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**"WHEN THE CROWD BECOMES SHAREHOLDER: AN ENQUIRY ON  
ITALIAN EQUITY CROWDFUNDING INITIATIVES"**

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# INTRODUCTION

Crowdfunding is experiencing an increasing momentum in the global economic landscape. Although it represents a unique category of fundraising, with different vehicles, processes and goals (infoDev 2013), its underlying concept is neither so revolutionary nor so different from a traditional whip round (Osservatorio Crowdfunding 2016). Anyway, the coming of several disruptive events such as the Web 2.0 revolution, translated Crowdfunding into an innovative financing mechanism which is gaining always more attention from fund-seeking ventures.

Many different notions have been proposed with the aim of defining Crowdfunding, essentially developing a common conception that labels it as an internet-based open call for the provision of financial resources in order to support initiatives for specific purposes (Belleflamme, Lambert et al. 2014).

It is really challenging to assess what would have happened if no one started to recognize in crowds a potential source both of finance and innovation; what is acknowledged though, is that nowadays companies are giving external individuals always more importance in several core functions, contributing to the rapid spread of the crowd phenomenon in all its derivations.

Basically, Crowdfunding allows a large number of parties from different contexts to finance a project or a business by making a personal contribution, thus giving proponents the possibility to exploit their personal networks to raise funds. The innovation it provides could be found in its linkage to the crowd, implemented through dedicated platforms, that open new rooms for bridging investors' and fundraisers' communities. From a broad perspective, it is part of the recent wake of new forms of economic exchange which share common rationales including disintermediation through technological platforms, centrality of trust and reputation and connective dynamics (Pais, Castrataro 2014).

Provided that Crowdfunding encompasses different application models, this thesis focuses on the equity-based one; essentially, when a company wants to attract investments from individuals instead of credit institutes or private equity firms, this is called Equity Crowdfunding or Crowdinvesting (De Buysere, Gajda et al. 2012).

After the coming of 2008 crisis, traditional financing sources for startups and SMEs such as business angels, venture capitalists and banks, have become more risk averse; in this sense, some literatures have argued that Equity Crowdfunding could successfully fill in the financing gap which originated after the hardening of funders' selection processes. Actually, despite its recent birth, Equity Crowdfunding currently forms a consistent part of the whole Alternative Finance segment for several countries, acting as a new disintermediated source of

financing (Walthoff-Borm, Schwienbacher 2017), which seems able to impact funding processes of young businesses in a relevant way, especially in this “digital era”.

Although Italy was the first European country to develop a dedicated regulation for Equity Crowdfunding in 2013, the volumes recorded over its first years of existence have pushed analysts to wonder whether or not this tool could be as disruptive as expected in providing a positive spur to the Italian business fabric. However, a noteworthy lack in the literature about Italian Equity Crowdfunding has been devised, thus stimulating me in taking the challenge of developing a framework of analysis of the most significant research areas of the phenomenon; namely, the composition of the Italian platforms’ ecosystem and the characterization of Italian Equity Crowdfunding campaigns. While the former has been addressed essentially by examining platforms’ obtained performances and by investigating the presence of differences founded on a geographical basis, the latter has been tackled by devising common strategies among ventures looking for funds through Crowdfunding and by assessing the main features of campaigns which have experienced different outcomes from the implementation of Equity Crowdfunding.

With respect to the above-mentioned lack of available data about Italian Equity Crowdfunding, the development of this work required the creation of two different databases from scratch, one for platforms and one for campaigns; they have been entered with hand-collected information and thus exploited to conduct both descriptive and statistical enquiries.

For what concerns the platforms’ environment, descriptive analyses have been carried out with the aim of examining their recorded performances over different years and providing effective representations of both portals’ geographical and sectorial distributions. Obtained results highlighted the existence of a top-performer class which encompasses platforms that seem to operate at relevantly higher levels with respect to the others; circumstance which has been steadily confirmed from the outcomes provided by the Cluster analysis that has been conducted on the platforms’ dataset. Furthermore, a statistical approach has been utilized to investigate the existence of significant differences in platform’s performances with respect to their provenance area; however, obtained results refused the existence of such gap.

Sliding to the whole campaigns proposed since the birth of Italian Equity Crowdfunding, researches allowed to appreciate the high-growth path recorded over the last few years, providing relevant feedbacks even for what concerns the main decisions taken by ventures when designing their own campaigns. Additionally, proponent teams’ composition has been assessed by examining several dimensions, such as their personal networks and their educational, professional and entrepreneurial backgrounds. From a statistical perspective hence, campaigns have been assessed through different analyses, aimed at highlighting which

dimensions tend to significantly differ in certain scenarios. Funded and unfunded deals have been compared in the first place, while the second confrontation has been executed between overfunded campaigns and non-overfunded ones. Obtained results confirmed the pivotal importance of both campaigns' presentation and network, while the average age of proponent teams and the minimum accepted investment seemed to be not that relevant in the dynamics of the phenomenon. For what concerns proponent teams' human capital and ventures' pre-money valuation, they showed significant differences just in certain circumstances.

The first chapter of the dissertation provides an overview on the existing literature about Crowdfunding, moving from its definition and origins to the description of the most common models.

As for the second chapter instead, the whole Equity Crowdfunding model is assessed in its characterizing aspects, which encompass functioning mechanisms, roles of players and their motivations; moreover, a final section describes the introduction of Equity Crowdfunding in Italy.

Chapter Three is finally dedicated to the entire empirical analyses which have been performed over the subject; besides the methodology adopted, it includes descriptive and statistical findings about both Italian Equity Crowdfunding platforms and campaigns.



# CHAPTER ONE – THE CROWDFUNDING PHENOMENON

## 1.1 A CONCEPTUAL FRAMEWORK

Despite Crowdfunding is a relatively recent phenomenon, the possibility of developing a defining framework is becoming more and more consistent, in particular thanks to the increasing importance that it is gaining among its field literature. Nowadays it is really hard not to hear something about Crowdfunding, especially since it is emerging as one of the most used financing methods both for seed stage ventures and non-profit businesses; it has exploded in popularity over the last decade and its global level now accounts for tens of billion dollars annually (Short, Ketchen et al. 2017).

### 1.1.1 CROWDFUNDING DEFINITION

De Buysere (2012) defined Crowdfunding as a collective effort of many individuals who develop a network and pool their resources in order to support efforts initiated by other people or organizations. That is to say, that a large number of parties from different contexts could finance a project or a business by making a personal contribution, thus giving proponents<sup>1</sup> the possibility to exploit their social networks to collect funding.

As the etymology of the word suggests, Crowdfunding (CF) consists in a way of raising finance for projects from the “crowd”; this mainly happens by means of an internet-based platform through which proponents of the project could “pitch” their idea to potential backers, that do not mandatorily have to be professional investors (ESMA 2014b). With regard to specific platforms that are used to collect funding through CF, it is important to denote how this particular financing form benefits from the positive impact that the digitization have had on the current economic arena. As De Voldere and Zeqo (2017) observe, by lowering communication costs and by exploiting the cultural shift of people that want to be meaningfully connected with things they do, the digitization has made Crowdfunding an increasingly popular method of fundraising and community building.

For what concerns the “crowd”, according to Scheaf (2017) it usually consists in novices who provide relatively small amounts of money and who base their exchange decisions on the reception of desired rewards rather than return on investment.

One of the most common definition offered by the literature for Crowdfunding is: « [CF] involves an open call, mostly through the Internet, for the provision of financial resources

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<sup>1</sup> A Crowdfunding campaign proponent could be an entrepreneur, an existent firm, a foundation or whichever player that could need funds and that want to collect them by dealing with the “crowd” and not only through traditional financing means.

either in the form of donation or in exchange for the future product or some form of reward to support initiatives for specific purposes » (Belleflamme, Lambert et al. 2014, p.588); on the same lines Mollick (2014b) defined Crowdfunding as a novel method for funding a variety of new ventures, allowing funders to request capital from many individuals, often in return for future products or equity. In its defining effort Mollick highlighted the main differences between CF and traditional funds sources by asserting that Crowdfunding takes place by « [...] drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries ». It is fundamental to know that Crowdfunding takes many forms and that not all of them involve the possibility for funders to gain a potential financial return. (ESMA 2014).

Bottiglia and Pichler (2016) pinpoint Crowdfunding as a new phenomenon which enables people from the crowd to fund a project or an idea they share an interest in, by using an online platform; by means of such mechanism, people who may live in different geographical area could provide their own contributions. From the authors' point of view however, the precise factors that lead to CF boom still remain unclear, even if the Web 2.0 innovation and the 2007-2008 crisis are two of the main mentioned ones. In fact, it is quite easy to denote how this innovative way of funds seeking has emerged as a response to inefficiencies of capital markets which tended to be (and still tend, for several aspects) over-complicated and bureaucratic; Crowdfunding in fact leverages on openness and transparency thus offering businesses an innovative access to money and to a wide range of related advantages.

Moving from the fact that both small and innovative businesses often need funds in its early stage, technology had not yet revolutionized capital markets until the advent of Crowdfunding, leaving entrepreneurs experiencing a certain lack in this sector. Crowdfunding instead, as an IT solution, has rapidly risen up as an alternative financing method for ventures, becoming « [...] a new technology-enabled innovative process that is changing the capital market space » that aims to fulfil the funding needs of several kind of entrepreneurs and businesses, which is a critical challenge for a growing economy (Beaulieu, Sarker et al. 2015, p.2).

An attractive point of view in defining Crowdfunding is provided by De Falco et al. (2015) who suggests a Service-Dominant logic could stand behind this particular way of financing projects; according to the authors' opinion, since the beginning of CF might be observed the presence of mutual identification elements and unwritten social norms of reciprocity in building social capital relations among platform members<sup>2</sup>.

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<sup>2</sup> The authors (De Falco, Vargas-Sánchez et al. 2015, p.2) states that Crowdfunding works through « [...] a social interaction between producers and consumers of the CF platform ».



Another literature contribution that emphasizes the creation of a specific relation is the one from Scholz (2015), which explains how Crowdfunding represents a “nascent ecosystem” for early-stage innovation and finance, capable of accelerating innovation diffusion by shifting early innovation adoption before market entry. As will be deepened later, CF could be deemed as a viable vehicle for introducing innovation in the market and for filling the existing funding gap between pre-seed-stage and later-stage innovation development.

Even if the majority of the authors agree on how to define CF, it appears clear that such term has become an “umbrella term” used to describe an increasingly widespread list of fundraising models, typically via the Internet, whereby groups of people pool money to support a particular goal (Ahlers, Cumming et al. 2015). Moving from that circumstance, Mollick (2014) suggested scholars to develop a narrower definition of Crowdfunding, in order to avoid the inclusion of similar phenomena under the same term.

When talking about Crowdfunding, it is crucial to denote how the main side of the topic is not only the financial one: through CF indeed, the ecosystem composed by entrepreneurs and businesses could get several advantages such as feedbacks from outside or an increase in relationships’ quality towards potential customers. As anticipated before, a fundamental aspect that could be related to Crowdfunding is innovation, especially considering that this entrepreneurial financing pattern is mainly used for innovative firm. In one of its Policy Brief, the CASI<sup>3</sup> Consortium (2015) reported how the take up of innovative services and products has enhanced creative thinking even in terms of new sources of financing; in addition, it is clear to understand that, being innovation processes characterised by constant development, it is beneficial if financing models are aligned to them.

At this point, it seems evident that Crowdfunding has one of its pillars in the particular relationships developed between fundraiser and funders. Therefore, the crowd interacts in online consumer communities on specific web-based platforms, looking for projects which capture its interest towards making a contribution, with the aim of helping their commercialization that is not limited to the product launch but could potentially go beyond (Scholz 2015). With respect to the above-mentioned connection between the two main Crowdfunding actors<sup>4</sup>, Belleflamme et al. (2014) specify how they may or may not have any historic or personal ties to the financed business or to the entrepreneur; as said before, this became possible because of the disruptive changes that the Internet and its countless applications brought to the everyday life.

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<sup>3</sup> The acronym stands for Common Framework for Assessment and Management of Sustainable Innovation.

<sup>4</sup> That is to say the project proponents and the financier.

