get thousands of euros, for easier interpretation.

- Disposable_Income - purchasing power standard expressed in euros (000), based on final consumption per inhabitant living in NUTS 2 region in respective year

4.2.2.3.Regulation

Variable for regulation was constructed based on the existence of country`s laws that regulate the crowdfunding industry. The two reports used- "Crowdfunding in the EU Capital Markets Union" (2016) and "Review of Crowdfunding Regulation" (2014) are covering the legal frameworks including EU countries, with details of how crowdfunding of all types is treated under national regulation across Europe. These two reports were cross-referenced to identify if the country has adopted specific laws and regulations for separate treatment of crowdfunding industry and what is the exact year in which these regulations entered in force. There are no specific regulations on regional/local level, but only on national level, so national level data were assigned to respective NUTS 2 regions. Based on these data, we have operationalized the variable:

- Regulatory_Regime - binary variable is equal to 1 if there are active specific regulatory acts for crowdfunding in country/NUTS 2 region in respective year, and to 0 otherwise

4.2.2.4.Social norms

Social norms as a proxy for altruism is believed to positively influence entry in reward and donation segments, European Value Survey (EVS) data are used. There were missing values since there were no annual data for the period after 2008. Still, since these values are strongly embedded in cultural heritage, we expect that they do not differ significantly on annual basis. Therefore, the value extracted from the

survey in 2008 is used for the whole period of our analysis (2007-2015). Altruism is operationalized through the question from EVS: "To what extent do you feel concerned about the living conditions of- Q83.F All humans all over the world?". The respondents gave answer on scale from 1 to 5- with answers: 1) very much 2) much 3) to a certain extent 4) not so much 5) not at all. The data extracted at regional level included only the average value of respondents in region. By comparing the average value of response in a region with the modus value in EU-15 countries which equals to 3, a categorical (ordinal) variable is created:

- Altruism_Level - binary 0/1 variable, which measures the relative value of altruism level in comparison with EU-15 modus value. The variable equals to 1 for the regions where average value of respondents' answers on the given question was lower or equal to 3, i.e. regions with relatively lower/higher concern for humans worldwide, and to 0 otherwise.

4.2.2.5.Social behaviors

Four alternative variables were originally created to measure people`s propensity to use of Internet and Web based technologies. The variables of broadband internet access, internet selling, social network use and use of internet banking were included in original model. They were directly extracted from Eurostat database, section: information society, variable: isoc_r_iuse_i. After initial analysis, we found an evidence of multicollinearity between these 4 variables and selected only one to include in final models. As crowdfunding phenomenon has a strong online social component (Colombo et al., 2015), we taught that social network use is the variable that is a good representative of changing social behaviors that could affect entry in the crowdfunding industry.

- Social_Networks_Use - percentage of individuals participating in social networks (creating user profile, posting messages or other contributions to Facebook, Twitter, etc.) at NUTS 2 regional level.

4.2.2.6.Firm Density in the crowdfunding industry

Firm density is defined as density of incumbent crowdfunding platforms operating in a region. We operationalized it through the ratio of total active platforms (derived from our research) and the total population within one region. As the number of active platforms is very low comparing to population,

for better interpretation of data, the original ratio is multiplied by 1000000, to get data easier for interpretation (values closer to 1). Thus:

- CF_Platforms_Density - number of total active crowdfunding platforms divided on 1000000 inhabitants living in a NUTS 2 region in a respective year.

4.2.2.7.Substitute service providers

Firms from financial sectors are seen as substitute services providers and their number is extracted from Eurostat database, section: business demography, variable: bd_hgnace2_r3. Similarly, as in variables of NGOs_Per_Capita and Startups_Per_Capita, the data was available only on national level, so same weights and scaling method is used to derive data on the regional level (see above). Hence the variable:

- Financials_Per_Capita - weighted number of active enterprises per capita at regional NUTS 2 level in respective year operating in financial service activities, except insurance, pension funding, activities of holding companies

4.2.3. Control variables

We have identified 3 control variables that could drive entry into the crowdfunding industry. We controlled for changing overall economic development that could impact entrepreneurial entry through GDP per capita variable extracted through Eurostat database, section: economic accounts (variable: nama_10r_2gdp). The data on GDP per capita were divided by 1000, in order to get thousands of euros, for easier interpretation. Secondly, we controlled for overall entrepreneurial activity derived through the Global Entrepreneurship Monitor (GEM) data, as the factor that shows how much opportunities prospective entrepreneurs perceived and try to exploit on the market. Finally, we included a full set of year dummy variables to account for the unobserved effect of time on our dependent variable. The names and explanations of control variables follow:

- GDP_Per_Capita - euro per inhabitant (000) of gross domestic product (GDP) at current market prices in a NUTS 2 region in respective year.
- Entrepreneurial_Activity - number of inhabitants (000) that are actively involved in setting up their business or have done so in the last 42 months in a NUTS 2 region in respective year.
  The variable is derived as the multiplication of percentage of working population that is starting or started their business in a period of 42 months (data is obtained from GEM) and the

population at regional level (data is obtained from Eurostat). It is worth noting that the data extracted from GEM was available only on national level, so the data is used to create and to extend variables at regional level.

- Dummy_Years - seven dummy variables which refers to a period from 2008-2015.

All the independent and control variables are one year lagged. We test our hypotheses assuming that regional drivers of entry would approximately take one year to have an impact on the firms entering the crowdfunding industry. Additionally, the model could be negatively affected as one of the independent variable (density of the active crowdfunding platforms) is directly related to the entry rate in given year, so this could lead to wrong conclusions.

As most of the data were downloaded from secondary sources; for several variables and, in particular, for NGOs_Per_Capita, Startups_Per_Capita and Financials_Per_Capita, we had some missing data issues. In order to solve this, we imputed the missing data using the MS Office Excel software, function Trend. This function imputes the missing data according to the linear trend using the least square method. As some data were completely missing for a whole country, the Trend function could not be used and the regions were automatically excluded from analysis. For example, data for NGOs_Per_Capita were missing for Sweden, Denmark, Ireland and Greece; Startups_Per_Capita data were missing for Luxembourg; Financials_Per_Capita data were missing for Greece, thus regions from these countries were excluded from respective models.

4.3. Models

To conclude we have come up with 5 different models to analyze the influence of regional characteristics in the entry in crowdfunding industry. 5 models are constructed based on 5 dependent variables and then tested with one set of control and one set of control + independent separately, leading to the creation of 5 different pairs of models. M1a, M1b, M2a, M2b, M3a, M3b, M4a, M4b, M5a and M5b. Each pair of models is referring to one type of dependent variable through which we tested our hypotheses. M1a and M1b explore the entry of firms in the crowdfunding industry as a whole, while pairs of models M2, M3, M4 and M5 refer to entry into a specific segment of the industry- reward;

donation; equity; lending, respectively. The independent variables used for M1 models are then subsequently used as control variables for the remaining models. Table 6 shows all the proposed models and hypotheses built.

Table 6:The overview of proposed models

Model: Negative Binomial Regression			M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
Dependent Variables		Entry_All	X	X								
		Entry_Reward			X	X						
		Entry_Donation					X	X				
		Entry_Equity							X	X		
		Entry_Lending									X	X
Control Variables		Entrepreneurial_Activity	X	X	X	X	X	X	X	X	X	X
		GDP_Per_Capita	X	X	X	X	X	X	X	X	X	X
		Dummy_Years	X	X	X	X	X	X	X	X	X	X
Hypothesis tested & Explanatory Var.	HA1a	Population_Density		X	X	X	X	X	X	X	X	X
	HC2	Social_Networks_Use		X	X	X	X	X	X	X	X	X
	HD	CF_Platforms_Density		X	X	X	X	X	X	X	X	X
	HA2	Disposable_Income		X	X	X	X	X	X	X	X	X
	HA1b	NGOs_Per_Capita				X		X				
	HC1	Altruism_Level				X		X				
	HA1c	Startups_Per_Capita								X		X
	HE	Financials_Per_Capita								X		X
	HB	Regulatory_Regime								X		X

5. CHAPTER 5 - RESULTS & DISCUSSION

In Table 7 & Table 8, we show the descriptive statistics of all the variables that are included in our models. For each variable used, we have displayed its mean, standard deviation, minimum, maximum and the number of valid observations. The table also includes the Bivariate Pearson correlation coefficients. Most of our control and explanatory variables are correlated with the 5 entry rates, meaning that our initial assumptions about factors affecting entry in crowdfunding industry make sense. To make sure that there is no multi-collinearity, we have performed additional collinearity diagnostics on controls and explanatory variables. Specifically, we computed the variance inflation factors (VIF). The maximum VIF value does not exceed 1,50 which is in the acceptable threshold (O`brien, 2007).

Table 7: Overview of descriptive statistics – N, Mean, Standard Deviation, Minimum and Maximum of estimates

No	Variable	N.	Mean	Standard Dev.	Min.	Max.
1	Entry All	1712	0.358	1.508	0	30
2	Entry Reward	1712	0.123	0.592	0	9
3	Entry Donation	1712	0.105	0.510	0	10
4	Entry Equity	1712	0.081	0.479	0	9
5	Entry Lending	1712	0.068	0.362	0	7
6	Entrepreneurial_Activity_000	1712	112.470	96.368	1.419	687.137
7	GDP_Per_Capita_000	1712	29.198	10.911	11.200	119.000
8	CF_Platforms_Density	1712	0.467	1.468	0	25.781
9	Disposable_Income_000	1704	16.204	2.962	7.700	26.700
10	Social_Networks_Use	1704	0.374	0.130	0.00	0.720
11	Population_Density	1712	2.230	0.553	0.409	4.024
12	NGOs_Per_Capita	1488	472.999	711.174	11.596	6279.239
13	Financials_Per_Capita	1608	203.704	229.947	22.611	1143.005
14	Startups_Per_Capita	1704	362.120	212.996	30.472	1777.312

Table 8: Overview of Descriptive Statistics - Pearson Bivariate Correlation Coefficients