Scheaf (2017) claims that Crowdfunding represents a unique and increasingly common conduit for the acquisition of startup risk capital; thanks to CF, businesses and entrepreneurs can now acquire crowd support in obtaining ideas, collecting money and even soliciting input on the product (ECN 2016). By acting as ambassadors of the proposed project, entrepreneurs can spread its awareness through their own networks.

Talking about startups, Paschen (2017) sustains that they are really attracted by Crowdfunding, because of its being an alternative source of funds and overall because its nonmonetary resources are offered by encompassing the traditional outsourcing of an organizational function to a strategic network of actors, namely the crowd. Nonetheless, a certain scepticism has been observed on startups until now, given the fact that many of them seem still hesitant in considering Crowdfunding as a viable option. This is probably due to the lack of a precise guidance on how CF adds value in different life cycle stages and about which is the most suitable form of Crowdfunding for a specific business (Paschen 2017).

In any case, there is a scholar representative which conceives Crowdfunding as a tool to innovate, defining it as « the next step in the world's progress towards a globalized society promoting cultural and geographical diversification, towards pacification and education of all people, towards economic stability and equality, in our efforts to close distances and bridge gaps » (Brüntje, Gajda 2016, p.2). The authors' conception moves from the idea that Crowdfunding, being part of a digital revolution, could represent an innovative and democratic mechanism for fund seekers. Indeed, by leveraging on principles as *free trade* and *collaborative wisdom*, Crowdfunding pulls people and communities around a common cause and gives them a relevant “power” because of their possibility of choosing what project or what businesses deserve to be pursued and what do not worth the effort.

Nowadays, it seems that past definition efforts have led to a common conception of the phenomenon; for instance, one of the last definition of Crowdfunding, proposed by the European Parliament in its 2017 Report on actual CF state of play, states that « Crowdfunding can be defined as an open call for the collecting of resources (funds, money, tangible goods, time) from the population at large through an Internet platform. In return for their contributions, the crowd can receive a number of tangibles or intangibles, which depend on the type of crowdfunding. It generally takes place on CF platforms, that is, internet-based platforms that link fundraisers to funders » (Delivorias 2017, p.2).

In conclusion, one last example of how the current defining framework seems to be addressed towards a common direction is the contribution of Short et al. (2017), that labels Crowdfunding as a rapidly growing phenomenon through which entrepreneurs could seek funding from a large audience of interested individuals.

### 1.1.2 THE ORIGINS OF CROWDFUNDING

Understanding the very first origins of Crowdfunding is not that easy as it could seem, mainly because of a wide variety of examples that could be deemed as “approximations” of what Crowdfunding has become.

What is sure is that the concept of raising funds from hundreds of investors who provides a small amount each one is hardly new: for instance, in 1985 Paul Hogan and his fellow John Cornell tapped 1,400 Australian investors aiming to reach the needed funds for the production of *Crocodile Dundee*, a blockbuster movie, getting from each backer<sup>5</sup> an amount of approximately \$5,000. From 70’s to 80’s the investment vehicle of Limited Partnership, which had in \$2,000 its minimum required investment, became a widely used form of financing for businesses in several sectors, allowing companies to raise more than \$140 billion (Fleming, Sorenson 2016) and implementing a mechanism that could be easily associated to the one underlying the actual Crowdfunding.

Brüntje and Gajda (2016) argue how the idea behind Crowdfunding is not a novel concept but it has been around for centuries, even millennia; precisely, the scheme by which people pool their own resources to fund a common goal originated since when communities of individuals, which shared tasks and responsibilities among them, started to exist<sup>6</sup>.

To be precise, there is a particular sphere which has always relied on a similar mechanism, that is charity and its related extensions; given that broader point of view, an older example that could work as a CF precursor is the Statue of Liberty’s one. The famous monument built on Staten Island is indeed the result of a public call for funds made at the time through newspapers; it represents a financing from masses addressed to the achievement of a positive outcome for the collectivity<sup>7</sup>, which answered the call by raising a total amount of \$102,000 from more than 120,000 citizens, with a per person contribution smaller than \$1.

From the same historical perspective comes the cases of Indian mosques, which were built exploiting donations of bricks from local families (Scholz 2015), and the one of classical musicians as Beethoven and Mozart, whom required public funds for financing both their music compositions and exhibitions (Cicerchia 2013). On the basis of what has been stated above, it

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<sup>5</sup> The term “backer” means an individual that make a personal contribution to the crowdfunded project.

<sup>6</sup> With reference to this aspect, the authors hold that « the use of collective funds and resources is the driving force of local community efforts. It is a key factor behind civil society, arts or cultural projects and all grass-roots movements » (Brüntje, Gajda 2016, p.2).

<sup>7</sup> The call for funds was made by the newspaper publisher Joseph Pulitzer, in its newspaper “The World”, in March 1885. Precisely, the American citizens funded the pedestal realization whilst the structure of the monument has been funded thanks to French citizens contributions.

is easy to notice the similarities with the pattern that a today's Crowdfunding project has to follow.

In its literature review about CF, the CASI Consortium (2015) identifies the first example of contemporary Crowdfunding in the creation of ArtistShare<sup>8</sup>, a website platform through which musicians could seek funds from their fans in order to finance their production. After the launch<sup>9</sup>, ArtistShare became an actual fundraising platform also for films, videos and photography projects, laying the groundwork for its successors such as Indiegogo and Kickstarter. These platforms were among the first in perceiving the need for similar services in the market and nowadays they are two of the most important CF platforms, accounting for a higher amount of crowdfunded projects year after year (Massolution 2015a). Another platform that started to operate early (2005) on that side of the market is Kiva, a microfinance company that offers microloans to students and struggling entrepreneurs and that specialized in supporting local artisans and farmers in developing countries (Cicerchia 2013).

As for the problem of fundraising, on the same side lies the line of thinking of Husain and Root (2015, p.5), which assert that Crowdfunding « did not arise within a vacuum, but was instead a response to the needs of individuals who were unable to access funding to grow their businesses in the aftermath of the 2008 recession »; indeed, both the rise of countless IT-based communication tools and the persistence of historically low interest rates succeeded in catching the investors willingness to pursue alternative investments as the ones that Crowdfunding could offer.

What is dramatically different from the above-mentioned examples is the fact that, in the past, the funding need had to be echoed to the public by means of traditional informative channels as newspapers or word-of-mouth. Nowadays instead, after that Web 2.0 disruptive innovation has emerged, the backbone of the digital revolution has been set (Brüntje, Gajda 2016), originating a totally different way to communicate and cooperate. It is not so hard to understand how relying on advertising, direct sales or retail brokers was a costly process that has been re-invented through the exploitation of innovative channels, such as viral networking and social networks, which lowered the cost of traditional communication by leveraging the geographic and social reach of the Internet to connect fundraisers to millions of potential backers (Fleming, Sorenson 2016).

The emergence of platforms able to funnel the interest of potential investors, connecting them with fund seekers, is the real novelty element that boosted Crowdfunding growth to the current digits. A platform is a website through which an investor can browse projects currently

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<sup>8</sup> The platform was created by Brian Camelo, a Boston musician and computer programmer.

<sup>9</sup> The launch of CrowdArtist took place in 2003.

looking for funding (usually by means of apposite research engine provided by the website) and getting acquainted of all the details related to the campaigns; on the other side, the project proponents are allowed to “pitch” their ideas or products with the aim of capturing investors’ curiosity and possibly driving them to a campaign subscription. As will be deepened next in this paper, platforms usually manage subscriptions, process the payments and provide project proponents several tools with which they can reach all the backer in exchange for a small commission that is usually calculated as a percentage of the collected amount.

Even though talking about the “first Crowdfunding platform” is a tough challenge, it is possible to state that the primary area in which Crowdfunding impacted was the music industry<sup>10</sup> (Nespoli 2015); accordingly, the US based ArtistShare was followed by other platforms such as Sellaband, an Amsterdam based platform that provides musicians the possibility of raising funds for their music production.

Although in early 2000 the above-mentioned platforms were not the only ones which started to operate, the very first to coin term Crowdfunding was Michael Sullivan, an American entrepreneur, in 2006 (Chen, Thomas et al. 2016). According to Wordspy.com<sup>11</sup> (2008), while explaining the mechanism underlying its new incubator (named Fundavlog), Sullivan argued that « many things are important factors, but funding from the ‘crowd’ is the base of which all else depends on and is built on. So, Crowdfunding is an accurate term to help me explain this core element of Fundavlog<sup>12</sup> ».

Taking a look on the timeline of the most important events of Crowdfunding history, it is possible to observe how 2012 seems to be the turning point for the analysed phenomenon. Precisely, in April 2012 two distinct occurrences relevantly contributed to giving CF a lot of attention from the public: the approval of JOBS Act by the US President Barack Obama and the launch of the “Pebble”<sup>13</sup> CF campaign from the Canadian entrepreneur Eric Migicovsky.

Through the adoption of JOBS (Jumpstart Our Business Startups) Act on April 5, 2012, the Congress changed the rules of Crowdfunding arena by allowing citizens willing to finance a project to receive securities from the funded business in exchange for their subscription; in other words, the crowd which until then had received just products in return for their investments was permitted to acquire a proportional stake of equity.

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<sup>10</sup> And, shortly after, other similar industries creativity-based as films, comics and videogames.

<sup>11</sup> Wordspy.com is a website that tracks new words and phrases as they enter the language.

<sup>12</sup> Fundavlog was an unsuccessful online incubator for video-blog projects (Chen, Thomas et al. 2016).

<sup>13</sup> Pebble is an e-paper watch for iPhone and Android.

Speaking of President Obama, he had already experienced by himself Crowdfunding principles during its 2008 election campaign, which was partly financed through a multitude of small donations directly collected from the crowd. Precisely, Mr. Obama was able to raise \$600 million through barackobama.com, with an average donation of about \$200 per donor (Marom 2015); citizens responded in a very surprising way probably because of their sense of belonging to the candidate's political view and the possibility of having the first Afro-American president.

As it is easy to imagine this was a radical change in the marketplace, overall because, from the companies' point of view, they became able to use Crowdfunding to raise money in return for equity, rather than restricting fundraising to a patron model (Mollick 2014a). Considering that securities exchanges had always been strictly controlled by the legislative framework and its bodies, this change consisted in a relaxation of existent rules, the so called "Crowdfunding Exemption" (Mirra 2014, Lamberti 2015). Given the fact that JOBS Act primarily objective was to protect investors, such modifications were mediated by putting SEC (Securities Exchange Commission) in charge of a legal framework to be set for this new derivation of Crowdfunding fundraising.

A few days later the Title III approval<sup>14</sup> one of the most crowdfunded campaigns of all times was launched on Kickstarter, after having continuously asked for funds and without founding any interested investor among traditional capital sources. To be honest, Eric Migicovsky, the Canadian entrepreneur who invented the Pebble smartwatch, had already raised about \$375,000 from early-stage Silicon Valley investors; what is really strange is that in its subsequent financing phase he was not able to collect other capital from any source. At this point, it is pivotal to remind that the request for moving on to the production phase from the prototype one amounted to \$100,000. Moreover, it was a request that came from a young entrepreneur who was yet affiliated with a high-profile incubator (Y-Combinator), who was located in a region with a high concentration of angel investors and finally, who had previous production experiences deriving from the watch he created for Blackberry (Agrawal, Catalini et al. 2014). Despite all those solid prerequisites, traditional funding channels did not work for Migicovsky, who decided to move to Crowdfunding by starting a Kickstarter campaign<sup>15</sup> for Pebble on April 11, 2012, promising investors a watch for each pledge of \$99 or more.

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<sup>14</sup> Title III of JOBS Act was the one which allowed Crowdfunding to origin securities exchanges among parties.

<sup>15</sup> The campaign pitch was the follow: « Pebble is the first watch built for the 21st century. It's infinitely customizable, with beautiful downloadable watchfaces and useful internet-connected apps. Pebble connects to iPhone and Android smartphones using Bluetooth, alerting you with a silent vibration to incoming calls, emails and messages. While designing Pebble, we strove to create a minimalist yet fashionable product that seamlessly blends into everyday life » (Kickstarter 2016).

The original target of \$100,000 took about two hours to be reached<sup>16</sup>, whilst 68,929 backers did not take long to overfund the project by raising a total amount of more than \$10 million, making Pebble a campaign that nowadays continues in holding its spot among the top 10 most crowdfunded projects (CrowdfundingBlog 2017).

According to Agrawal et al. (2014, p.65) the two above-mentioned events « legislated and demonstrated an innovation in the market for early-stage finance that could have significant economic consequences », with the JOBS Act approval that worked as a catalyst for general interest on Crowdfunding potential (see Figure 1).

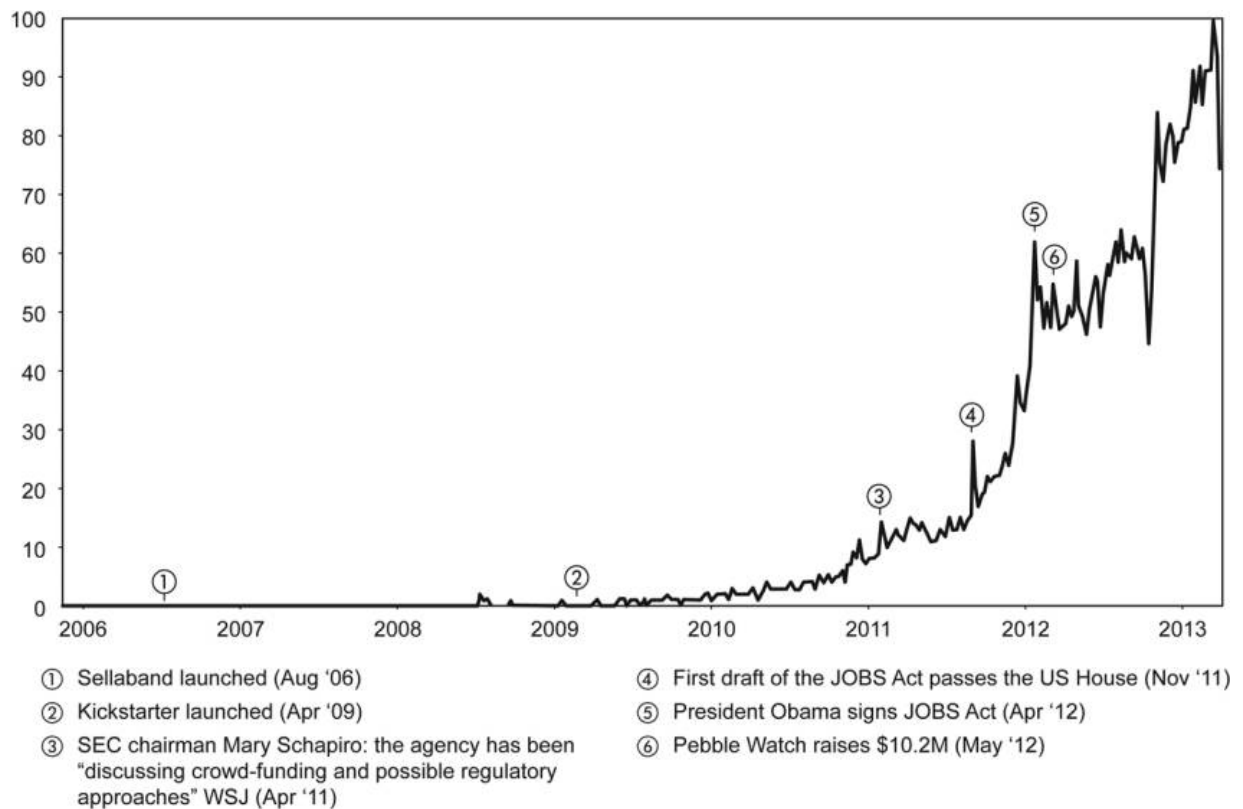


Figure 1 - Google search volume for "crowdfunding" (Agrawal, Catalini et al. 2014, p.65)

It is more and more clear how Crowdfunding represented an innovation since the beginning, because of its linkage to the crowd that opens new rooms for bridging investors' and fundraisers' communities. Precisely, according to Pais and Castrataro (2014), there was a rise in new forms of economic exchange which share common rationales, as: disintermediation through technological platforms, centrality of trust and reputation and dynamics of connective action. On that ground, an effective representation of how disruptive Crowdfunding could be is represented by the Swedish Crowdculture, an online platform that allows individuals to fund

<sup>16</sup> It became an impressive record for Crowdfunding; a record that have been broken always by Pebble which in its "Pebble Time" campaign reached a \$500,000 target in 17 minutes (Sabatino 2016).

cultural projects by combining backers' contributions with public financing, thus giving citizens an active deciding role and even drawing them inside the cultural policy matter (Crowdculture 2016).

To conclude, moving from its beginning phase during which it worked as an « online extension of traditional financing by friends and family », Crowdfunding is gaining always more traction in developed and developing countries (infoDev 2013, p.8); nowadays, it could be deemed as a “new” disintermediated source of financing (Walthoff-Born, Schwienbacher 2017) which is able to impact financing processes of young businesses in a relevant way, especially in this “digital era”.



## 1.2 THE PILLARS OF CROWDFUNDING

Although Crowdfunding represents a unique category of fundraising, with different vehicles, processes and goals (infoDev 2013), it draws inspiration from concepts like microfinance and crowdsourcing (Mollick 2013). The basic concept *per-se* is neither so revolutionary nor so different from a traditional whip round (Osservatorio Crowdfunding 2016); however, the coming of several disruptive events such as the Web 2.0 revolution, translated Crowdfunding into an innovative financing mechanism which is gaining always more attention from fund seeking fields.

### 1.2.1 MICROFINANCE AND MICROCREDIT

« If Crowdfunding is an innovative way of funding enterprises, it is an even more innovative way of investing. From the point of view of funding, in fact, Crowdfunding has some antecedents, or similar forms, for example microcredit » (Bottiglia, Pichler 2016, p.56).

In order to convey how the underlying principle of Crowdfunding is similar to what happened in the past, it could be useful to remind for instance the case of the “Irish Loan Fund”, created in XVIII century from Jonathan Swift and dedicated in financing small projects with micro-loans to entrepreneurs (Osservatorio Crowdfunding 2016). As mentioned before, Kiva proposes to investors projects that need financing and that in some cases will return them nothing other than the principal; that is to say there is no other expectation of financial or other return in exchange for the given contribution (Short, Ketchen et al. 2017).

According to Wardrop et al. (2015, p.17) « microfinance refers to the lending of small sums to entrepreneurs who are often economically disadvantaged and financially marginalized. There is a debt obligation incurred, but the amounts lent are very small ». In their “European Alternative Finance Benchmarking Report” the authors highlighted how people’s social and geographical affinities could be exploited in order to generate hyper-localized and community-based alternative sources of capital for local SMEs, social enterprises and community organizations. Historically speaking, these specific mechanisms have existed since a very long time; nowadays, the rise of web-based transactions has shifted financing activities from offline to online, making this finance segment able to achieve just under €20 million already in 2014.

Microfinance is an all-encompassing term for a multitude of small-scale financial services including also Microcredit, one of its branches that consists in « an extremely small loan given to impoverished people to help them become self-employed » (Investopedia 2004). Microcredit saw its international rise in the 70s with the birth of Grameen Bank, a microfinance organization and community developed bank founded in Bangladesh by Muhammad Yunus, a University professor also known as “the poor banker” who was later

awarded of the Nobel Peace Prize for his work against rural poverty (Beaulieu, Sarker et al. 2015). With respect to Kiva, the micro-lending platform introduced a few lines before, it could be discerned that it stepped into this space allowing struggling people to lend around the world; in a certain sense, Kiva extends what the Grameen Bank does leveraging the help of other partners in the field (infoDev 2013).

What Crowdfunding inherits from Microfinance could be identified both in their common *leitmotiv* of helping others by giving them economic support and in the fact that each contribution consists in a very small amount of money; as a consequence, it is quite sure that without this form of cooperative financing of last resort, neither the individuals nor the companies could move to a better situation. As De Buysere et al. (2012) denoted, the advent of digitalization and the rise of internet-based services impacted in a very effective way this kind of mechanisms by enhancing their worldwide spread.

In its “Crowdfunding’s Potential for the Developing World” report, the World Bank (2013) assessed that Crowdfunding investing fills a void left between microfinance and professional/institutional investors, being able to provide greater funds access to startups and small businesses; in particular, CF moves the target of the original microfinance mechanics from poor individuals to high-growth venture or to existing companies looking for expansion capital.

All things considered, moving from similar principles does not mean that Crowdfunding and Microfinance are the same thing; although quite all alternative finance methods share a general connection that consists in making access to capital affordable for individuals that cannot raise it through traditional means, the above-mentioned models differ in dynamics such as the addressed target and the goals pursued (see Figure 2).

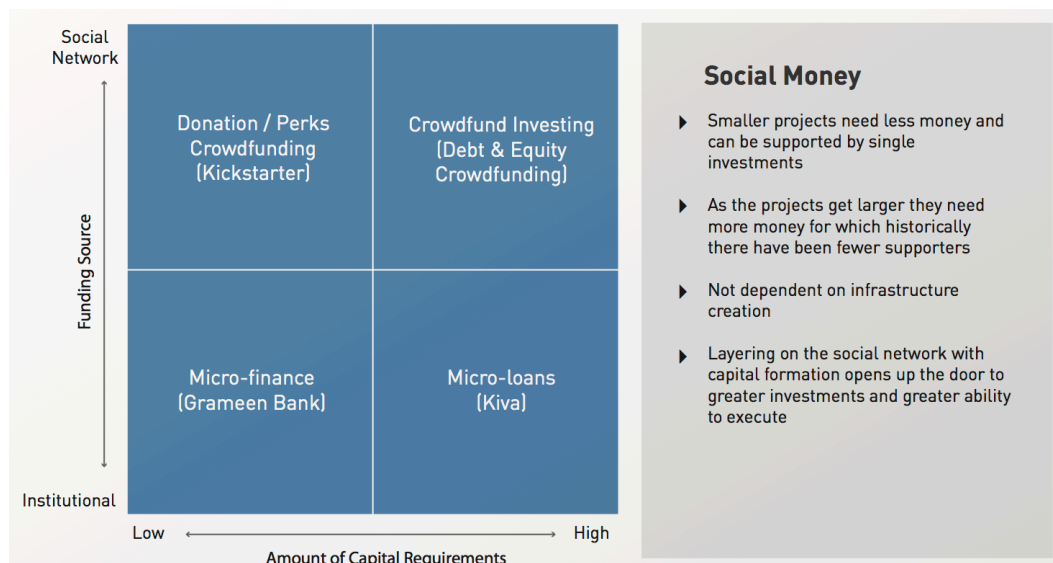


Figure 2 - The Amount of Capital grows with the Social Network (infoDev 2013, p.22)

What is really meaningful, is to highlight how the European Commission (EC) is not standing by and watching but, on the contrary, it is making an effort trying to establish an environment and a policy framework in which alternative financing forms, such as Crowdfunding, could succeed, « improving the access to finance for Research & Innovation projects and further strengthening of innovative driven SME ecosystem and the value chain » (CASI Consortium 2015).

By performing its R&I boosting activity, European Union approved two funding programs for Small and Medium Enterprises (SMEs) in 2014-2020 period: Horizon 2020 and COSME. Horizon 2020 is the biggest EU Research and Innovation program ever, with nearly €80 billions of funding available over 7 years (European Commission 2017a), while COSME is the EU program for the Competitiveness of Enterprises and Small and Medium-sized Enterprises, relying on a planned budget of €2.3 billion (European Commission 2017c).

With regard to the European Union website dedicated area, COSME aims to support SMEs in four areas:

- improving access to finance for SMEs in the form of equity and debt;
- improving access to markets;
- improving framework conditions for the competitiveness and sustainability of Union enterprises; and finally
- promoting entrepreneurship and entrepreneurial culture.

As for the Horizon 2020 program instead, it has been developed for implementing the Innovation Union<sup>17</sup>, a flagship initiative aimed at securing Europe's global competitiveness. Precisely speaking, its main goals are to drive economic growth and to create jobs by coupling Research and Innovation and by ensuring Europe will produce world-class science, removing barriers to innovation and making it easier for the public and private sectors to work together in delivering innovation (European Commission 2017). Such aims are planned to be addressed through business innovation grants, support services to companies and business coaching.