No	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Entry All	1	0.809	0.856	0.830	0.739	0.389	0.444	0.575	0.232	0.122	0.308	0.076	0.081	0.071
2	Entry Reward	0.809	1	0.546	0.513	0.544	0.312	0.335	0.461	0.196	0.087	0.215	0.038	0.040	0.032
3	Entry Donation	0.856	0.546	1	0.731	0.521	0.318	0.355	0.484	0.178	0.086	0.259	0.045	0.058	0.060
4	Entry Equity	0.830	0.513	0.731	1	0.495	0.328	0.391	0.453	0.190	0.080	0.279	0.088	0.122	0.059
5	Entry Lending	0.739	0.544	0.521	0.495	1	0.284	0.388	0.535	0.210	0.149	0.262	0.095	0.058	0.074
6	Entrepreneurial_Activity_000	0.389	0.312	0.318	0.328	0.284	1	0.171	0.200	0.239	0.084	0.374	-0.043	-0.156	0.129
7	GDP_Per_Capita_000	0.444	0.335	0.355	0.391	0.388	0.171	1	0.473	0.623	0.311	0.332	0.300	0.445	0.076
8	CF_Platforms_Density	0.575	0.461	0.484	0.453	0.535	0.200	0.473	1	0.180	0.287	0.315	0.181	0.211	0.074
9	Disposable_Income_000	0.232	0.196	0.178	0.190	0.210	0.239	0.623	0.180	1	0.140	0.290	0.271	-0.116	-0.024
10	Social_Networks_Use	0.122	0.087	0.086	0.080	0.149	0.084	0.311	0.287	0.140	1	0.171	0.216	0.331	-0.028
11	Population_Density	0.308	0.215	0.259	0.279	0.262	0.374	0.332	0.315	0.290	0.171	1	0.059	-0.049	0.036
12	NGOs_Per_Capita	0.076	0.038	0.045	0.088	0.095	-0.043	0.300	0.181	0.271	0.216	0.059	1	0.386	-0.030
13	Financials_Per_Capita	0.081	0.040	0.058	0.122	0.058	-0.156	0.445	0.211	-0.116	0.331	-0.049	0.386	1	-0.101
14	Startups_Per_Capita	0.071	0.032	0.060	0.059	0.074	0.129	0.076	0.074	-0.024	-0.028	0.036	-0.030	-0.101	1

Table 9: Negative binomial model estimates of entry into 4 segments of crowdfunding industry – control variables

Dependent Variables		Entry All		Entry Reward		Entry Donation		Entry Equity		Entry Donation	
Models		M1a	M1b	M2a	M2b	M3a	M3b	M4a	M4b	M5a	M5b
Control Variables	Dummy Years=2008	-0.900**	-0.811*	-2.355**	-2.362**	-0.015	-0.050	-1.470*	-1.374^{+}	0.039	-0.748
		(0.350)	(0.391)	(0.867)	(0.868)	(0.631)	(0.638)	(0.743)	(0.818)	(0.697)	(0.722)
	Dummy Years=2009	-0.793*	-0.694*	-1.529*	-1.510*	0.607	0.588	-1.692*	-1.577*	-1.261	-2.050*
		(0.320)	(0.351)	(0.629)	(0.627)	(0.537)	(0.541)	(0.685)	(0.759)	(0.857)	(0.877)
	Dummy Years=2010	0.199	0.205	0.321	0.312	0.914^{+}	0.880^{+}	-1.142^{+}	-1.001	0.562	-0.175
		(0.266)	(0.294)	(0.455)	(0.455)	(0.508)	(0.513)	(0.639)	(0.707)	(0.519)	(0.543)
	Dummy Years=2011	0.725**	0.737**	0.952*	0.934*	1.192*	1.178*	0.274	0.408	0.098	-0.604
		(0.248)	(0.268)	(0.424)	(0.424)	(0.490)	(0.493)	(0.449)	(0.529)	(0.537)	(0.561)
	Dummy Years=2012	0.826***	0.847***	0.858*	0.854*	1.205**	1.190**	0.916*	1.077*	0.551	-0.117
		(0.232)	(0.243)	(0.407)	(0.407)	(0.459)	(0.461)	(0.363)	(0.444)	(0.436)	(0.458)
	Dummy Years=2013	1.153***	1.145***	1.446***	1.442***	1.434***	1.440***	0.575	0.676	1.008**	0.392
		(0.224)	(0.231)	(0.378)	(0.378)	(0.443)	(0.445)	(0.374)	(0.426)	(0.379)	(0.403)
	Dummy Years=2014	0.888***	0.831***	1.303***	1.296***	1.179**	1.157*	0.332	0.495	0.745^{+}	0.185
		(0.233)	(0.239)	(0.387)	(0.387)	(0.454)	(0.454)	(0.396)	(0.432)	(0.390)	(0.412)
	Entrepreneurial_Activity_000	0.007***	0.007***	0.006***	0.006***	0.006***	0.006***	0.007***	0.006***	0.006***	0.006***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
	GDP_Per_Capita_000	0.057***	0.037***	0.031**	0.032**	0.039***	0.039***	0.020	0.004	0.025^{+}	0.023
		(0.005)	(0.009)	(0.012)	(0.012)	(0.012)	(0.012)	(0.014)	(0.015)	(0.014)	(0.015)

(Standard errors in parentheses: +p <0.10, * p <0.05, ** p <0.01, *** p <0.001)

Table 10: Negative binomial model estimates of entry into 4 segments of crowdfunding industry – explanatory variables

Dependent Variables		Entry All		Entry Reward		Entry Donation		Entry Equity		Entry Donation	
Models		M1a	M1b	M2a	M2b	M3a	M3b	M4a	M4b	M5a	M5b
Explanatory Variables Hypotheses tested	CF_Platforms_Density - **HD**		0.093*	0.070	0.068	0.056	0.034^{+}	0.097	0.103^{+}	0.049	0.027
			(0.047)	(0.054)	(0.054)	(0.059)	(0.056)	(0.063)	(0.060)	(0.066)	(0.059)
	Disposable_Income_000 - **HA2**		-0.012	-0.035	-0.040	-0.044	-0.064	0.078	0.158*	0.059	0.065
			(0.030)	(0.042)	(0.043)	(0.046)	(0.046)	(0.053)	(0.062)	(0.054)	(0.062)
	Social_Networks_Use - **HC2**		-0.147	-3.382**	-3.270**	-0.743	-1.226	-1.332	-2.241	4.373**	3.610*
			(0.743)	(1.119)	(1.140)	(1.162)	(1.198)	(1.386)	(1.521)	(1.463)	(1.613)
	Population_Density - **HA1a**		0.685***	0.861***	0.865***	0.905***	0.928***	0.411	0.526^{+}	0.702**	0.752**
			(0.148)	(0.208)	(0.207)	(0.220)	(0.219)	(0.266)	(0.276)	(0.265)	(0.269)
	Altruism_Level - **HC1**				-0.281		-0.581^{+}				
					(0.260)		(0.311)				
	NGOs_Per_Capita - **HA1b**				0.000		0.000*				
					(0.000)		(0.000)				
	Regulatory_Regime - **HB**								-0.452		1.910**
									(0.426)		(0.690)
	Financials_Per_Capita - **HE**								0.002**		0.001
									(0.001)		(0.001)
	Startups_Per_Capita - **HA1c**								0.000		0.000
									(0.001)		(0.001)

(Standard errors in parentheses: +p <0.10, * p <0.05, ** p <0.01, *** p <0.001)

5.1. Demand- effects on regional entry

Our first hypothesis (HA1a) assumes that there is a positive impact of population density on the entry rate in all segments of crowdfunding industry. The results indicate that the hypothesis is fully supported. The coefficients of Population_Density are always positive, and the significance level is very high ($p<0,001$) in the model M1b and pairs of models M2 and M3, very significant ($p<0,01$) in pair of model M5, and marginally significant in M4b with value $p=0,057$, so very close to threshold value. Hence, Population_Density is a significant predictor of entry in all segments of the industry in general, and specifically, significant entry predictor for the entry of firms in reward, donation and lending segments of the crowdfunding industry. Conversely, Population_Density is only a weak predictor of entry in the equity segment.

Let us now elaborate more on what could be the reason behind this minor deviation in obtained results, when compared to other types of crowdfunding platforms. One of the possible explanations could be that equity platforms are usually seen as the pool of professional investors and not just regular project backers. These active members of equity crowdfunding platforms, are on average, investing higher amounts of money per project than project backers active on the other types of platforms (Massolution Crowdfunding Report, 2015). Therefore, we might expect that population density of investors and not the general population density of all inhabitants within a region, could better explain entry in the equity segment. Another possible explanation for this result is that the demand for equity crowdfunding platforms could be driven by other monetary based indicators, which we will discuss in details below.

HA1b hypothesizes that number of NGOs operating in a region, is positively affecting the entry of firms in the reward and donation segment of the crowdfunding industry. HA1b is weakly supported for the entry of firms in the donation segment(M3b), as significant statistical evidence ($p<0,05$) is found for NGOs_Per_Capita and dependent variable Entry_Donation. It implies that the number of NGOs operating in a region positively affects the entry of firms in the donation segment of crowdfunding industry in the same geographical region. This result may be better understood if combined with additional qualitative evidence. By doing a brief quantitative check on *Eppela*, one of the biggest reward/donation platform in Italy, we saw that around 13% of currently active projects are started by either non-profit organizations or profit organizations that launched a social campaign. Furthermore,

another large Italian donation platform, *Rete del dono*, is specialized on projects proposed by initiators coming from a third and non-profit sector. Additionally, Anzivino & Baldassarre (2015) highlight that online crowdfunding platforms could be another tool for non-profit sector for empowering and improving their fundraising activities. Hence, our results are aligned with all being stated above, so we can conclude that regions with a higher number of NGOs involved in social work as primary activity, are more attractive for firms to enter in the donation segment of crowdfunding industry. The same assumption is not supported for the firms` entry in the reward segment. This could be due to the fact that NGOs usually do not produce any product/service that they could offer as an attractive tangible reward for project backers. Additionally, the goals of NGOs are strictly focused on social problems, so there is an alignment in goals with the donation platforms. Conversely, reward platforms and their project initiators, do not have strictly social goals, but also commercial ones. This difference in goals could be another explanation why NGOs_Per_Capita is not found to be a significant predictor of the entry of firms in the reward segment at regional level.

A similar logic was used to test hypothesis HA1c and the relation between Startups_Per_Capita, as they are assumed to be a demand driver for the entry of firms in the equity and lending segments and positively affect their entry rate within a region. HA1c is not supported, as in models M4b and M5b, the coefficients of Startups_Per_Capita are negative (although very close to 0) and their significance value is well above minimum threshold. We believe that the quality of the data we used could explain this unexpected result. The explanatory variables (NGOs_Per_Capita and Startups_Per_Capita) used to test both HA1b and HA1c are derived from national data and then weighted using regional population, and not the actual data at regional level (like in case of Population_Density). Thus, we consider that inaccurate data and it`s unavailability on the regional level have led to this deviation in the expected results, and not the wrong theoretical assumptions.

5.2. Supply- effects on regional entry

According to HA2, higher disposable income of inhabitants within a region is assumed to have a positive effect on entry in all the segments of the crowdfunding industry. The results obtained across all 5 pairs of models, show that in reward and donation-based models, the coefficients of Disposable_Income are negative, although not statistically significant (both p values are higher than 0,1). Conversely, the

coefficients in the equity and lending models (M4 and M5) are positive. However, Disposable_Income is statically significant (p=0,011) only in model M4b. Hence, HA2 is only supported for the equity segment and not for other types of platforms.