If on one side the presence of programs such as those already mentioned has to be considered a positive signal from institutional players, on the other side, this alternative to traditional fundraising methods is characterized by elements that do not allow it to completely fulfil the funding needs of businesses' ecosystem. In making a comparison between Crowdfunding and EC systematic programs, the CASI Consortium (2015) observes how CF provides innovators more freedom in expressing their ideas and thus how the idea assessment

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<sup>17</sup> Innovation Union is the European Union strategy to create an innovation-friendly environment that makes it easier for great ideas to be turned into products and services that will bring our economy growth and jobs (European Commission 2017b).

could be carried out by a wider range of investors (i.e. the crowd) instead of a categorical approach as the one of established EC funding programs. In the end, the Consortium also sheds the light on the two different speeds underlying the compared financing means: while EC financing often requires extensive preparations, Crowdfunding can be started quickly and without much administrative burdens, actually allowing investors a better monitoring on timing and effectiveness of fund usage.

With respect to the past, when talking about revolutionizing financing, United States have often led the field leaving Europe lagging behind (CASI Consortium 2015). It is the case, for example, of private equity and venture capital<sup>18</sup> (Jenny, Cucchiarato 2017), whilst for Crowdfunding Europe is currently trying to catch up and to narrow the gap.

### **The economic crisis**

« Although various forms of alternative finance have long existed, a combination of financial institutions having been weakened by the financial crisis, the rise of disruptive disintermediation-enabling technology, and underlying socio-economic and cultural shifts, is challenging the paradigm of how finance will be provided in the future » (Wardrop, Zhang et al. 2015, p.10).

When on September 15, 2008, Lehman Brothers filed for bankruptcy after its stocks had plunged 78% just in the first week of the month, the largest bankruptcy filing in history was taking place, becoming universally recognized as the trigger moment of the infamous 2008 crisis (Investopedia 2017).

The literature reviewed for the writing of this paper showed a certain tendency in considering the economic crisis of 2008 as one of thrusters for Crowdfunding impressive rise. The French political economist Jean Monnet hold that “people only accept change when they are faced with necessity, and only recognize necessity when a crisis is upon them”; moving from such preamble, to identify in the 2007-2008 crisis an active role for Crowdfunding development could be a founded argument.

Massolution (2015, p.102) states that although modern Crowdfunding<sup>19</sup> began forming in 2000, « events like the 2008 financial crisis further fuelled Crowdfunding a societal response to a lack of access to affordable capital »; on the same side, Lamberti (2015, p.30) agrees on the fact that « [...] crowdfunding – as new form of capital formation and an opportunity to

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<sup>18</sup> In addition to bank loans, public grants and entrepreneurs' personal network contributions, private equity and venture capital often represent high-tech firms traditional funding way in their early phase of existence.

<sup>19</sup> Massolution (2015) describes modern Crowdfunding as an online many-to-one democratized form of financing enabled by ITC and social media.

leapfrog the developed world – emerged in the wake of the 2008 financial crisis as an answer to the huge issues faced by new enterprises in generating funding ».

When talking about the analysed topic, Bottiglia et al. (2016) suggest the existence of two driving features behind Crowdfunding explosion: the structural one and the contingent one; namely, the availability of web technology and the credit crunch that occurred after the 2007–2008 global financial crisis. It is well-known that during the post-crisis period, despite the implementation of several governmental initiatives to reboost economy, businesses started struggling when seeking for funds; it mainly happened because of the reduced accessibility of bank loans and the stricter regulations on credit granting, changing the way in which young businesses used to raise funds (see Figures 3 and 4).

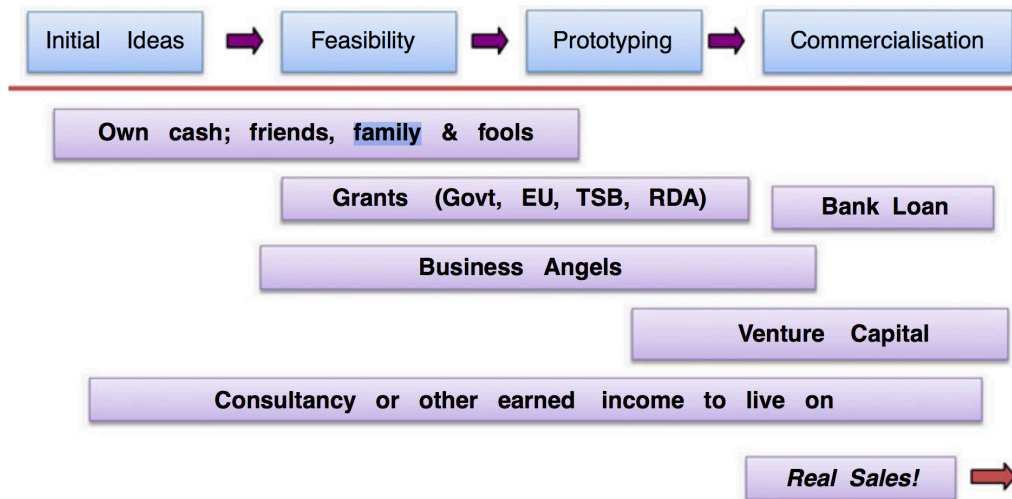


Figure 3 - The funding escalator pre-2008 (Harrison 2013, p.284)

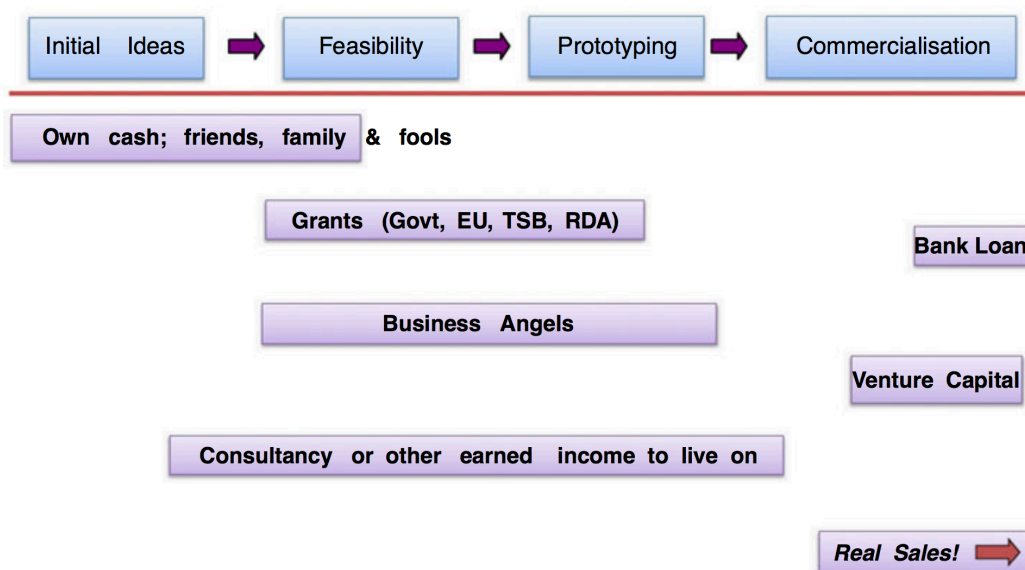


Figure 4 - The funding escalator post-2008 (Harrison 2013, p.284)

Those circumstances left numerous ventures<sup>20</sup> unfunded (Belleflamme, Lambert et al. 2014) and relying merely on “love money”, that is to say funds from the '5Fs': founders, family, friends, fans and fools (Harrison 2013)<sup>21</sup>. Such kind of fundraising though, was relevantly affected by the crisis and its consequent collapse in house prices, which headed the majority of incomes to personal assets purchases rather than business financing activities. On the other side however, the crisis provoked interest rates falling to the bottom, making unattractive for small investors to hold money in their financial accounts and stimulating them to look for attractive investments where possibly find a higher yield than the saving rates of the time (Décarre, Wetterhag 2014).

Moreover, another historical evidence consists in the fact that after the coming of 2008 crisis, traditional financing sources for startups and SMEs (business angels, venture capitals and banks) became more risk averse; therefore, new ventures succeeded in attracting new capital allowing Crowdfunding to step into the financial industry (Medziausyte, Neugebauer 2017). Some literatures argue that Crowdfunding could successfully fill in the financing gap which originated after the hardening of funders' selection processes and the restrictions in governmental subsidies; indeed, it is a phenomenon which is obtaining continuous consensus, especially since the fact that nowadays there is a sort of common sense of distrust towards banks and financial institutions in general (Valianto Adiputro 2016). As a confirmation of what argued before, according to the European Union Intelligent Energy Programme, Crowdfunding seems to be well-performing in periods such as those of economic and financial crisis and very limited access to credit (Citizenergy 2016).

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<sup>20</sup> The most affected categories were young entrepreneurs, startups and SMEs; the same ones that nowadays represent the main target for Crowdfunding (Massolution 2015).

<sup>21</sup> According to Pais and Castrataro (2014, p.185) « the first funds to a project are usually brought in by those people who are close to the project holder, who know and can evaluate their personal qualities, often even before those of the proposed project ».

## 1.2.2 FROM CROWDSOURCING TO CROWDFUNDING

It is common knowledge that an early stage venture could probably benefit from outside suggestions during its growing phase, above all if such support comes from expertized players like private equity firms or venture capitalists, which could provide both an important mentoring role in processes improvement and a relevant push towards innovation in products and services development (CASI Consortium 2015). Additionally, the process through which organizations actively seek out ideas from outsiders is considered fundamental for obtaining pivotal performances for CF innovators (Stanko, Henard 2017).

Speaking of Crowdfunding, scholars agree in holding that it derived from the broader concept of Crowdsourcing (Gerber, Hui et al. 2012, Mollick 2014, Décarre, Wetterhag 2014). Accordingly, in her book “The Relevance of Crowdfunding: The Impact on the Innovation Process of Small Entrepreneurial Firms”, Scholz (2015, p.7) claims that « today, the concept of Crowdfunding is rooted in the more general practice of Crowdsourcing ».

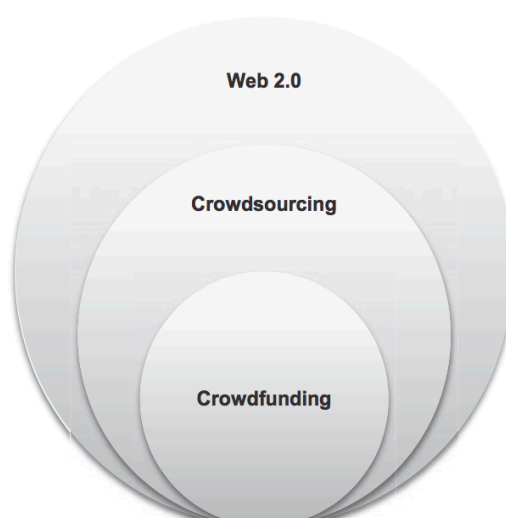


Figure 5 - Crowdfunding Embedded (Danmayr 2014, p.6)

Crowdsourcing is a term coined in 2006 by an editor of the Wired Magazine, Jeff Howe, that first used this word in Wired June’s issue<sup>22</sup> to synthesize the notion of outsourcing to a large audience, that is the crowd (Howe 2006b). Specifically speaking, Howe (2006a, p.1) asserted that « crowdsourcing represents the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined – and generally large – network of people in the form of an open call. This can take the form of peer-production – when the job is performed collaboratively – but is also often undertaken by sole individuals.

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<sup>22</sup> The June’s issue of Wired was the occasion in which the term has been used first, but, contrary to what represents a common thought, Howe gave his first complete definition of Crowdsourcing on his own personal blog hosted on Typepad.com.

The crucial prerequisite is the use of the open call format and the large network of potential laborers ».

In other words, Crowdsourcing could be intended as a way to exploit skills from a network of individuals for performing a business process; moving from the fact that Crowdfunding consists in relying on external individuals' contributions for financing projects or ventures that cannot count on traditional sources of capital, it appears quite clear a common ground between the two concepts (see Figure 6). For the sake of completeness, even other notions of Crowdsourcing have been offered, as for instance the one from Bannerman (2013, p.1) which labels it as « a way of harnessing creativity of the masses for free, or for a moderate fee ».

Décarre et al. (2014) observed how short it took for some individuals to understand that if the crowd could contribute with knowledge, it could do the same even with money; if in the first place Crowdsourcing is able to collect business ideas and solutions, it is also capable of accommodating the excess capacity of public financial resources and making participants also acting as investor, thus originating Crowdfunding (Aprilia, Wibowo 2017).

Nevertheless, it is possible to distinguish two pivotal points of difference between Crowdsourcing and Crowdfunding: they are represented by the type of contribution (financial for CF and intellectual for CS) and by the “commitment” of the crowd, which moves from its central role played in the former to its marginal relevance in the latter. In Crowdfunding, for instance, the investor is able to offer his financial support without necessarily develop any project aspect; as for Crowdsourcing instead, solvers<sup>23</sup> have to provide their intellectual abilities with the objective of developing either a part or the entire project they applied for (Giudici, Rossi Lamastra et al. 2013).

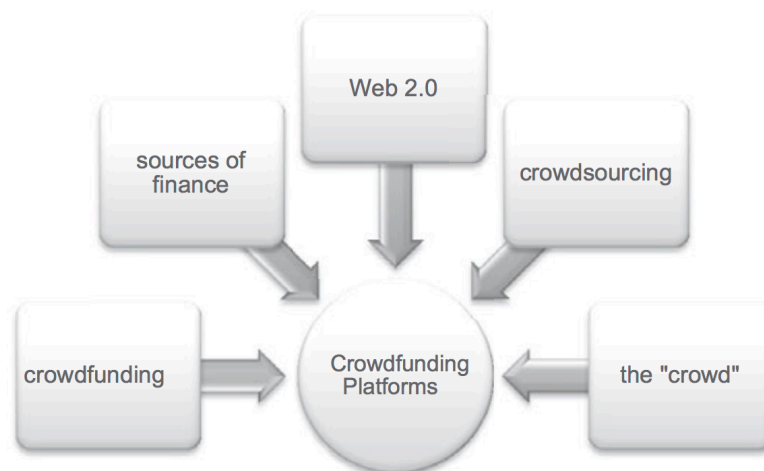


Figure 6 - Orchestrating factors for Crowdfunding platforms (Danmayr 2014, p.7)

<sup>23</sup> The term “solver” has been used by Howe (2006) to identify all the individuals of the crowd who gave their contribution through Crowdsourcing.



In their article “Crowdfunding and free labor: gift, exploitation or investment?” Pais and Castrataro (2014, p.185) distinguished a list of operating logics and social mechanisms underlying the Crowdfunding concept (see Figure 7); focusing on the highlighted dynamics, it is possible to denote more than a few similarities between Crowdfunding and Crowdsourcing fundamentals.

| <b>CROWDFUNDING: OPERATING LOGICS AND SOCIAL MECHANISMS</b> |  |
|---|--|
| <b>OPENNESS</b>   | <ul style="list-style-type: none"> <li>In general, <b>anyone</b> over the age of 18 who has an idea or a project can make it public on the preferred platform, and <b>anyone</b> can participate in the collective funding<sup>24</sup>.</li> </ul>  |
| <b>TRANSPARENCY</b>   | <ul style="list-style-type: none"> <li>Platforms generally make the number of submissions received, the amounts paid in and the backers’ identity <b>visible</b>.</li> <li>The <b>public</b> and <b>transparent</b> nature of Crowdfunding, jointly with the use of social and public components, should help in <b>identifying</b> and stopping bad behaviours and in weeding out fraud.</li> </ul>   |
| <b>LIMITED DURATION</b>                                     | <ul style="list-style-type: none"> <li>Many platforms ask project owners to define the <b>duration</b> of the campaign in order to pursue the best possible data disclosure towards potential backers.</li> </ul>  |
| <b>ACTIVE PARTICIPATION</b>                                 | <ul style="list-style-type: none"> <li>The link between Crowdsourcing and Crowdfunding is evident in that CF campaigns which allow backers to <b>participate</b> in the <b>decision-making</b> process by expressing their preferences or by providing their <b>time</b> and <b>expertise</b> to the project.</li> </ul>   |
| <b>CONNECTIVE ACTION</b>                                    | <ul style="list-style-type: none"> <li>The term “crowd” highlights the <b>collective</b> dimension of the funding process.</li> <li>One of the key mechanisms in determining the success of a campaign is the role of the <b>ties</b> between backers; they are not just social atoms tied together by a <b>common</b> interest.</li> </ul>  |
| <b>DIGITAL ACTIVITY AND RELATIONSHIPS</b>                   | <ul style="list-style-type: none"> <li>Crowdfunding takes shape through the use of <b>online</b> platforms that facilitate the transformation of social capital (accessible through <b>social media</b>) into financial capital available for the realization of ideas, projects and new ventures.</li> <li>Whereas social media lower the barriers to access (and production) of information, Crowdfunding <b>lowers</b> the <b>barriers</b> to <b>access</b> (and <b>sharing</b>) of capital.</li> </ul> |

<sup>24</sup> The only mechanisms of social closure are those introduced by some platforms through constraints related to the geographical origin of the project owners.

|  |   |
|--|---|
| <p style="text-align: center;"><b>REPUTATION AND TRUST</b></p> | <ul style="list-style-type: none"> <li>• The digital connective action is bound to the social mechanisms of <b>reputation</b> and <b>trust</b>.</li> <li>• Social media provide the right tools to go beyond the most immediate <b>circle of contacts</b> of the project holder and to reach a broader group of potentially interested individuals.</li> <li>• When the relationship is not based on <b>direct knowledge</b>, social ties provide for a <b>signal</b> to the public that the project is worthy.</li> <li>• Presence of the so-called social proof: the first helpers, building <b>trust</b> and providing <b>proof</b> of legitimacy to a project, <b>validate</b> it for late-supporters.</li> </ul> |
| <p style="text-align: center;"><b>NEW FORM OF REWARDS</b></p>  | <ul style="list-style-type: none"> <li>• Even in reward-based platforms, transactions are not always activated in order to buy something. In many cases the <b>expectations</b> of return have changed.</li> <li>• Already with the emergence of Crowdsourcing we have seen the birth of economic models based on <b>reputation</b> and <b>recognition</b> rather than on money (Howe 2008).</li> <li>• With Crowdfunding the rewards are often <b>non-monetary</b>, and in most cases, they represent a <b>collective return</b> rather than an individual one.</li> </ul>   |

Figure 7 - Crowdfunding Operating Logics and Social Mechanisms – Personal adaptation (Pais, Castrataro 2014, p.185)

### The Wisdom of Crowds

After this excursion focused on Crowdfunding and Crowdsourcing contact points, it appears clear how for both of them a fundamental element is represented by the crowd, with reference to the multitude of people which are interested in supporting a project, either with financial resources or with intellectual contributions.

In the wake of this growing trend of individuals playing an always more active role towards businesses, Pais and Castrataro (2014) defined “crowding” as the set of circumstances in which the crowd is used by individuals, companies or institutions aiming either to obtain ideas, feedbacks and solutions to develop corporate activities or to collect financing.

What became crucial, at this point, is that individuals (e.g. the crowd) not only supported or identified themselves in something, they actually started to make an active contribution for that. On the topic, Belleflamme et al. (2014) asserted that the crowd could experience even non-financial benefits from its role of shareholder for developing startups. Being one of the foundations on which Crowdfunding hinges, it is noteworthy to assess the mechanism that permits companies to leverage individuals’ inputs in order to get relevant insights from an external perspective and thus to enrich their decision-making process.

Namely, Crowdfunding exploits the knowledge and the wisdom in communities to decide « which projects should receive funding and how much funding they should receive, as well as providing real-time feedback on start-ups and small businesses » (infoDev 2013, p.14). Besides, it allows companies to assess the product/service economic potential and even to

transform participants from the crowd in customers who might play the role of prospective multiplier for ventures' future success (Danmayr 2014). Even Lamberti (2015) holds that Crowdfunding has one of its purposes in democratizing and expanding the access to capital by enabling the crowd to determine which entrepreneurs, or small medium enterprises, should obtain funds to grow.

A theory that is widely mentioned when explaining the incentives behind choosing Crowdsourcing or Crowdfunding instead of internal or more traditional resources, is the notion of *wisdom of crowds*. The origin of such theory could be granted to James Surowiecki (2005, p.307), a New Yorker columnist which in his best seller "The Wisdom of Crowds" wrote that « large groups of people are smarter than an elite few, no matter how brilliant – better at solving problems, fostering innovation, coming to wise decisions, even predicting the future ». In accordance with the above-mentioned assertion, it could be assessed that a collective decision-making process should achieve better results than an individual one (Howe 2008).

As Décarre and Wetterhag (2014) suggested, the idea appears quite similar to the already existent concept of "collective intelligence", intended by Lévy (1997, p.20) as « no one knows everything, everyone knows something, all knowledge resides in humanity »; put another way, « while one person may be mistaken, the crowd will, on average, be correct » (Gabison 2015, p.364).

In any case there is the need of being careful, because Surowiecki (2005) even stated that wisdom of crowds could fail, leading to an erroneous outcome; this could happen mainly because of individual's influence among themselves, a circumstance that sticks the individuals' thinking process. Furthermore, crowds can be more efficient than individuals or teams in solving problems, but in most cases, it lacks special knowledge in the specific industry if compared to business angels or venture capitalists (Danmayr 2014).

From a more precise point of view, the existing literature about wisdom of crowd predicts that a sort of mathematical aggregation (as for example averaging) of the crowd's judgement could be able to avoid individual errors of judgement by smoothing different errors that can affect each single valuation<sup>25</sup> (Mohammadi, Shafi 2017).

Another in-line perspective on crowds, offered by Hornuf and Schwienbacher (2017), suggests that both the value provided by traditional investors and the one that individuals add

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<sup>25</sup> In their past researches review, Mohammadi and Shafi (2017) assess that if all crowd's members make the same mistake, they are not able to cancel each other's errors and achieve more accurate judgment. Briefly speaking, if crowds are heterogeneous and the single judgements are individually performed, the central tendency of individuals' judgements should estimate the truth more closely than each individual judgement.

to companies plays a central role in how firm financing framework have been modified (see Figure 8).

However, if on one hand crowds' diversity and power of aggregating ideas and solutions should lead to a better outcome (Bottiglia, Pichler 2016), on the other hand the total confidence on crowds raise several doubts about Crowdfunding.

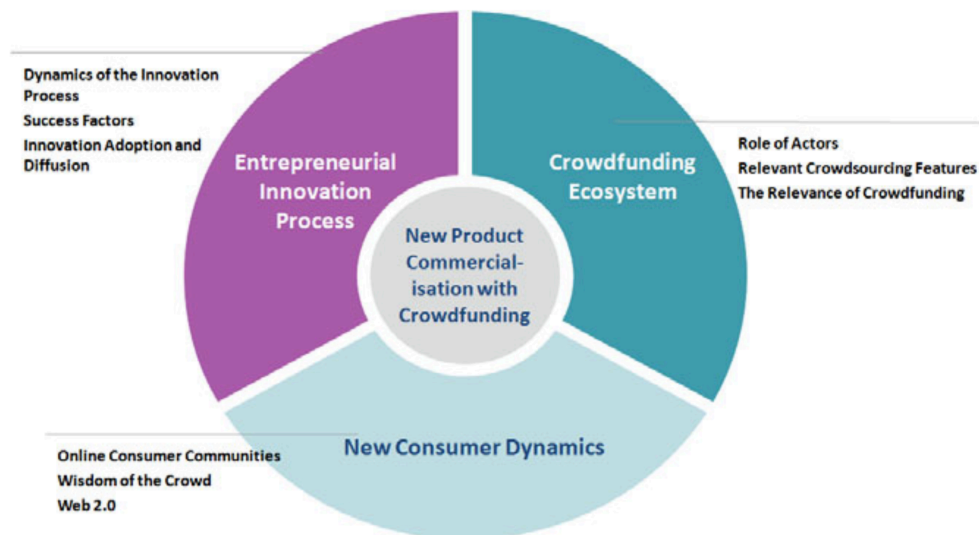


Figure 8 - Framework for Researching the Impacts of Crowdfunding (Scholz 2015, p.22)

With regard to this matter, some scholars have hesitations about this blind faith on wisdom of crowds' theory. The causes of such scepticism could be found on the lack of crowd's ability in adequately monitor ventures' management (Hornuf, Schwienbacher 2017), on the incentives the crowd is given by Crowdfunding models and eventually on the unwieldy role that crowdinvestors could play in some circumstances (Chen, Huang et al. 2016)<sup>26</sup>. More precisely, it is not that clear if Crowdfunding platforms are the proper format through which exploit such wisdom of crowd; moreover, when the returns to investment are diversified across investors, it should be take into account that none of them is able to individually perform a proper due diligence (Younkin, Kashkooli 2016).