In our opinion, the deviation from expected results may be again due to the difference between equity platforms and the remaining platforms in the minimum and average amount of money provided by project backers. Equity crowdfunding platforms usually require much higher minimum investment and a track record of prospective project backers (the investors). Consequently, the average amount of money invested per capita is much higher than in the other types of platforms (European Commission, 2014). For example, on most donation platforms the minimum donation is 1€, while in the most equity platforms, the minimum investment range from 10€ to 1000€, and the average investment on one of the largest EU-15 platform, *Crowdcube*, is around 2000€. Thus, equity platforms require the prospective investors to have a higher disposable income. Conversely, donating or giving money via reward or donation platforms, do not require such a high disposable income. Hence, the difference in the profile of project backers and the higher mean investment per project could explain why Disposable_Income is found to be a statistically significant predictor of entry only in the equity segment of the industry (model M4b).

5.3. Regulations- effects on regional entry

HB1 assumes that the crowdfunding regulations enacted by the government in a region negatively affect entry in the equity and lending segments. The results show that Regulatory_Regime is negatively affecting entry only in the lending segment.

Indeed, in model M5b, Regulatory_Regime has a very significant (p=0,006), negative coefficient. Conversely, in model M4b, the coefficient of Regulatory_Regime is not significant (p=0,289). In most of the EU-15 countries, until the specific regulation on crowdfunding became active, most of the lending and equity platforms were operating in a "grey" zone, usually indirectly regulated by financial market regulations (European Crowdfunding Network, 2014). But also, most of the regulations are specifically made for equity and lending platforms/firms, as they are similar to the financial sector, so it is in the interest of the policy-makers to have a regulated field. Therefore, the obtained results are pretty puzzling as in the both segments, the same negative and significant effect is expected, but we obtained

it only for the lending segment. This puzzling result could not be explained by the data we possess, so the answer to it should be seek in getting more qualitative data (e.g. interviewing the founders of lending and equity platforms to identify the effect of regulation on their business and peers). Therefore, hypothesis HB1 can only be partially supported for the entry of firms in the lending segment of the crowdfunding industry and not supported for the entry of firms in the equity segment.

5.4. Social norms and behavior- effects on regional entry

Socio-cultural values that could influence the entry in the crowdfunding industry (HC1 and HC2), are tested using explanatory values Altruism_Level and Social_Network_Use. HC1 in only weakly supported, as the coefficient of Altruism_Level is positive but the significance level is low (p=0,062) in model M3b. Conversely, the coefficient of Altruism_Level is not significant in M4b, hence HC1 is not supported.

As donation platforms almost always have non-monetary goals and support initiative or people in need, it is quite clear why the regions with higher Altruism_Level could be more attractive for donation platform`s entry. Rewards-based platforms, on other side, are very diverse and they can offer a vast range of products and services as a reward for backers (similarly as in case of comments on deviation in results of HA1b), explaining why Altruism_Level is not a significant predictor of entry in this segment of the crowdfunding industry.

HC2 refers to relationship between the use of Internet technologies and the entry of all types of crowdfunding platforms, and it cannot be supported, due to contradictory results obtained. In case of the reward segment, the effect of Social_Network_Use on entry is negative and statistically very significant in both models M2a and M2b ($p<0,01$). Oppositely in models M5a and M5b in the lending segment, the coefficients of Social_Network_Use are positive with statistically significant level $p<0,01$ and $p<0,05$ respectively. Hence, HC2 is supported only for the entry of firms in the lending segment of the crowdfunding industry, but the negative effect is another puzzling insight. The quality and availability of the data on Social_Network_Use, combined with some external/non-observed factors that affected Entry_Reward, could provide a possible explanation for the unexpected results obtained. Roughly 20% of the data on Social_Network_Use were missing and had to be imputed. Most of these data are missing for the years before 2010, as EU-15 countries did not measure this indicator at that time, with the only exception of Denmark. That is why we had to apply function Trends in MS Excel to

extrapolate and automatically impute values, mostly for the 2008-2010 period. In this period, most of the currently active players entered in the reward segment of the industry. This can be seen by looking at the Dummy_Years variables in models M2a and M2b, as there is a statistically significantly difference ($p<0,05$) in entry rate when comparing years 2008 and 2009. Incomplete data on Social_Network_Use before 2010 and the entry of reward platforms in years 2008 and 2009, could be a potential reason behind the deviation in the obtained results regarding the entry of firms in the reward segment of crowdfunding industry at regional level.

5.5. Existing crowdfunding platforms- effects on regional entry

According to HD1, the density of existing crowdfunding platforms will positively affect the entry in all segments of the crowdfunding industry in a given region. The coefficient of CF_Platforms_Density is positive and statistically significant ($p<0,05$) only in the model M1b, which refers to the industry as a whole, and weakly significant ($p<0,1$) for the equity segment. In general, it proves that regions with higher density of active platforms will attract more entrants within a region, not dependently on the type of the platform. However, if we take a closer look and break down overall entry in the crowdfunding industry (a pair of model M1) into the specific segment entries (pair of models M2, M3, M4 and M5), we see that CF_Platforms_Density is not a significant predictor of entry in reward, donation, or lending segments of the industry. However, there is a marginal significance in the equity segment, indicating that HD1 can be partly supported for this segment. It means that the equity platforms/firms are willing to enter even the saturated regions. If we take a look at the equity platforms as the pool of professional investors and make analogy with other professional investments like venture capital firms, it is already demonstrated by Chen et al. (2010) that venture capital firms are entering areas (cities) that are already saturated in the in terms of number of firms operating.

5.6. Substitute service providers- effects on regional entry

HE1 hypothesizes that number of financial firms operating in a region, is negatively affecting entry in the equity and lending segments. The results show that in Model M5b, the coefficient of Financials_Per_Capita is positive, but not significant ($p=0,212$), while in model M4b, it is positive and highly significant ($p<0,01$). Hence, hypothesis HE1 is supported only for the equity segment.

Hence, it can be concluded that financial firms in a region will stimulate entry in the equity segment, and not limit it. Similarly like in the case of regulation (HB1), we were expecting that Financials_Per_Capita will be significant and positive both for entry in lending and equity segment. We could make wide guesses about this deviation in expected results, but currently we are not able to provide a firm scientific conclusion about this result, although it may be at least partially due to the variable derivation method. It is important to highlight that Financials_Per_Capita is constructed in the same way as variables NGOs_Per_Capita and Startups_Per_Capita, as the data is derived from national level, and then weighted using regional population to proxy for regional variable. Thus, we consider that our theoretical assumptions are correct, but the unavailability of the actual data at regional level has led to these deviations in the expected results.

5.7. Robustness tests and results overview

To ensure that the results we obtained are robust, we performed two additional tests. In our robustness check models we focused on CF_Platforms_Density because this variable had the highest deviation from our theoretical assumptions and was not coherent with the results obtained by prior studies (Wang et al., 2014; York & Lenox, 2014; McKendrick et al., 2003).

The first robustness check was performed by re-running our estimates after replacing the independent variable CF_Platforms_Density with Density_Reward in models M2a and M2b; Density_Donation in models M3a and M3b; Density_ Equity in models M4a and M4b; Density_Lending in models M5a and M5b. To build these new variables we used the same logic for creating CF_Platforms_Density, but the total number of platforms was replaced by the actual numbers in the reward, donation, equity and lending segments of the crowdfunding industry, respectively. The new explanatory variables were thus computed as:

- Density_Reward/Donation/Equity/Lending - logarithm with base 10 of the average number of total/reward/donation/equity/lending active platforms on 1000000 inhabitants in the focal NUTS 2 region in the focal year.

The results of the robustness check can be found in Appendix C and Appendix D. In the Table 11, we performed a summary of these results and a comparison in terms of significance level between, to see

for any potential deviation between main models and models obtained in the first robustness check. The results in the first robustness check. The critical comments on these comparison of results follows. It suggests that only Population_Density is a driver of entry in any segments of the industry. Additionally, each segment has its own predictors of entry. Most of the coefficients and significance levels of the remaining explanatory variables did not change, with a couple of exceptions. In the donation segment, NGOs_Per_Capita lost significance (although the p value is still close to 0,1), thus indicating that support to hypothesis HA1b is weak. Second, Density_Donation is significant, thus indicating that entry in the donation segment depends on the segment`s density. Maybe the intensification of the competition due to the increased number of active firms does not have a negative impact on the entry of players in the donation segment as many firms that launched donation platforms were operating a non-profit business model (46% according to our dataset) so they were less concerned about competition than for-profit firms. Conversely, the firms that entered the other 3 segments of the industry were operating almost exclusively a for-profit business model (reward segment- 86%, equity segment- 95% and lending segment- 95%). Therefore, firms operating a donation platform are not deterred from entry by already crowded out region, but perceive it as a good region to enter, maybe because people in the region are already familiar with the crowdfunding services. Furthermore, they would be attracted to use crowdfunding services on non-profit platforms/firms more, due to the alignment of social goals of project initiated on donation platforms and their non-profit business model.

We found another difference in the model in the equity segment, where Population_Density became significant, thus allowing more support for hypothesis HA1a in this segment. On the other side, Density_Equity lost its significance in the first robustness test, confirming again that the positive effect of density-dependence cannot be fully supported.

Table 11: Robustness test model 1: comparison of results obtained in the first robustness test with the results of the main statistical model

	Entry All		Entry Reward		Entry Donation		Entry Equity		Entry Lending	
	Main Model	Robust. C.	Main model	Robust. C.	Main model	Robust. C.	Main model	Robust. C.	Main model	Robust. C.
Entrepreneurial_activity_000	significant	significant	significant	significant	significant	significant	significant	significant	significant	significant
GDP_Per_capita_000	significant	significant	significant	significant	significant	significant	NS	NS	NS	significant
CF_Platforms_Density vs Density R/D/E/L[@]	significant	significant	NS	NS	NS	significant	marginally significant	NS	NS	NS
Disposable_Income_000	NS	NS	NS	NS	NS	NS	significant	significant	NS	NS
Social_Networks_Use	NS	NS	(-) significant	(-) significant	NS	NS	NS	NS	significant	significant
Population_Density	significant	significant	significant	significant	significant	significant	marginally significant	significant	significant	significant
Altruism_Level (High)			NS	NS	marginally significant	marginally significant				
NGOs_Per_Capita			NS	NS	significant	NS				
Regulatory Regime (Yes)							NS	NS	(-) significant	(-) significant
Financials_Per_Capita							significant	significant	NS	NS
Startups_Per_Capita							NS	NS	NS	NS

(p <0.05 significant, p <0.1 marginally significant, NS - not significant)

@- Density_R/D/E/L- Density_Reward, Density_Donation, Density_Equity, Density_Lending

Then, we decided to test for the non-linearity of the effect of firm density in the crowdfunding industry. In particular, we recognized that relationship between the CF_Platforms_Density and entry of firms might be inverse U-shaped. Indeed, until the crowdfunding industry is not overcrowded with firms, density might positively affect entry. But the entry rate may grow up to the point the firms` density becomes too high and platforms start competing with each other for resources (i.e., communities of project backers and initiators). Since most resources are found in relative geographical proximity (Mendes-Da-Silva et al., 2016), firms managing the platforms are competing on local level. From that point on, further increases in density, might negatively affect the entry rate.