It is a really challenging issue to assess what would have happened if no one started to recognize in crowds a potential means both of financing and innovating; what is acknowledged though, is the fact that nowadays companies are giving to external individuals always more importance in several core functions, contributing to the rapid spread of the crowd phenomenon in all its derivations.

<sup>26</sup> Chen et al. (2016) documented and compared two crowd designs for Crowdfunding in their research: pure crowds, where all crowd members participate as equals, and hybrid crowds, where crowd members are led by an expert investor. As this thesis will explain later, the presence of a hybrid crowd could be observed in the Italian Equity Crowdfunding model.

## 1.3 CROWDFUNDING MODELS AND MARKETS VOLUME

Moving from the fact that Crowdfunding is continuously evolving and impacting a wide range of economic sectors through different patterns, this section is aimed to present in a summarized way the main Crowdfunding models currently used in the market, with an overall perspective on the last available data about CF volumes, and the emerging Crowdfunding applications.

### 1.3.1 A GLOBAL OVERVIEW

Crowdfunding in all its diverse models is one of the most relevant components of the wider market of Alternative Finance (AF). The volume estimation about AF market relies mainly on commercial research reports based on different methods and characterized by different degrees of reliability (Jakimowicz, Osimo et al. 2017).

In its “Alternative Finance Industry Report”, based on a survey activity that covered about 90% of the market<sup>27</sup>, the Cambridge Centre for Alternative Finance (2016, p.20) from the University of Cambridge states that « the total European online AF market [...] grew by 92% to reach €5,431million in 2015. Excluding the United Kingdom, the largest market by a considerable margin, the European online AF industry grew 72% from €594 million in 2014 to €1,019 million in 2015. Although the absolute year-on-year growth rate slowed by 10% [...] the industry is sustaining momentum with substantive expansion in transaction volumes recorded across almost all online Alternative Finance models ». However, even if a positive insight is observable by the mentioned analysis, if compared to other regions such as Americas and Asia/Pacific, European AF market is slowing down whilst others are accelerating (Jakimowicz, Osimo et al. 2017).

In the recent years, a new language of trust and support seems to have been established between creators and funders with the rise of Crowdfunding (De Voldere, Zeqo 2017); one of the elements which is fundamental for the development of this particular relationship consists in the return obtained by backers when supporting a crowdfunded project. In particular, just as the funding needs for startups vary, the typology through which the crowd works as a funding means differs depending on the types of reward offered to supporters (Bottiglia, Pichler 2016, Paschen 2017).

Crowdfunding investments may take place in a wide range of forms such as donations, pre-purchases, share purchases and loans granting. On the other hand, even if the most common

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<sup>27</sup> The report was based on 367 European surveyed platforms across 32 countries.

return consists in traditional payback, rewards or pre-purchased products could work as repayment for investors.

In order to design this dissertation, it has been decided to follow the taxonomy proposed by Massolution, a research and advisory firm that is pioneering the use of crowd-solutions in government, institutions and enterprises and which is helping to write the guidelines for a new way to do and fund business. Furtherly speaking, Massolution (2015b, p.53) contributes a taxonomy that hinges on the proposed exchange between creators and investors, stating that « there are two overarching types of crowdfunding, which are defined by the relationship between the individual providing the financial resource – the crowdfunder or investor – and the recipient – the campaign owner or issuer –: Non-financial return Crowdfunding and Financial Return Crowdfunding. [They mainly] differ in the association of individuals' contributions to expectations of a financial return at some point in the future ».

The development of different CF models implies several differences both in campaigns management and promotion, in engagement with investors or donors and in the set of institutions, infrastructure, and regulations needed to implement the fundraising activities; in the end, the diverse Crowdfunding models also correspond to different motivations in funders (De Buysere, Gajda et al. 2012).

There exist several other classifications about CF typologies which focus on distinctive elements of campaigns rather than on the incentives scheme behind projects; however, as the creators of the Massolution's taxonomy assert, their approach seems to be the most suitable for a universal perspective. In addition to the four basic types of Crowdfunding: donation-based, reward-based, equity-based, and lending or debt-based (De Buysere, Gajda et al. 2012), Massolution (2015) added in its last report the fast-growing royalty-based CF model<sup>28</sup>.

### **Non-financial Return Crowdfunding**

Non-Financial Return Crowdfunding includes Donation Crowdfunding and Reward Crowdfunding. These CF models could be considered the oldest ones, which originated with the first cases of collective funding more than a century ago. As a confirmation, the first developed platforms and the most well-known ones are involved in this kind of financing.

Although Crowdfunding is subject to several risks as fraud, nonfulfillment and failure, data from the major existing platforms had shown that no successful fraud has been perpetrated

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<sup>28</sup> For some more creative campaigns, there may be a combination of the mentioned models or between Crowdfunding and other investment forms; in that case, the analyzed models are classified as Hybrid Crowdfunding models (Massolution 2015).

through donation or reward based CF platforms (infoDev 2013). With reference to infoDev report, attempts at fraud have been made but Crowdfunding transparency allowed would-be investors to ask questions and to challenge the fraudulent postings, thus revealing frauds and resulting in their removal from funding platforms within 24 hours.

For the sake of completeness, it is useful to recall that Non-financial return Crowdfunding is a market that, accordingly to the last reliable data, was able to reach \$3.27 billion globally in 2014, with a forecasted level of \$5.54 billion for 2015 (Massolution 2015)<sup>29</sup>.

### **Financial Return Crowdfunding**

Financial Return Crowdfunding includes Lending Crowdfunding, Equity Crowdfunding and Royalty Crowdfunding. The category generally encompasses CF models typically based on investors' capital contribution to an individual, a business or an entrepreneur which offers investors a financial return at a specific point in the future (Massolution 2015).

Also known as Crowdfunding (Bottiglia, Pichler 2016), this class of Crowdfunding is linked with the possibility for potential investors to join an open call for risk capital through the usage of appositely developed internet platform<sup>30</sup>, that generally have to be approved by the regulatory bodies of the registered office Country. Technically speaking, Financial Return Crowdfunding consists in a Crowdfunding subset in which individuals<sup>31</sup> receive an actual return on capital in exchange for their investment (Osservatorio Crowdfunding 2017).

For what concerns the risks involved in Financial Return Crowdfunding, they broadly fall into the categories of failure, fraud and money laundering. In view of the fact that any sale of securities involves a hazard for the investor, Crowdfunding investing « does have characteristics that require regulatory protection and robust investor education for Crowdfunding to contribute meaningfully and successfully to a Country's economy. The most common risk to investors is perhaps the primary risk they face in any corporate investment: business failure risk » (infoDev 2013, p.45). With respect to frauds and money laundering, the InfoDev report provides again useful insights: the former is mitigated by the fact that potential fraudsters would have to stand up to the entire crowd (thus avoiding the traditional one-to-one

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<sup>29</sup> Massolution's 2015CF Report is universally deemed as the most complete Crowdfunding report in the industry, basing its evidences on a global surveying activity on approximately 1,250 CF platforms.

<sup>30</sup> As this paper will further explain later, platforms in Financial Return Crowdfunding play a fundamental role, which goes from bridging fund seekers and potential investors to collect the individuals' subscriptions and, in some cases, to finalize the funding operation.

<sup>31</sup> In this context with the term "individuals" both natural persons, professional investors and institutional investors are meant.

basis for frauds)<sup>32</sup>, while the latter is addressed by several protections implemented by platforms such as strict controls from electronic payment processors and anti-money laundering compliance mechanisms.

Even though Crowdfunding has been non-existent until 2012, it globally reached quite \$28 billion subscription level in 2015 (Osservatorio Crowdfunding 2016), claiming always more attention from industry analysts. Actually, there is a quite common thought among scholars which deem Crowdfunding as disruptive in its total of business models (see Figure 9), leveraging on its combination of different approaches through which projects, products, services or other business innovations could be financed in such a groundbreaking way (infoDev 2013, De Buysere, Gajda et al. 2012). For the sake of numbers, Crowdfunding industry globally accounted for roughly \$16.2 billion in 2014, being expected to double itself and to reach more than \$34 billion during the following year (Massolution 2015).

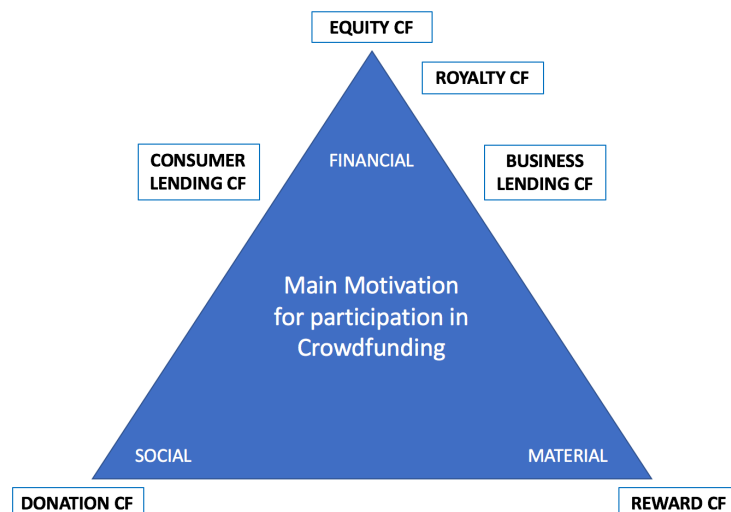


Figure 9 - Crowdfunding Models Framework - Personal adaptation (De Buysere, Gajda et al. 2012, p.12)

According to the analysis carried out by De Voldere and Zeqo (2017), more than twelve types of Crowdfunding models have been used to launch over 74,400 campaigns between January 2013 and October 2016 in Europe. With the goal of representing the Crowdfunding phenomenon in the clearest way, the following sections will deepen the five most used models<sup>33</sup> whilst the emergent Crowdfunding derivations will be synthetically introduced.

Given the fact that this thesis is focused on Equity Crowdfunding, the following part of the chapter has not to be deemed as an inclusive classification but rather as a broad overview.

<sup>32</sup> About the issue, the infoDev Report (2013) holds that the most probable fraud case consists in the establishment by criminals of both fake CF platforms and fake companies to attract investors' money.

<sup>33</sup> That is to say: Donation Crowdfunding, Reward Crowdfunding, Lending Crowdfunding, Equity Crowdfunding and Royalty Crowdfunding.



### 1.3.2 DONATION CROWDFUNDING

Crowdfunding has its roots in open calls for charitable causes, for whose interest apposite campaigns aimed at soliciting funds for independent projects or philanthropic initiatives that appeal to others with similar interests are set up (Massolution 2015, ECN 2016). According to Garvey et al. (2017) as long as there is no expectation of financial or material returns for pledgers<sup>34</sup> and no legally binding obligation, the transfer is considered either a donation or a gift, thus belonging to Donation Crowdfunding.

This kind of fundraising seems to be the most suitable for non-profit organizations as for example NGOs, which have used this Crowdfunding model for specific campaigns for over 15 years<sup>35</sup>; given that collected amounts are allocated to a specific cause, allowing the donor the precisely know where his resources will be destined, individuals are more willing to donate higher amounts per person (De Buysere, Gajda et al. 2012). On the contrary, the fact that Donation CF is mainly used for charities and personal campaigns does not mean that small ventures as for example startups are banded from using this kind of Crowdfunding; in fact, « it can be effective for social entrepreneurs who are running projects that may be attractive to those who are passionate about that specific issue » (Husain, Root 2015, p.10).

The existing literature provides that the social intrinsic motivations and the moral obligations that stand behind this funding typology tend to make Donation crowdfunders as more loyal in the long term, especially if the funded organizations provide updates on a regular basis about the project prosecution (De Buysere, Gajda et al. 2012, ESDC 2015). Accordingly, in its 2015 report Massolution globally ranked Donation Crowdfunding at the second place for funding volume with \$1.94 billion, forecasting it to be \$2.85 billion in 2015 with an expected to grow of 47% and thus accounting for 8.3% of the total 2015 funding volume. As for Europe (excluding UK)<sup>36</sup> it represents the fifth force with \$21.71 million in 2015 (Zhang, Ziegler et al. 2016).

As introduced above, this kind of Crowdfunding is the typical form used by not-for-profit and charitable organizations, including disaster-relief campaigns and election campaigns (Bottiglia, Pichler 2016). One of the last episodes is represented by the Donation CF campaign proposed on YouCaring by US football star J.J. Watt after the tragic coming of the Harvey hurricane in Texas: with the help of other celebrities and US citizens, Watt was able to collect \$19.6 million making the campaign one of the most funded ever (Crowdfundingbuzz 2017a).

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<sup>34</sup> With the term “pledger”, individuals that make a Crowdfunding subscription are meant.

<sup>35</sup> Paschen (2017) denotes that Donation CF is more popular for projects with smaller funding goals.

<sup>36</sup> Given the fact that the only UK accounts for quite the 81% of the European online Alternative Finance landscape, all the reported data about Europe does not include UK performances in order to not affect final results (Zhang, Ziegler et al. 2016).

### 1.3.3 REWARD CROWDFUNDING

The Reward Crowdfunding model is mainly used by fundraisers who want to collect donations for a specific project, giving in exchange to investors non-financial rewards; these rewards usually are of a symbolic value and cost much lower than the collected amount, generally without originating any legally binding obligation among the parties (De Buysere, Gajda et al. 2012, Osservatorio Crowdfunding 2017). With reward-based CF, pledgers do not receive an ownership stake and if the endeavour fails, there is typically little recourse (PENSCO 2015).

This kind of Crowdfunding is the choice of the majority of Cultural Creative Sector projects (De Voldere, Zeqo 2017), which are able to collect relevant amounts of funds by granting customers rewards such as perks, finished products or events tickets (Fenwick, McCahery et al. 2017). As a matter of fact, De Buysere et al. (2012) hold that if the different reward-levels are chosen wisely, proponents are able to receive a higher average donation than the one from a donation-based approach. Namely, reward schemes are commonly based on a tiered system (ESDC 2015, Scholz 2015) allowing backers to get a more valuable reward from a more conspicuous pledge.

In a reward-based campaign, individuals from the crowd provide capital that will be used to develop the project/product they are investing in (Massolution 2015) and that in the majority of cases will consist in the actual reward they are going to receive in exchange. With respect to this mechanism, a sort of pre-purchase model could be observed (Bottiglia, Pichler 2016): investors make a pledge to pay in advance for a not yet produced item and in the future, they will receive such item at a discounted price or with a priority or other related incentives, making the perceived value usually being higher than the economic one (ECN 2016).

Nowadays the reward-based approach is gaining attention from the most innovative ventures seek funding in the form of donations or pre-purchase (Scholz 2015), overall because of the possibility of use Crowdfunding as a tool to gauge demand for new products and services, thus garnering a product-related feedback about quality, design and functionality from potential customers and improving their own pricing strategy after analysing market reactions (Massolution 2015).

To assess the size of reward-based Crowdfunding, it is relevant to highlight how in 2015 it accounted for circa €139.3 million in Europe (Zhang, Ziegler et al. 2016) and it was forecasted to reach \$2.85 billion globally speaking. As for the Italian Market, the latest available research states that Donation and Reward Crowdfunding reached €24.7 million since the start of the funding activities, recently doubling their total market size (Bedino 2017).

### 1.3.4 LENDING CROWDFUNDING

Lending-based Crowdfunding is the model that allows companies and individuals to borrow money from the crowd instead of a bank or other credit institutions. Also known as debt-based CF (Husain, Root 2015), this means of financing originates an obligation between the funder and the borrower; more precisely, investors receive a debt instrument that specifies the terms of future repayment, which often includes the principal and an agreed-upon fixed rate of interest<sup>37</sup>. Undoubtedly, the main motivation for investors in lending CF could be found in pursuing high financial returns; at the same time though, ventures are allowed to access a “networked” source of capital through which a more flexible bargaining about interest rates should become possible.

Lending Crowdfunding includes peer-to-peer (P2P)<sup>38</sup> consumer lending and P2P business lending (Massolution 2015), the two largest CF typologies by funding volume, which slightly differ from traditional Lending Crowdfunding given that lenders and borrowers usually do not know each other (De Buysere, Gajda et al. 2012).

The P2P lending model perfectly fits the capital needs of positive cash-flow companies, that are indeed in a position to credibly assure lenders about the loan repayment (ECN 2016) and that can raise capital without diluting the existing ownership. As for the majority of lending operations, in lending Crowdfunding the interest rate is proportionated with the risk of the funded project<sup>39</sup>, thus making lenders able to choose the level of financial risk and exposure they are prepared to accept (Paschen 2017).

One of the innovative elements that Lending Crowdfunding can leverage on is for sure the Web 2.0 and thus the wide range of possibilities for financial services it offers. Through the existence of apposite platforms in fact, the lending operation could be performed between the borrower and a multiplicity of interested investors, thus overcoming the contractual power of banks and other similar capital providers. As a confirmation, PENSCO (2015) observed in its report that despite having started with small-sized loans to well-qualified investors, Lending CF is now expanding to encompass even larger loans as mortgages and securitization.

In the last years Lending Crowdfunding has always been the first Crowdfunding model for volumes, accounting for about 57% on the total Alternative Finance industry in Europe in

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<sup>37</sup> In a very few cases, the interest part is not always included in Lending Crowdfunding operations, thus making possible for individuals to provide low-cost startup capital to young ventures or similar businesses.

<sup>38</sup> The acronym P2P recalls the fact that money is not intermediated by a bank or other financial institutions, but is directly provided by peers via an online platform (Bottiglia, Pichler 2016).

<sup>39</sup> Usually projects are deeply evaluated and given an appropriate rating by platforms, in order to enhance transparency of the risks towards potential lenders (Osservatorio Crowdfunding 2016).

2015 (Zhang, Ziegler et al. 2016), with more than \$25 billion globally collected (Massolution 2015).

With respect to the Italian Market, the total amount collected until July 2017 since the beginning is €88.2 million (Osservatorio Crowdfunding 2017), with the significant insight about last year performances, which recorded €56.6 million in lending-based CF transactions and which pushes experts to assume that Lending Crowdfunding will stay at the top even for the next decades, with an always larger amount of transaction.

### **1.3.5 EQUITY CROWDFUNDING**

« When a company<sup>40</sup> wants to attract an investment from a group of people, instead of funding by a business angel or another private investor, this is called equity Crowdfunding or Crowdinvesting » (De Buysere, Gajda et al. 2012, p.11).

The equity-based CF model essentially consists in collecting investment money in exchange for registered securities issued to sophisticated, institutional and retail investors (Garvey, Ziegler et al. 2017). In other words, an ownership stake is sold to the public under the terms set by the proponent, after he has performed an appropriate evaluation and produced all the mandatory documentation (Paschen 2017, ECN 2016).

Motivations behind Equity Crowdfunding investments could be found on the support to a local business rather than on the existence of a project that attracted investors' interests or that shares some values with them; in addition, even to enter the company's ownership aiming to provide a certain technical/professional support could work as a push-factor for subscribers.

It is also important to recall that, when making a subscription and receiving a security, several rights are linked to the agreement; for instance, the possibility to primarily purchase eventual newly issued shares, the right to ongoing information and a range of governance rights which may or may not include voting rights. On the other side, as this thesis will further explain in the next section, Equity CF could represent a valid alternative for collecting risk capital to companies, overall because of traditional funding means like loans restrain ventures' growth.

Under the equity-based model the funders' return is tied to the future success of the company they invest in; it means both potential great rewards and greater risks for equity holders<sup>41</sup> (Massolution 2015).

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<sup>40</sup> Whilst in other CF models the campaign could originate from either an individual or from a company, Equity CF model is conceived just for companies; the mechanism involves indeed a share purchase.

<sup>41</sup> As for all risk capital investments, investors are generally subordinated to creditors in line for repayment.

In order to address conceivable issues on the touchy subject of securities purchase, the majority of developed markets have established a legislative framework pursuing the best possible investors protection<sup>42</sup>.

According to Husain and Root (2015, p.10) « equity-based Crowdfunding campaigns are best-suited for firms that are able to show some degree of market buy-in. Investors on Equity CF platforms tend to look for early stage startups that have the chance to grow rapidly, so they are willing to take on some risk if they believe in your company's long-term vision. They will not invest, however, unless a startup can show that it's on the path to fulfilling its vision ».

With respect to the last available data, Equity Crowdfunding is the fastest growing Crowdfunding model, accounting for €159 million in Europe in 2015 (Zhang, Ziegler et al. 2016) and for \$1.11 billion on a global basis. The same trend is confirmed also in Italy, where equity-based CF totally raised more than €12.4 million since its first appearance, with a last-year increase of about €6.9 million (Osservatorio Crowdfunding 2017).

### **Royalty Crowdfunding**

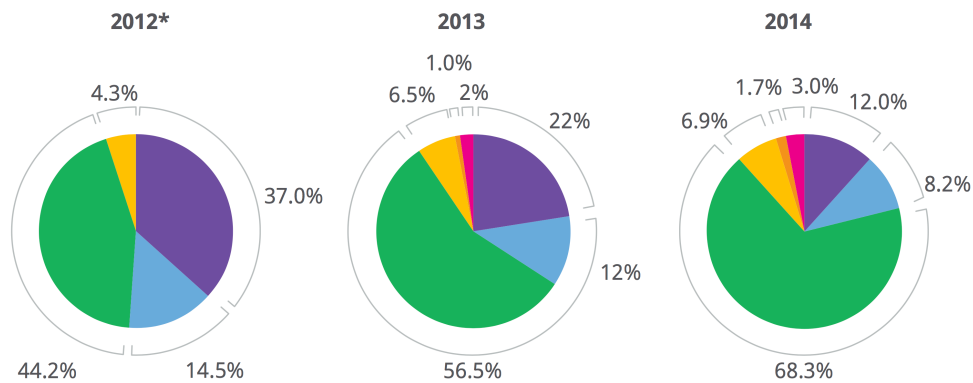
This Crowdfunding model is the most recent one; it essentially consists in granting the investors a financial return which is represented by a fraction of profits or revenues originated from a venture's license or from a usage-based fee, without transferring to investors any stake of the company's ownership (Belleflamme, Omrani et al. 2015).

More specifically, with royalty-based Crowdfunding the investor is given a contract that makes him in the position of receiving a royalty interest in a company's intellectual property and the revenues it generates (Massolution 2015); if on one hand potential gains from such an investment seems to be quite unlimited, on the other hand it must be taken into account that the venture could either stop in using the funded technology or it may divest it by selling to another firm.

Although few scholars consider this type of CF as an Equity Crowdfunding subset, the majority of researchers recently started to dedicate Royalty Crowdfunding a proper section (see Figure 10); this approach appears to be justified after observing the high growth which is characterizing the model (Ziegler, Reedy et al. 2017), that globally reached a volume of \$273 million in 2014 (Massolution 2015) and accounted for €0.54 million in Europe in 2015 (Zhang, Ziegler et al. 2016).

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<sup>42</sup> Initially, often only accredited investors can participate in equity CF deals (PENSCO 2015), while nowadays the efforts exerted by a wide range of governments allow non-professional investors to perform such kind of investments.



\*Please note Royalty- and Hybrid-based crowdfunding were not identified by Massolution in 2012 as distinct models.