To test for this possible inverse U-shaped relationship, we included an additional variable in our statistical models:

- Squared_CF_Density - squared number of the total active crowdfunding platforms divided on 1000000 inhabitants living in a NUTS 2 region in a respective year (i.e. the squared value of CF_Platforms_Density).

The inclusion of the Squared_CF_Density together with CF_Platforms_Density in main models represents or second robustness check we performed and the comparison of the results with main models can be found in Table 12. As we can see, the significance level of the respective variables changed: CF_Density_Platforms became a significant predictor in the reward, donation, equity and lending segments, in comparison with main model where the same variable was only significant in the Entry_All model and marginally significant in Entry_Lending model. Additionally, the coefficients were negative significant for the Squared_CF_Density, leading us to the conclusion that there could be an inverted U-shape relationship between the firm density and entry of firms. To further test this assumption, we performed additional analysis explained below.

Starting from the equation 1 typically used to test for U-shaped relationship, we have decided to simplify main models with exclusion of all other independent and control variables except the CF_Density_Platforms, as they are not influencing the mathematical properties of X-Y relationship (Haans et al., 2015).

$$Y = \beta_0 + \beta_1 X + \beta_2 X^2$$

Equation 1: The simple regression model used to test for the U-shaped relationship

Therefore, we use only the CF_Platforms_Density as the X variable and 5 dependent variables Entry_All/Reward/Donation/Equity/Lending as the Y variables. Additionally, we created the linear regression model, and not the negative binomial distribution, which is tested also in the IBM SPSS 23 software. The three step method proposed by Lind & Mehlum (2010) requires that for the inverted U-shaped relationship that β_2 needs to be significant and negative in the first step. After initial analysis (the complete results can be found in Appendix E and Appendix F) the β_2 initial was significant only for the Entry_Donation indicating a potential inverted U-shape relationship between entry in donation segment of the industry and firm density in the crowdfunding industry at regional level. It also led us to the conclusion that inverted U-shaped relationship effect of crowdfunding firm`s density could not be supported for Entry_All, Entry_Reward, Entry_Equity, Entry_Lending.

On the other hand, for variable Entry_Donation, we have proceeded to the second step, which required that the slope must be sufficiently steep at the both ends of the data range. If we suppose that X_L is the low end and X_H the high end of X range (CF_Density_Platforms), the slope at the X_L must be positive and significant[6], and the slope at the X_H must be negative and significant. The slopes equations are:

$$\beta_1 + \mathrm{X}_L \, 2 \, \beta_2$$

$$\beta_1 + \mathrm{X}_H \, 2 \, \beta_2$$

Equation 2: First derivatives-slopes of the equation 1 for low end X_L and high end X_H of the X range

To get the X_H and X_L we have used the 85th percentile and 15th percentile respectively of the subset of the dataset. The two subsets were created by excluding data with the CF_Density_Platforms=0, as 15th percentile before exclusion, so no slope could be identified as the values were constant (X=0). The low end X_L and high end X_H subsets contain contained 88 observations each, and after running the analysis for the second step, we got the results that do not support the inverted U-shape relationship. The slope coefficient for the X_L was not significant, while for the slope test X_H was marginally significant ($p<0,1$), but opposite sign than expected (the estimate obtained is positive). Therefore, hypothesis about inverted U-shape relationship could also not be supported neither for the entry of donation platform,

[6] Significance level is set at the 95%, while marginal significance level is set at the 90%.

and we did not proceed to the third step (step 3: checking if the turning point is well within the X data range) of the method for testing inverted U-shape relationship. So, no inverted U-shape relationship is found between the entry of firms and firm density in the crowdfunding industry at the regional level.

Thus, let us go back to the comments of the results of second robustness test and it`s comparison with the original results (Table 12). As we can see, most of the significance levels initially obtained stayed in similar range, giving more support to the robustness of our models. In the donation segment, the changes of the significance levels, are the same like in the first robustness check model, so we can make similar conclusions. NGOs_Per_Capita lost its significance, for example but still is very close to marginal significance level (p=0,17), similarly like in robustness check 1 results.

Table 12: Robustness test model 2: comparison of results obtained in the second robustness test with the results of the main model

	Entry All		Entry Reward		Entry Donation		Entry Equity		Entry Lending	
	Main model	Robust. C.	Main model	Robust. C.	Main model	Robust. C.	Main model	Robust. C.	Main model	Robust. C.
Entrepreneurial_activity_000	significant	significant	significant	significant	significant	significant	significant	significant	significant	significant
GDP_Per_capita_000	significant	significant	significant	significant	significant	significant	NS	NS	NS	marginally significant
CF_Platforms_Density	significant	significant	NS	significant	NS	significant	marginally significant	significant	NS	significant
Squared_CF_Density		(-) significant		(-) significant		(-) significant		(-) significant		(-) significant
Disposable_Income_000	NS	NS	NS	NS	NS	NS	significant	significant	NS	NS
Social_Networks_Use	NS	NS	(-) significant	(-) significant	NS	NS	NS	NS	significant	significant
Population_Density	significant	significant	significant	significant	significant	significant	marginally significant	NS	significant	marginally significant
Altruism_Level (High)			NS	NS	marginally significant	marginally significant				
NGOs_Per_Capita			NS	NS	significant	NS				
Regulatory Regime (Yes)							NS	NS	significant	significant
Financials_Per_Capita							significant	marginally significant	NS	NS
Startups_Per_Capita							NS	NS	NS	NS

(p <0.05 significant, p <0.1 marginally significant, NS: not significant).

Finally, Population_Density, that in the first robustness check lost its significance, in the second check it became significant again. The explanation behind this can be found in the fact that in the second robustness check models, both CF_Density_Platforms and its squared value (i.e. Squared_CF_Density) are included, so there could be a multi-collinearity issue (the variance inflation factors showed values higher than 4.5). Since in the main model, the variable was marginally significant, we conclude that the HA1a is weakly supported and should be double-checked. Entry into equity seems driven by the wealth of people in a region (due to higher average investment per capita on the equity platforms than on the other 3 types), rather than the number of people living in the region. This result is also backed up by the second robustness check as Disposable_Income did not change the significance level and remained a major predictor of entry into the equity segment of crowdfunding industry.

On the other hand, Financials_Per_Capita partly lost its significance level, but we reckon that this is not a major change. Same goes for the Population_Density in the lending segment, which also lost a part of its significance level.

To sum up, most of the key results remained the same, thus speaking in favor of the robustness of main model results and allowing us to confirm the initial findings. In the following, we reported our research hypotheses and the outcomes of the econometric analyses, also including the results of two robustness checks in the Table 13.

For comprehension of the symbols inside of the table please refer below to the legend of the Table 13 where the overview of results is presented. For that reason, we implemented a special indictor (labelled with the sign "R!") signaling in case the one or both robustness test models revealed a change in a significance level in comparison to main model.

Table 13: The results summary with the overview of research hypotheses

HYPOTHESES	Reward segment	Donation segment	Equity segment	Lending segment
HA1a: The number of inhabitants in a geographical area will positively affect the entry in all 4 segments of the crowdfunding industry in the area.	S.	S.	S. R!	S.
HA1b: The number of NGOs operating in geographical area will positively affect entry in the donation and reward segments of the crowdfunding industry in the area.	N.S.	S. R!		
HA1c: The number of start-ups in a geographical area will positively affect entry in the equity and lending segments of the crowdfunding industry in the area.			N.S.	N.S.
HA2: The disposable income of inhabitants in a geographical area will positively affect the entry in all segments of the crowdfunding industry in the area.	N.S.	N.S.	S.	N.S.
HB1: Stricter crowdfunding regulations in a geographical area will negatively affect the entry in equity and lending segments of the crowdfunding industry in the area.			N.S.	S.
HC1: The higher prevalence of altruism among people in a geographical area will positively affect entry into donation and reward segments of the crowdfunding industry in the area.	N.S.	S.		
HC2: The higher share of people in a geographical area who regularly use Internet will positively affect entry in all segments of the crowdfunding industry in the area.	N.S.	N.S.	N.S.	S.
HD1: Density of the crowdfunding platforms in a geographical area will positively affect entry in all segments of the crowdfunding industry in the area.	N.S.	N.S.	S. R!	N.S.
HE1: Higher number of financial institutions in a geographical area will negatively affect entry in equity and lending segments of the crowdfunding industry in the area.			S.	N.S.

LEGEND- Symbols abbreviations:

1. S. - means that the respective hypothesis is statistically supported in the main model and also in the robustness check models.
2. S.R! - means that the respective hypothesis is statistically supported in the main model but not supported in the robustness check models
3. N.S. - means that the respective hypothesis is not statistically supported in the main model, neither/or in the robustness check models.
4. Blank field - means that the respective hypothesis was not tested (included in the models) in the given segment of the crowdfunding industry

6. CHAPTER 6 - CONCLUSIONS

6.1. Purpose, Research Methods & Key Results

The purpose of this master dissertation was to identify the local characteristics that influence entry in the crowdfunding industry in EU-15 countries. In so doing, we distinguished the drivers of entry in the 4 segments of the industry (i.e., reward, donation, equity and lending segments).

To develop the research framework, we relied on two major literature streams. First, we used the literature on crowdfunding to identify the fundamental theoretical concepts that need to be included in our research framework when analyzing the industry of crowdfunding, i.e. crowdfunding intermediaries. We also used this theory to separate between 4 segments of the crowdfunding industry. Second, we relied on the literature on industry emergence (including institutional theory, evolutionary economics and organizational ecology) to identify the determinants of entry in an emerging industry.

Grounded on this framework, we considered 6 factors that might influence entry in the crowdfunding industry, namely demand for crowdfunding services, supply for crowdfunding services, regulations, social norms and behaviors, existing crowdfunding platforms (i.e. internal rivalry) and substitute service providers. Then, we developed 9 research hypotheses on the influence of regional characteristics on firm`s entry in the 4 segments of the crowdfunding industry.

These hypotheses were tested through the estimates of Negative Binomial Regression models. The analysis was performed using the IBM SPSS 23 software package. Out of 9 above mentioned hypotheses, one is fully supported, 6 are partly supported[7] and 2 are not supported. The overview of the results can be found in Table 13 in previous chapter of this dissertation.

As to demand, we found that Population_Density is a driver of entry for any types of platforms, and is a key predictor with the only exception of the equity segment. The positive effect of Population_Density is in line with Tamasy (2006) and Armington & Acs (2002). Then we found that the number of NGOs is an important driver of entry for the donation segment. The justification of this result can be found in

[7] Partly supported means that there is a statistically significant proof for at least one of the segments of the crowdfunding industry, but not for all the segments considered in the hypothesis.

social goal`s alignment, but also in the fact a crowdfunding platform can be an innovative tool for fundraising activities, so act also as important pool of project backers for donation platforms. However, this result was not supported in the robustness model test, probably due to problems with the measures used.

On the supply side, only disposable income of inhabitants within the region is a significant predictor of entry in the equity segment of the industry. Despite this insight being in line with prior studies (Tamasy, 2006), we expected that disposable income would be a predictor of entry for the whole industry. We explain this result arguing that the average investment on equity crowdfunding platforms is significantly higher than the average pledge in other types of platforms, hence more money is needed to become a project backer on the equity platforms.

Our results indicate that regulation has a negative effect on the entry in the lending segment. This is a puzzling result as a negative effect was assumed especially for the equity segment. To understand this result we would need to interview directly platform`s founder, to get more information on the raised question.

The obtained results on effects of the Altruism_Level is proven to be a predictor of entry in the donation segment, which is align with other scholars` findings in the area of social values (York and Lenox, 2014). On the side of social behaviors, social network usage is found to be a significant predictor in the lending segment (an expected result). Oppositely, social network usage is found to be a negative predictor in the reward segment (rather opposite result from expected), another result that we cannot easily explain, but could be a partly due to the treatment of the missing data.

Our estimates indicate that entry is positively affected by the number of crowdfunding firms (i.e. density in the crowdfunding industry) operating within a region. This is coherent with the results obtained by York & Lenox (2014), Wang et al. (2014) and McKendrick et al. (2003). Conversely, specific segment`s density has a positive and significant effect only for the equity segment. The possible explanation behind that is that the equity platforms/firms are attracting professional investors as the main population of project backers. As, professional investors like venture capitals firms are prone to high concertation inside of the big cities (Chen et al., 2010). Taking into account this reasoning, equity platform`s founders are launching their platforms in regions rich with population of investors, i.e. cities. And since the highest

overall density of crowdfunding platforms is within regions of big cities, it could explain why the density is found to positively affect the entry only in this segment.

However, if we include in our models specific segment`s field density (e.g. density of firms operating a reward platform only), we found that only in the donation segment, the firm`s entry would be positively affected by increased segment`s field density, i.e. variable: Density_Donation. As donation firms are usually operating a non-profit business model, the internal rivalry is less emphasized between them, and does not negatively affects prospective firm`s entry, like is the case in other segments, where respective firms are usually operating a for-profit model.

Regarding substitute service providers, the obtained results allow us to say that higher number of financial firms will positively affect the entry into the equity segment of the industry, but not in lending segment, although we expected a negative effect on the entry in both segments. The reason behind this result could be provided by using aggregation and knowledge spillover theory (Boschma et al., 2013; Buenstorf et al., 2010). If we look at the crowdfunding industry as the new industry emerged from financial markets, knowledge spillovers and employee mobility within a financial sector could be a source of valuable information to prospective founders of platforms and would motivate them to enter in related segments. This explains the positive effect (opposite from our initial assumptions), but the obtained results prove the positive effect only in the equity segment, but not a lending segment, which is another deviation that we could not explain completely.

To sum up, the results of our econometric estimates prove that most of our theoretical assumptions were correct, but several hypotheses were supported only for some specific segments of the crowdfunding industry. Still, thank to that we were able to better distinguish between specific drivers that influence the European firms to enter in reward, donation, equity and lending segment of this emerging industry on the regional level. As the main determinant of regional entry into industry, population density is found to be a significant predictor of firm`s entry, which is a logical explanation why most of the crowdfunding platforms are launched in big European cities such as London, Berlin, Paris, Milano, and Munich. Speaking about the donation segment, very interesting insight is found in the fact that Non-Governmental Organizations which provide social services within a geographical region are positively affecting the firms` entry rate in this segment of crowdfunding industry.

Additionally, regions with relatively higher level of altruism and care for the well-being of inhabitants in their surroundings are more likely to have higher entry rate of donation platforms. Rather unexpected results were obtained in the reward segment of the crowdfunding industry. It is shown that NUTS 2 regions with higher use of Internet social networks will have a decreased number of entries in the reward segment. However, this result should be carefully considered as it might be influenced by the treatment of the missing data. Economically richer regions, with higher disposable income per capita, well developed financial sector and saturated firm density are particularly prone to entry of firms that operate equity crowdfunding platforms. And interestingly, stricter regulations do not prevent the entry of firms in the equity segment, like in case of lending segment of crowdfunding industry where the entry is significantly decreased by imposed stricter and more specific regulatory acts to the crowdfunding sector. On the other hand, higher use of social networks among inhabitants within a region is positively affecting the firms` entry, i.e. can attract more firms to enter into the lending segment.

6.2. Contribution to academic literature and implications

From the academic perspective, our study contributes to two research streams, namely the literature on crowdfunding and the literature on the emergence of new industries.

Literature on crowdfunding - crowdfunding intermediaries are under investigated in the crowdfunding literature as most scholars are focusing on either crowdfunding campaigns and their success (Colombo et al., 2015; Giudici et al., 2013; Lin et al., 2009) or project backers' characteristics and motivations (Hildebrand et al., 2016; Lin et al., 2014; Gerber et al., 2012). As a consequence, these studies do not explain why a new firm should be motivated to enter into the crowdfunding industry. Second, the majority of the extant studies focus on a single crowdfunding platform or a single geographical area (e.g., a single country), thus they do not take into account the "big picture" of the crowdfunding platform`s ecosystem and dynamics. Third, as crowdfunding originated in the USA and the companies managing the largest and most successful crowdfunding platforms are located in the USA, crowdfunding literature is USA-centric. Conversely, the present dissertation studies the crowdfunding industry in EU-15 countries. Dushnitsky et al. (2016) focused on the same countries and identified a

series of national-level drivers of entry in the 4 segments of the crowdfunding industry in EU-15 countries, but our study goes deeper, identifying drivers at the regional level.

Literature on industry emergence - studies on entry in emerging industries are either focusing on the entry in a specific industry (Pacheco et al., 2014; York & Lenox, 2014; Wang et al., 2014; Buenstorf et al., 2010) or on the general determinants of entry in a specific geographical area (Naudé et al., 2008; Tamasy, 2006; Armington & Acs, 2002). These studies exhibit two key gaps: 1) the industry is sometimes too broad as it may consist of firms that differ a lot in terms of size, business model, strategy, so it could be difficult to disentangle entry determinants for such diverse types of firms, especially in case of emerging industries which can attract both de-novo and de-alio firms; 2) explaining firm`s entry at regional level, without taking into account the specific industry, but taking the overall industrial activity (firm`s entry from every sector of industry together) is useful when it comes to identifying patterns in entrepreneurial activity. But on the other hand, this approach is not very precise, as it does not allow to explain the actual entry determinants within a n industry and the process of specific industry emergence, which is much more useful/informative, when compared to analysis of the overall entry in all industries together.

To bridge these gaps, we have combined the two approaches by analyzing the regional determinants of firms` entry in each segment of the industry separately and not in the industry as a whole. In this way, we are able to disentangle the effects of regional characteristics both on the whole industry and on specific industry segments level. Analyzing separately entry in each industry segment could provide much more information on the determinants of entry in the industry. Additionally, it should be noted that segments of a specific industry could be constructed using different logic/methodology, like: type of market categories served within industry, size of the firm, position in the supply chain, technology used or business strategy used. We used only one methodology for classification, based on the crowdfunding platform`s type (4 basic types), but the logic proposed is appropriate to use in the other industry as well. The segmentation criteria and potential entry drivers should be determined on basis of specific characteristics of the respective industry. Hence, by identifying drivers on the industry segment level, scholars could obtain more useful insights on patterns firm`s entry of industry emergence. By applying this more detailed approach to explain firm`s entry, it is possible to identify the differences in entry determinants across different industry segments, and to act accordingly on them.

Our dissertation might have relevant implications for both managers and policy makers. First, it could be very useful for entrepreneurs that are already operating (or planning to launch) an online crowdfunding platform, as it could provide them with valuable insights on which regions are particularly attractive for specific types of platforms. Second, our study contains important information for European policy makers that are in charge of regional economic and entrepreneurial ecosystem development. Crowdfunding platforms are an important mechanism for funding SMEs, the companies which are driving the economic growth of advanced countries. Therefore, policy makers should be aware of the regional characteristics that could stimulate/inhibit firms to launch crowdfunding platforms, so that they can manage their policies accordingly.

6.3. Limitations & Further Research Directions

Our study also has some limitations that could serve as directions for further research. The main limitation is that data collected on some explanatory variables were not available on NUTS 2 regional level, so we had to adapt variables computed at the national level using weights like number of inhabitants or number of business entities in the region (Startups_Per_Capita, Financials_Per_Capita, NGOs_Per_Capita in our case). More complete data with less missing values at the regional level would surely improve the quality of the statistical models and better explain the deviation between expected and obtained results in some of our hypotheses.

The second limitation is that our research is focused only on firm`s entry in the crowdfunding industry, but do not explain their success (or failure) on the market. Firm entry is important from economical and entrepreneurial perspective, but capturing also firms` success after entry would provide much more valuable insights. Therefore, this is definitely a primary research direction that should be taken in the future to improve the study.

Finally, our approach to decompose the industry into segments and study the entry determinants for each segment separately has not been done in other industries before, so we do not have a benchmark we could compare our results with. Hence, more empirical studies are encouraged, especially in the area of emerging industries that could back up our theoretical reasoning and obtained results. Further, it would enable to identify the differences between various emerging industries and support the process of identifying different entry patterns in other emergent industries, that are created in the era of digital

technologies. This dissertation could be an initial spark for implementing a new research perspective when approaching the analysis of entry within emerging industries.

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APPENDIX A: Sources of Crowdfunding Platforms

Appendix 1: Sources of Crowdfunding Platforms

WEBSITE SOURCES	
Crowdfunding Associations	Short Description
http://danskcrowdfundingforening.dk/	Association aimed at promoting crowdfunding in Denmark
http://web.spaincrowdfunding.org/	Spanish association of players in the crowdfunding segment
http://www.austriancrowdfundingnetwork.at/	Austrian association of players in the crowdfunding segment
http://www.equitycrowdfund.eu/	European equity crowdfunding association
http://www.europecrowdfunding.org/	Professional network connecting European crowdfunding platforms to promote transparency, (self) regulation and governance
http://www.germancrowdfunding.net/	German Crowdfunding Network, association representing the interests of those individuals and businesses that deal with crowdfunding or offer crowdfunding services in Germany
http://www.ukcfa.org.uk/	UK crowdfunding association
Other Websites	Short Description
http://anentrepreneuriallife.com/crowdfunding-sites-the-ultimate-list-for-entrepreneurs/	List of worldwide crowdfunding sites and platforms specifically for entrepreneurs interested in equity and debt based funding
http://crowdingin.com/	Directory of crowdfunding platforms that facilitate individuals or organizations in the UK raising money from the crowd

http://prezi.com/-qjciz4yc6ul/overview-on-crowdfunding-in-finland/	Overview on the crowdfunding segment in Finland
http://thecrowdfundingcentre.com/	Website providing a directory of worldwide crowdfunding platforms, daily and weekly charts and news
http://www.1819.be/fr/blog/le-crowdfunding-en-belgique-prend-des-ailes	Press article on the crowdfunding segment in Belgium
http://www.crowdfunding.de/	Portal aimed at providing information on the crowdfunding segment in Germany
http://www.crowdfunding-berlin.com/	Portal devoted to exploring and promoting crowdfunding and crowd investing in Berlin
http://www.crowdfundingconferenceseminar.com/media-libarary-crowdfunding_planning-Conference-cloud_based_business_planning-crowdfunding_softwarecrowdfunding-crowdfunding_exchange/List-of-crowd-founding-sitess	List of more than 500 worldwide Crowd Funding portals or Crowd Funding related websites
http://www.crowdfundingguide.com/	Website offering news, advice, and articles on a variety of topics relevant to crowdfunding
http://www.crowdfundingnetwork.eu/	EU initiative aimed at fostering the crowdfunding environment in Europe by acquiring data and knowledge about the current status of the web related crowdfunding sector in Europe
http://www.crowdfundinsider.com/	News and information web site covering the global industry of alternative finance including crowdfunding and peer to peer lending
http://www.crowdmapped.com/	Global geo-location based crowdfunding site
http://www.crowdsourcing.org/	Source of crowdsourcing and crowdfunding information, insight and research

http://www.douwenkoren.nl/crowdfunding-in-nederland/	Website of a company offering crowdfunding consultancy services and providing data on crowdfunding in Netherlands
http://www.dynamique-mag.com/article/sites-web-crowdfunding-france.5237	Analysis of crowdfunding sites in France by Dynamique Entrepreneuriale, a monthly magazine providing top managers and entrepreneurs with information useful to make their companies grow
http://www.finanzaaziendale.polimi.it/equitycf/equitycf.html	Website providing constantly updated information about equity crowdfunding in Italy
http://www.forbes.com/sites/groupthink/2013/04/23/crowdfunding-in-europe-the-top-10-peer-to-peer-lenders/	Analysis of the The Top 10 'Peer-to-Peer' Lenders in Europe provided by Forbes
http://www.impulsopositivo.com/content/crowdfunding-em-crescimento-em-portugal	Analysis of the crowdfunding segment in Portugal provided by Impulso Positivo
http://www.independent.ie/lifestyle/crowdfunding-companies-in-ireland-29417104.html	List of crowdfunding companies in Ireland provided by the Irish news site Independent.ie
http://www.slideshare.net/eteigland/crowdfunding-in-sweden?related=1	Results of a study on crowdfunding in Sweden realized by scholars of the Stocholm School of Economics
http://www.slideshare.net/GijsbertKoren/visions-on-the-future-of-crowdfunding-in-europe	Analysis of the future of crowdfunding in Europe, published by FR Prospektiv (France), twintangibles (Italy), ikosom (Germany) and Douw & Koren (the Netherlands)
http://www.slideshare.net/italiancrowdfunding/2014-analisidelle-piattaformeitalianedicrowdfundingcastrataropais	Analysis of Italian crowdfunding platforms provided by the Italian Crowdfunding Network (http://italiancrowdfunding.tumblr.com/)
http://www.slideshare.net/myofibre/listof-crowdfundingwebsitesandmuchmore?qid=15b45175-4277-4de6-9259-dbb39335bea0&v=qf1&b=&from_search=5	List of worldwide crowdfunding websites provided by a biotech-pharma business consultant

http://www.thecrowdcafe.com/	Website that publishes research, data and analysis on the global crowdfunding segment

APPENDIX B: Total entry and active platforms in all the regions of EU-15 Countries (our research)

Appendix 2: Total entry and active platforms in all the regions of EU-15 Countries (our research)

NUTS2 CODE	REGIONS	Total Entry (2008 -2015)	Total Active at 31.12.2015	Entry in Segments				
				Equity only	Reward only	Donation only	Lending only	Mixed only
BE10	Région de Bruxelles Capitale/Brussels Hoofdstedelijk Gewest	10	6	1	2	3	2	2
BE21	Prov. Antwerpen	1	1	0	0	0	0	1
BE22	Prov. Limburg (BE)	2	2	1	1	0	0	0
BE23	Prov. Oost-Vlaanderen	2	2	0	1	0	0	1
BE24	Prov. Vlaams-Brabant	1	1	1	0	0	0	0
BE25	Prov. West-Vlaanderen	0	0	0	0	0	0	0
BE31	Prov. Brabant Wallon	2	2	1	1	0	0	0
BE32	Prov. Hainaut	0	0	0	0	0	0	0
BE33	Prov. Liège	0	0	0	0	0	0	0
BE34	Prov. Luxembourg (BE)	0	0	0	0	0	0	0
BE35	Prov. Namur	0	0	0	0	0	0	0
DK01	Hovedstaden	6	6	1	2	2	1	0
DK02	Sjælland	0	0	0	0	0	0	0
DK03	Syddanmark	0	0	0	0	0	0	0
DK04	Midtjylland	0	0	0	0	0	0	0
DK05	Nordjylland	1	1	0	0	1	0	0
DE11	Stuttgart	3	3	0	2	0	0	1
DE12	Karlsruhe	1	1	0	1	0	0	0
DE13	Freiburg	0	0	0	0	0	0	0
DE14	Tübingen	3	1	1	1	0	0	1
DE21	Oberbayern	18	17	4	5	3	4	2

DE22	Niederbayern	1	1	0	1	0	0	0
DE23	Oberpfalz	1	1	1	0	0	0	0
DE24	Oberfranken	2	2	1	0	0	1	0
DE25	Mittelfranken	0	0	0	0	0	0	0
DE26	Unterfranken	1	1	0	1	0	0	0
DE27	Schwaben	0	0	0	0	0	0	0
DE30	Berlin	33	28	7	12	6	4	4
DE40	Brandenburg	0	0	0	0	0	0	0
DE50	Bremen	0	0	0	0	0	0	0
DE60	Hamburg	8	6	0	2	0	6	0
DE71	Darmstadt	13	12	5	1	2	4	1
DE72	Gießen	0	0	0	0	0	0	0
DE73	Kassel	1	0	0	1	0	0	0
DE80	Mecklenburg-Vorpommern	1	1	0	0	0	0	1
DE91	Braunschweig	0	0	0	0	0	0	0
DE92	Hannover	1	0	1	0	0	0	0
DE93	Lüneburg	1	1	0	1	0	0	0
DE94	Weser-Ems	1	1	1	0	0	0	0
DEA1	Düsseldorf	5	5	3	0	2	0	0
DEA2	Köln	5	5	2	1	0	1	1
DEA3	Münster	2	2	1	0	1	0	0
DEA4	Detmold	1	1	0	0	0	0	1
DEA5	Arnsberg	4	4	1	1	1	0	1
DEB1	Koblenz	1	1	0	0	1	0	0
DEB2	Trier	0	0	0	0	0	0	0
DEB3	Rheinhessen-Pfalz	1	1	0	0	0	1	0
DE00	Saarland	1	1	1	0	0	0	0
DED2	Dresden	5	5	1	1	0	2	1
DED4	Chemnitz	0	0	0	0	0	0	0
DED5	Leipzig	1	1	0	0	0	0	1
DEE0	Sachsen-Anhalt	1	1	0	1	0	0	0
DEF0	Schleswig-Holstein	2	1	0	1	1	0	0
DEG0	Thüringen	0	0	0	0	0	0	0
IE01	Border, Midland and Western	2	2	1	0	0	0	1

IE02	Southern and Eastern	5	5	0	4	0	1	0
ES11	Galicia	0	0	0	0	0	0	0
ES12	Principado de Asturias	0	0	0	0	0	0	0
ES13	Cantabria	0	0	0	0	0	0	0
ES21	País Vasco	2	1	0	0	2	0	0
ES22	Comunidad Foral de Navarra	1	1	1	0	0	0	0
ES23	La Rioja	0	0	0	0	0	0	0
ES24	Aragón	1	1	0	1	0	0	0
ES30	Comunidad de Madrid	14	11	0	5	4	2	3
ES41	Castilla y León	0	0	0	0	0	0	0
ES42	Castilla-La Mancha	1	1	0	1	0	0	0
ES43	Extremadura	0	0	0	0	0	0	0
ES51	Cataluña	26	20	5	6	4	5	6
ES52	Comunidad Valenciana	3	3	0	2	0	0	1
ES53	Illes Balears	1	1	0	1	0	0	0
ES61	Andalucía	4	4	0	0	0	1	3
ES62	Región de Murcia	0	0	0	0	0	0	0
ES63	Ciudad Autónoma de Ceuta	0	0	0	0	0	0	0
ES64	Ciudad Autónoma de Melilla	0	0	0	0	0	0	0
ES70	Canarias	1	1	0	1	0	0	0
FR10	Île de France	82	68	19	21	21	10	11
FR21	Champagne-Ardenne	0	0	0	0	0	0	0
FR22	Picardie	0	0	0	0	0	0	0
FR23	Haute-Normandie	0	0	0	0	0	0	0
FR24	Centre	0	0	0	0	0	0	0
FR25	Basse-Normandie	1	1	1	0	0	0	0
FR26	Bourgogne	0	0	0	0	0	0	0

FR30	Nord - Pas-de-Calais	7	6	0	5	1	0	1
FR41	Lorraine	0	0	0	0	0	0	0
FR42	Alsace	1	1	0	0	1	0	0
FR43	Franche-Comté	0	0	0	0	0	0	0
FR51	Pays de la Loire	3	3	0	2	1	0	0
FR52	Bretagne	2	2	0	0	0	1	1
FR53	Poitou-Charentes	1	1	0	0	0	1	0
FR61	Aquitaine	4	2	1	1	2	0	0
FR62	Midi-Pyrénées	5	5	1	1	0	1	2
FR63	Limousin	0	0	0	0	0	0	0
FR71	Rhône-Alpes	4	3	1	1	1	0	1
FR72	Auvergne	0	0	0	0	0	0	0
FR81	Languedoc-Roussillon	1	1	1	0	0	0	0
FR82	Provence-Alpes-Côte d'Azur	3	2	1	2	0	0	0
FR83	Corse	0	0	0	0	0	0	0
FR91	Guadeloupe	0	0	0	0	0	0	0
FR92	Martinique	0	0	0	0	0	0	0
FR93	Guyane	0	0	0	0	0	0	0
FR94	Réunion	0	0	0	0	0	0	0
ITC1	Piemonte	6	6	0	1	3	1	1
ITC2	Valle d'Aosta/Vallée d'Aoste	0	0	0	0	0	0	0
ITC3	Liguria	1	1	1	0	0	0	0
ITC4	Lombardia	27	25	11	7	3	1	5
ITH1	Provincia Autonoma di Bolzano/Bozen	0	0	0	0	0	0	0
ITH2	Provincia Autonoma di Trento	2	2	0	1	1	0	0
ITH3	Veneto	0	0	0	0	0	0	0
ITH4	Friuli-Venezia Giulia	0	0	0	0	0	0	0
ITH5	Emilia-Romagna	4	4	0	3	1	0	0
ITI1	Toscana	2	2	0	1	0	0	1

ITI2	Umbria	0	0	0	0	0	0	0
ITI3	Marche	2	2	1	1	0	0	0
ITI4	Lazio	1	0	0	0	1	0	0
ITF1	Abruzzo	0	0	0	0	0	0	0
ITF2	Molise	0	0	0	0	0	0	0
ITF3	Campania	3	2	0	1	0	0	2
ITF4	Puglia	4	4	2	2	0	0	0
ITF5	Basilicata	0	0	0	0	0	0	0
ITF6	Calabria	1	1	0	1	0	0	0
ITG1	Sicilia	0	0	0	0	0	0	0
ITG2	Sardegna	0	0	0	0	0	0	0
LU00	Luxembourg	2	1	1	1	0	0	0
NL11	Groningen	0	0	0	0	0	0	0
NL12	Friesland (NL)	2	2	0	0	2	0	0
NL13	Drenthe	1	0	0	1	0	0	0
NL21	Overijssel	4	4	1	0	1	1	1
NL22	Gelderland	4	4	0	0	0	1	3
NL23	Flevoland	1	1	0	0	0	1	0
NL31	Utrecht	14	13	0	4	3	4	3
NL32	Noord-Holland	33	28	4	6	14	1	8
NL33	Zuid-Holland	5	5	0	1	2	2	0
NL34	Zeeland	2	2	0	1	1	0	0
NL41	Noord-Brabant	18	13	5	2	6	4	1
NL42	Limburg (NL)	3	2	2	1	0	0	0
AT11	Burgenland (AT)	0	0	0	0	0	0	0
AT12	Niederösterreich	0	0	0	0	0	0	0
AT13	Wien	12	12	2	2	4	3	1
AT21	Kärnten	0	0	0	0	0	0	0
AT22	Steiermark	3	3	1	0	0	1	1
AT31	Oberösterreich	0	0	0	0	0	0	0
AT32	Salzburg	0	0	0	0	0	0	0
AT33	Tirol	1	1	0	0	1	0	0
AT34	Vorarlberg	0	0	0	0	0	0	0
PT11	Norte	3	2	0	2	1	0	0
PT15	Algarve	0	0	0	0	0	0	0
PT16	Centro (PT)	0	0	0	0	0	0	0

PT17	Lisboa	5	4	0	2	2	1	0
PT18	Alentejo	0	0	0	0	0	0	0
PT20	Região Autónoma dos Açores	0	0	0	0	0	0	0
PT30	Região Autónoma da Madeira	0	0	0	0	0	0	0
FI19	Länsi-Suomi	1	1	0	0	0	1	0
FI1B	Helsinki-Uusimaa	8	8	4	0	0	2	2
FI1C	Etelä-Suomi	0	0	0	0	0	0	0
FI1D	Pohjois- ja Itä-Suomi	0	0	0	0	0	0	0
FI20	Åland	0	0	0	0	0	0	0
SE11	Stockholm	10	8	1	1	4	3	1
SE12	Östra Mellansverige	0	0	0	0	0	0	0
SE21	Småland med öarna	0	0	0	0	0	0	0
SE22	Sydsverige	2	1	0	1	1	0	0
SE23	Västsverige	1	1	0	1	0	0	0
SE31	Norra Mellansverige	0	0	0	0	0	0	0
SE32	Mellersta Norrland	0	0	0	0	0	0	0
SE33	Övre Norrland	0	0	0	0	0	0	0
UKC1	Tees Valley and Durham	1	1	0	1	0	0	0
UKC2	Northumberland and Tyne and Wear	2	2	1	0	0	1	0
UKD1	Cumbria	0	0	0	0	0	0	0
UKD3	Greater Manchester	2	2	0	0	1	1	0
UKD4	Lancashire	1	0	0	1	0	0	0
UKD6	Cheshire	2	2	1	1	0	0	0
UKD7	Merseyside	1	1	0	0	0	1	0
UKE1	East Yorkshire and Northern Lincolnshire	1	0	0	0	0	1	0
UKE2	North Yorkshire	0	0	0	0	0	0	0
UKE3	South Yorkshire	0	0	0	0	0	0	0

UKE4	West Yorkshire	2	1	0	0	1	1	0
UKF1	Derbyshire and Nottinghamshire	1	1	0	1	0	0	0
UKF2	Leicestershire, Rutland and Northamptonshire	0	0	0	0	0	0	0
UKF3	Lincolnshire	0	0	0	0	0	0	0
UKG1	Herefordshire, Worcestershire and Warwickshire	2	1	0	1	1	0	0
UKG2	Shropshire and Staffordshire	1	1	0	0	0	1	0
UKG3	West Midlands	2	2	0	1	0	1	0
UKH1	East Anglia	3	3	2	0	1	0	0
UKH2	Bedfordshire and Hertfordshire	1	1	0	1	0	0	0
UKH3	Essex	1	1	1	0	0	0	0
UKI1	Inner London	107	88	23	27	21	19	17
UKI2	Outer London	1	0	0	0	0	1	0
UKJ1	Berkshire, Buckinghamshire and Oxfordshire	6	6	0	1	0	2	3
UKJ2	Surrey, East and West Sussex	4	3	1	0	1	2	0
UKJ3	Hampshire and Isle of Wight	3	3	0	1	0	2	0
UKJ4	Kent	1	1	1	0	0	0	0
UKK1	Gloucestershire, Wiltshire and Bristol/Bath area	4	4	0	1	1	2	0
UKK2	Dorset and Somerset	0	0	0	0	0	0	0
UKK3	Cornwall and Isles of Scilly	3	2	0	2	0	1	0
UKK4	Devon	1	1	1	0	0	0	0
UKL1	West Wales and The Valleys	1	1	1	0	0	0	0
UKL2	East Wales	2	2	0	0	1	1	0
UKM2	Eastern Scotland	2	2	1	0	0	1	0

UKM3	South Western Scotland	2	1	0	0	1	0	1
UKM5	North Eastern Scotland	0	0	0	0	0	0	0
UKM6	Highlands and Islands	0	0	0	0	0	0	0
UKN0	Northern Ireland	3	3	2	0	0	1	0
EL11	Ανατολική Μακεδονία, Θράκη (Anatoliki Makedonia, Thraki)	0	0	0	0	0	0	0
EL12	Κεντρική Μακεδονία (Kentriki Makedonia)	0	0	0	0	0	0	0
EL13	Δυτική Μακεδονία (Dytiki Makedonia)	0	0	0	0	0	0	0
EL14	Θεσσαλία (Thessalia)	0	0	0	0	0	0	0
EL21	Ήπειρος (Ipeiros)	0	0	0	0	0	0	0
EL22	Ιόνια Νησιά (Ionia Nisia)	0	0	0	0	0	0	0
EL23	Δυτική Ελλάδα (Dytiki Ellada)	0	0	0	0	0	0	0
EL24	Στερεά Ελλάδα (Sterea Ellada)	0	0	0	0	0	0	0
EL25	Πελοπόννησος (Peloponnisos)	0	0	0	0	0	0	0
EL30	Αττική (Attiki)	7	7	2	3	1	0	1
EL41	Βόρειο Αιγαίο (Voreio Aigaio)	0	0	0	0	0	0	0
EL42	Νότιο Αιγαίο (Notio Aigaio)	0	0	0	0	0	0	0
EL43	Κρήτη (Kriti)	0	0	0	0	0	0	0

APPENDIX C: Robustness Test 1 - *Negative binomial model estimates of entry into 4 segments of crowdfunding industry*

Appendix 3: Robustness Test 1: Negative binomial model estimates of entry into 4 segments of crowdfunding industry - Control Variables

Dependent Variables		Entry All		Entry Reward		Entry Donation		Entry Equity		Entry Donation	
Models		M1a	M1b	M2a	M2b	M3a	M3b	M4a	M4b	M5a	M5b
Control Variables	Dummy Years=2008	-0.900**	-0.655^{+}	-2.279**	-2.284**	0.100	0.024	-1.139	-0.915	0.511	-0.078
		(0.350)	(0.394)	(0.862)	(0.864)	(0.620)	(0.627)	(0.749)	(0.838)	(0.708)	(0.755)
	Dummy Years=2009	-0.793*	-0.549	-1.457*	-1.429*	0.705	0.659	-1.343^{+}	-1.118	-0.810	-1.396
		(0.320)	(0.354)	(0.623)	(0.620)	(0.525)	(0.528)	(0.687)	(0.777)	(0.864)	(0.900)
	Dummy Years=2010	0.199	0.314	0.348	0.343	0.965^{+}	0.904^{+}	-0.868	-0.629	0.913^{+}	0.365
		(0.266)	(0.298)	(0.449)	(0.449)	(0.496)	(0.500)	(0.647)	(0.726)	(0.532)	(0.579)
	Dummy Years=2011	0.725**	0.829**	0.951*	0.932*	1.197*	1.159*	0.458	0.690	0.298	-0.222
		(0.248)	(0.272)	(0.417)	(0.417)	(0.477)	(0.481)	(0.459)	(0.548)	(0.559)	(0.595)
	Dummy Years=2012	0.826***	0.909***	0.810*	0.807*	1.151**	1.124**	1.037**	1.280**	0.775^{+}	0.265
		(0.232)	(0.246)	(0.400)	(0.400)	(0.446)	(0.448)	(0.369)	(0.459)	(0.447)	(0.487)
	Dummy Years=2013	1.153***	1.164***	1.366***	1.365***	1.327**	1.326**	0.610	0.796^{+}	1.102**	0.639
		(0.224)	(0.234)	(0.369)	(0.369)	(0.428)	(0.431)	(0.379)	(0.436)	(0.384)	(0.421)
	Dummy Years=2014	0.888***	0.824***	1.198***	1.192**	0.977*	0.959*	0.381	0.598	0.724^{+}	0.276
		(0.233)	(0.240)	(0.376)	(0.376)	(0.435)	(0.438)	(0.391)	(0.432)	(0.386)	(0.420)
	Entrepreneurial_activity_000	0.007***	0.006***	0.006***	0.006***	0.006***	0.005***	0.006***	0.006***	0.006***	0.006***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
	GDP_Per_Capita_000	0.057***	0.038***	0.032**	0.033**	0.037**	0.038***	0.018	0.005	0.024^{+}	0.029^{+}
		(0.005)	(0.009)	(0.012)	(0.012)	(0.012)	(0.012)	(0.014)	(0.015)	(0.014)	(0.015)

Appendix 4: Robustness Test 1: Negative binomial model estimates of entry into 4 segments of crowdfunding industry - Explanatory Variables

Dependent Variables		Entry All		Entry Reward		Entry Donation		Entry Equity		Entry Donation	
Models		M1a	M1b	M2a	M2b	M3a	M3b	M4a	M4b	M5a	M5b
Explanatory Variables Hypotheses tested	CF_Platforms_Density - **HD**		0.290***	0.261**	0.269**	0.302***	0.266**	0.369***	0.333**	0.369***	0.314**
			(0.065)	(0.085)	(0.087)	(0.089)	(0.091)	(0.102)	(0.108)	(0.097)	(0.106)
	Squared_CF_Density - **HD1**		-0.014***	-0.010**	-0.011**	-0.014***	-0.012***	-0.014***	-0.011*	-0.017***	-0.014***
			(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
	Disposable_Income_000 - **HA2**		-0.011	-0.032	-0.037	-0.033	-0.052	0.092+	0.151*	0.068	0.043
			(0.030)	(0.043)	(0.043)	(0.046)	(0.046)	(0.054)	(0.063)	(0.055)	(0.063)
	Social_Networks_Use - **HC2**		-0.278	-3.580**	-3.373**	-0.900	-1.324	-1.344	-1.754	4.663**	4.528**
			(0.750)	(1.133)	(1.152)	(1.178)	(1.211)	(1.401)	(1.534)	(1.490)	(1.651)
	Population_Density - **HA1a**		0.566***	0.714***	0.717***	0.760***	0.792***	0.179	0.303	0.458+	0.469+
			(0.151)	(0.217)	(0.216)	(0.227)	(0.226)	(0.277)	(0.291)	(0.275)	(0.285)
	Altruism_Level - **HC1**				-0.294		-0.619+				
					(0.263)		(0.318)				
	NGOs_Per_Capita - **HA1b**				0.000		0.000				
					(0.000)		(0.000)				
	Regulatory_Regime - **HB**								-0.576		1.413*
									(0.427)		(0.648)
	Financials_Per_Capita - **HE**								0.001+		0.000
									(0.001)		(0.001)
	Startups_Per_Capita - **HA1c**								0.000		0.000
									(0.001)		(0.001)

APPENDIX D: Robustness Test 2 - *Negative binomial model estimates of entry into 4 segments of crowdfunding industry*

Appendix 5: Robustness Test 2: Negative binomial model estimates of entry into 4 segments of crowdfunding industry - Control Variables

Dependent Variables		Entry All		Entry Reward		Entry Donation		Entry Equity		Entry Donation	
Models		M1a	M1b	M2a	M2b	M3a	M3b	M4a	M4b	M5a	M5b
Control Variables	Dummy Years=2008	-0.900**	-0.811*	-2.379**	-2.385**	0.053	-0.004	-1.605*	-1.521^{+}	-0.123	-0.865
		(0.350)	(0.391)	(0.870)	(0.870)	(0.624)	(0.629)	(0.744)	(0.815)	(0.696)	(0.718)
	Dummy Years=2009	-0.793*	-0.694*	-1.552*	-1.532*	0.656	0.624	-1.835**	-1.720*	-1.485^{+}	-2.206*
		(0.320)	(0.351)	(0.629)	(0.627)	(0.534)	(0.536)	(0.685)	(0.757)	(0.861)	(0.875)
	Dummy Years=2010	0.199	0.205	0.321	0.311	0.927^{+}	0.888^{+}	-1.249*	-1.113	0.387	-0.306
		(0.266)	(0.294)	(0.456)	(0.455)	(0.507)	(0.510)	(0.638)	(0.705)	(0.516)	(0.538)
	Dummy Years=2011	0.725**	0.737**	0.949*	0.931*	1.203*	1.182*	0.188	0.320	-0.059	-0.724
		(0.248)	(0.268)	(0.423)	(0.424)	(0.489)	(0.491)	(0.447)	(0.527)	(0.534)	(0.555)
	Dummy Years=2012	0.826***	0.847***	0.844*	0.840*	1.215**	1.198**	0.861*	1.019*	0.427	-0.217
		(0.232)	(0.243)	(0.405)	(0.405)	(0.461)	(0.461)	(0.361)	(0.444)	(0.429)	(0.452)
	Dummy Years=2013	1.153***	1.145***	1.444***	1.438***	1.434***	1.437***	0.533	0.616	0.918*	0.307
		(0.224)	(0.231)	(0.376)	(0.376)	(0.449)	(0.449)	(0.371)	(0.424)	(0.375)	(0.401)
	Dummy Years=2014	0.888***	0.831***	1.304***	1.294***	1.121*	1.113*	0.346	0.504	0.758*	0.174
		(0.233)	(0.239)	(0.385)	(0.385)	(0.463)	(0.462)	(0.391)	(0.429)	(0.382)	(0.408)
	Entrepreneurial_activity_000	0.007***	0.007***	0.006***	0.006***	0.006***	0.005***	0.007***	0.006***	0.006***	0.007***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
	GDP_Per_capita_000	0.057***	0.037***	0.035***	0.035***	0.029**	0.032**	0.030*	0.013	0.039**	0.035*
		(0.005)	(0.009)	(0.011)	(0.011)	(0.011)	(0.011)	(0.012)	(0.014)	(0.014)	(0.015)

Appendix 6: Robustness Test 2: Negative binomial model estimates of entry into 4 segments of crowdfunding industry - Explanatory Variables

Dependent Variables		Entry All		Entry Reward		Entry Donation		Entry Equity		Entry Lending	
Models		M1a	M1b	M2a	M2b	M3a	M3b	M4a	M4b	M5a	M5b
Explanatory Variables Hypotheses tested	CF_Platforms_Density vs Density R/D/E/L - **HD**		0.093*	0.155	0.152	0.331**	0.246*	0.148	0.219	-0.340	-0.271
			(0.047)	(0.129)	(0.129)	(0.119)	(0.124)	(0.219)	(0.211)	(0.268)	(0.259)
	Disposable_Income_000 - **HA2**		-0.012	-0.039	-0.044	-0.015	-0.040	0.054	0.136*	0.032	0.041
			(0.030)	(0.042)	(0.042)	(0.046)	(0.047)	(0.050)	(0.060)	(0.052)	(0.060)
	Social_Networks_Use - **HC2**		-0.147	-3.252**	-3.169**	-1.202	-1.495	-1.202	-2.170	4.861***	4.074*
			(0.742)	(1.110)	(1.132)	(1.179)	(1.206)	(1.383)	(1.516)	(1.499)	(1.652)
	Population_Density - **HA1a**		0.685***	0.843***	0.847***	0.892***	0.912***	0.464^{+}	0.590*	0.710**	0.743**
			(0.148)	(0.210)	(0.209)	(0.223)	(0.221)	(0.263)	(0.276)	(0.263)	(0.268)
	Altruism_Level - **HC1**				-0.291		-0.565^{+}				
					(0.260)		(0.312)				
	NGOs_Per_Capita - **HA1b**				0.000		0.000				
					(0.000)		(0.000)				
	Regulatory_Regime - **HB**								-0.454		1.800**
									(0.425)		(0.655)
	Financials_Per_Capita - **HE**								0.002**		0.001
									(0.001)		(0.001)
	Startups_Per_Capita - **HA1c**								0.000		0.000
									(0.001)		(0.001)

APPENDIX E: Testing U-shaped Relationship - *Regression analysis of Equation 1 for 5 dependent variables*

Appendix 7: Step 1 – Testing U-shaped Relationship: Regression analysis of Equation 1 for 5 dependent variables

Coefficients[a] – Linear Regression						
Model		Unstand. Coefficients		Stand. Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0,114	0,034		3,350	0,001
	CF_Platforms_ Density	0,720	0,042	0,587	17,034	0,000
	Squared_CF_ Density	-0,001	0,003	-0,015	-0,422	0,673
a. Dependent Variable: Entry_All						

Coefficients[a] – Linear Regression						
Model		Unstand. Coefficients		Stand. Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0,048	0,014		3,357	0,001
	CF_Platforms _ Density	0,221	0,018	0,458	12,444	0,000
	Squared_CF_ Density	0,001	0,001	0,032	0,862	0,389
a. Dependent Variable: Entry_Reward						

Coefficients[a] – Linear Regression						
Model		Unstand. Coefficients		Stand. Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0,035	0,012		2,834	0,005
	CF_Platforms _ Density	0,209	0,016	0,506	13,474	0,000
	Squared_CF_ Density	-0,002	0,001	-0,065	-1,732	0,083
a. Dependent Variable: Entry_Donation						

Coefficients[a] – Linear Regression						
Model		Unstand. Coefficients		Stand. Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0,020	0,012		1,695	0,090
	CF_Platforms _ Density	0,177	0,015	0,455	12,172	0,000
	Squared_CF_ Density	0,000	0,001	0,008	0,212	0,832
a. Dependent Variable: Entry_Equity						

Coefficients[a] – Linear Regression						
Model		Unstand. Coefficients		Stand. Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0,015	0,008		1,766	0,078
	CF_Platforms _ Density	0,150	0,010	0,510	14,340	0,000
	Squared_CF_ Density	0,001	0,001	0,029	0,826	0,409
a. Dependent Variable: Entry_Lending						

APPENDIX F: Testing U-shaped Relationship - *Regression analysis of Equation 2 for dependent variable ''Entry_Donation'' (low-end subset and high-end subset)*

Appendix 8: Step 2 – Testing U-shaped Relationship: Regression analysis of Equation 2 for dependent variable ''Entry_Donation'' (low-end subset and high-end subset)

Coefficients[a] – Linear Regression						
Model		Unstand. Coefficients		Stand. Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0,417	0,246		1,696	0,094
	CF_Platforms _ Density	-0,700	0,821	-0,094	-0,852	0,397
a. Dependent Variable: Entry_Donation - [Low-end subset]						

Coefficients[a] – Linear Regression						
Model		Unstand. Coefficients		Stand. Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0,021	0,356		0,059	0,954
	CF_Platforms _ Density	0,191	0,054	0,417	3,549	0,001
a. Dependent Variable: Entry_Donation - [High-end subset]						