Legend: Donation (Purple), Reward (Blue), Lending (Green), Equity (Yellow), Royalty (Orange), Hybrid (Pink)

Figure 10 - Global Crowdfunding volumes by model 2012-2014 in USD (Massolution 2015, p.56)

### 1.3.7 OTHER CROWDFUNDING APPLICATIONS

#### Real Estate Crowdfunding

This typology of Crowdfunding is the most well-known among the alternative applications; it probably cannot count on its specific place in the worldwide used taxonomy because of the fact that it requires a complex legal framework to be implemented and several countries started to face this issue only recently.

Real Estate Crowdfunding generally consists in receiving a financial return from the usage of a property, which has been purchased by a multitude of investors; it represents a very attractive opportunity for individuals who would invest in real estate industry but cannot do that because of their limited resources availability or scarce experience in the field. Broadly speaking, real estate CF aims at partially replacing banks and other financial institution, letting investors to co-participate in properties building/purchase (Giudice 2017).

In its Real Estate report, Massolution (2015) explains the main characteristics of real estate investing as an asset class: it regards a tangible asset, its return is a blend of current income and capital appreciation and finally it is generally considered an illiquid investment, which implies a higher difficulty and several costs to be divested. Despite Real Estate represents a quite new CF application, it is already creating both new jobs and new investment opportunities for real estate operators (Morri, Ravetta 2016), allowing investors to join a real estate project just through the use of a smartphone.

Real Estate Crowdfunding accounted for quite €27 million in 2015 on a Europe basis (Zhang, Ziegler et al. 2016), while the most recent data from a global point of view estimated its level to reach \$2.5 billion in the same year (Massolution 2015).

During the last few months, Italy saw the starting of the activities of two real estate CF platforms, the world known Housers (Crowdfundingbuzz 2017b) and the Italian Walliance, which benefitted the recently modified provision on Real Estate Crowdfunding (Lovera 2017).

## **Invoice Trading**

Invoice Trading consists in replacing banks in invoice discounting activities, through which they anticipate to clients the amount of the invoices they want to transfer, by granting the bank a payment of a discount rate. As a Crowdfunding derivation, Invoice Trading takes place by means of an online bid through which backers are able to invest in invoice fractions (Osservatorio Crowdfunding 2016); on the other side, the availability of this innovative financial instrument towards the whole community of web-users could grant SMEs a relevant support in their working capital sustainability (Osservatorio Crowdfunding 2017).

## **Initial Coin Offerings**

Initial Coin Offering (ICO) represents a very new phenomenon which is gaining always more momentum in the Fintech industry. The ground from which ICO originates is composed by several recent trends such as cryptocurrencies and blockchain.

From an investor's point of view, subscribing an ICO it is not so different from purchasing a future company securities as it happens in Equity Crowdfunding: instead of receiving shares, the subscriber obtains in exchange a quantity of cryptocurrencies (or similar payment means called *tokens*) issued by the financed firm. Technically speaking, companies are able to coin their own cryptocurrencies in order to create a sort of reward for investors, who may trade them in secondary markets or who might use them in the future, in order to buy firm's products. A key aspect is thus represented by the fact that investors' gains are linked to project's success; in fact, if the company will effectively perform, the obtained cryptocurrencies will appreciate therefore increasing the investors' wallets value (Bo 2016).

Given the fact that cryptocurrencies are traded exclusively through the Internet and that startups are currently benefitting from using them as funding means (thanks to their ongoing appreciation), analysts' expectation is a huge involvement of Crowdfunding field (Osservatorio Crowdfunding 2017). Although ICOs could experience and even increase several benefits from the Fintech industry<sup>43</sup>, the technologies used to perform such particular transactions still seem to be unreliable and do not provide any protection mechanism to investors.

On the topic, Bo's (2016) contribution holds that as well as the Internet and Web 2.0 allowed Crowdfunding to be born, a further development of technologies is pushing it towards what most people already define as "Crowdfunding 3.0", a new frontier for collective funding.

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<sup>43</sup> As for example the minimum commissions required for transactions, the disintermediation provided by the blockchain mechanism and the worldwide diffusion towards potential investors.





## **CHAPTER TWO – EQUITY BASED CROWDFUNDING**

### **2.1 INNOVATIVE FINANCING FOR FOUNDERS AND FUNDERS**

After having developed a framework to contextualize the whole Crowdfunding phenomenon, the following chapter aims at deepening the equity-based model.

It is a common thought that businesses, especially young ventures, do fail because of the lack of adequate funding and planning; as a matter of fact, planning has become a luxury that some businesses cannot even face, if they have not sufficient capital. In its Crowdfunding Report, PENSCO (2015, p.13) claimed that when in the past the access to private equity investments was reserved for the wealthy, « a significant percentage of the potential investing population was excluded, and many business owners were precluded from connecting with willing and able investors »; therefore, analysts hold that Equity Crowdfunding « can be utilized by businesses to bridge gaps in the funding highway ».

While the first section will assess the main benefits, motivations and drawbacks related to Equity Crowdfunding, the following one will then move to introduce both the mechanisms and the main actors of the analysed subject.

#### **2.1.1 BENEFITS, MOTIVATIONS AND DRAWBACKS BEHIND EQUITY CROWDFUNDING**

In 2012, Chris Anderson (p.171) wrote in his book “Makers – The new industrial revolution” that « Crowdfunding is big and getting bigger fast, and is attracting notice from Wall Street to the White House. The next step in Crowdfunding is to go from simply making a donation or preordering a product to actually investing in the company itself. But such investment is heavily regulated by the Securities and Exchange Commission [...] and is typically limited to accredited professional investors ».

Now, things have changed, and what were considered “the next step” currently represents an easily accessible source of capital for seed stage ventures. According to Fenwick et al. (2017), Fintech lenders, a category which encompasses Equity Crowdfunding (ECF) investors, are actually challenging traditional business models in a number of ways, which moves from bringing competition to the corporate market to increasing SMEs’ profitability. Equity Crowdfunding is thus affirming its role of substitute for other institutions and actors which often lack or are not active enough within a country’s capital market (infoDev 2013).

In order to size the constant growth which is currently characterizing CF, it is remarkable that just this year a partnership between the Cambridge-based intelligence firm

TAB and the Academy of Internet Finance resulted in the creation of a new Index<sup>44</sup> tracking global Crowdfunding and marketplace finance trends (Gaw 2017, Academy of Internet Finance 2017).

Behind the choice of Equity Crowdfunding, both from a venture and from an investor point of view, several benefits may be observed. To assess the phenomenon in the best possible way, it could be useful to deepen the mechanisms which lie behind financing and to be financed in such a way.

### **2.1.2 A VENTURE-CENTRED POINT OF VIEW**

Although the main reason for a firm to crowdfund a project consists in the capital procurement, several other elements could be denoted as driving forces for ventures; however, such consideration does not change the fact that the main target for Equity Crowdfunding is undoubtedly represented by small companies and innovative projects which are unable to access bank finance, venture capital or to reach the stage of an initial public offering (ESMA 2014a).

Apart from being a complementary channel through which businesses can obtain funds, Equity Crowdfunding is capable of providing firms with other advantages; such pluses consist for example in the improvement of the market efficiency, which could be pursued by enabling faster and better investor-company matches, and in the reduction of geographical factors' impact on individuals' investment decisions, which often affects traditional sources of capital, as for example business angels and VC (Mollick 2013, Wilson, Testoni 2014).

Additional advantages that proponent ventures could exploit are related to visibility and feedbacks that they are often given when setting an ECF campaign. Investors could even become customers of the business in which they are interested to invest in, which means that the financed firm might get from them both early advertisement for its product and information on potential market demand, thus becoming able to avoid wrong pricing activities and to focus on what individuals care the most (Wilson, Testoni 2014, Sheldon, Kupp 2017). For what concerns the increased importance given to investors' feedback, there is a growing trend that sees big corporations making potential customers always more pivotal in product development, thus using Crowdfunding as an actual corporate tool (Dawson 2016, Brown, Boon et al. 2017). Further developments of this CF implementation, which include even employees as investors for corporate projects, are contributing to the establishment of an innovative model called "Enterprise Crowdfunding", aimed at easing and facilitating synergy effects between company

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<sup>44</sup> The Index is named CAMFI, which stands for Crowdfunding and Marketplace Finance Index.

divisions and departments (Gómez, Sandau et al. 2016). On the same line of thought was Swart (2014), who labelled CF as a cutting-edge integrated marketing tool which targets Millennials and technology adopters, becoming the ideal tool for firms that want to be at the forefront of digital strategies.

A later potential benefit from Equity Crowdfunding originates from its online-based nature: differently from the majority of angel investments and venture capital transactions, ECF deals leave data trails on investors, entrepreneurs and companies. An additional analysis of the collected information might permit Equity Crowdfunding platforms to provide both better matches between companies and investors in the future and an enhanced understanding of crowd's product demand (Müllerleile, Joenssen 2015, Wilson, Testoni 2014).

In their research, Gerber et al. (2012) outlined five main categories of motivations for companies to choose Crowdfunding: financing, forming relationships and networks, self-affirmation, replication of success stories and increased awareness of the product. Additional possible incentives behind entrepreneurs' Equity Crowdfunding choice could be found in the speed and flexibility which characterize the whole process, without too much administrative burdens and formal obligations. On the topic, an additional positive aspect of Crowdfunding consists in the fact it fosters the decentralization of finance with no traditional financial intermediaries involved in the funding process (ESMA 2014).

A few years later, Brüntje and Gajda (2016) obtained quite parallel insights in their review of the main motives for choosing CF for firms: in fact, outcomes recall market legitimization, customer base building, increased visibility, higher product consumption, more press coverage and greater interest from potential employees and outside funders. Furthermore, Husain and Root (2015) even highlighted how companies started to use Crowdfunding campaigns also to enter new international markets.

As well as for new markets entrance, according to Cholakova and Clarysse (2015), a field which seems to be really effective for Crowdfunding implementations is the one of Innovation. As a confirmation, Stanko and Henard (2017) investigated such ground of application, concluding that Crowdfunding is now becoming a commonly used tool for innovating entrepreneurs, which can also exploit backers in generating word of mouth awareness around the crowdfunded project.

After having recalled the principal potential advantages that Equity Crowdfunding tool provides, it should be wise to assess even the downsides which ECF could imply.

A distinctive element of Crowdfunding in the most of its models, and overall in the equity-based one, is the mandatory disclosure of several ventures' data, as for example business

ideas and strategies, technologies and financial statements. Moving from this point, it could be easy to observe how the ECF instrument best fits the capital needs of companies which are potentially able to maintain their competitive advantage even performing such early information disclosure. On the other side, it is important to consider that such disclosure could mine firms' competitive advantage when it is based on corporate secrets or if it could be eroded by competitors when knowing the future corporate strategy.

Additional potential drawbacks for firms include also the ownership dilution, the uncertainty of the campaign, which in the majority of cases does not guarantee the proponent about the collected amount until the end, and the level of stress and efforts which are required to raise money by convincing the crowd in the best possible way (Scholz 2015).

In conclusion when talking of the boost the Internet gave to Crowdfunding expansion, it is important to remind that it also implies aspects which need to be necessarily addressed by ventures when setting an ECF campaign. Specifically speaking, entrepreneurs should take into account that in order to effectively reach the crowd of potential investors in the best possible way, there is a complete set of tools such as social media, newspapers and sectorial websites that must be used. Ultimately, the positive spread effect that proponents could experience when relying on an ECF platforms for their project, is the same which other projects' founders do exploit; meaning that every campaign potentially competes with the others currently hosted online and aiming to reach the same potential target of investors (Scholz 2015).

### **2.1.3 AN INVESTOR-CENTRED POINT OF VIEW**

At this point, even the assessment about funders' Crowdinvesting decisions should be performed by focusing on both sides of the phenomenon, in order to balance which might be pull factors that lead the crowd to invest and, at the same time, to run the risks that are involved.

A first consideration could be done by observing the way in which equity-based CF investors are usually called, that is to say "crowdinvestors". Moving from a conception of "investing" as a non-ordinary activity, it is not so challenging to denote a certain oxymoron when the term is merged with a very generic one as "crowd". Actually, one of the very revolutionary elements of Crowdfunding resides exactly in this point, opening to the whole public a world which not always has been deemed as accessible by the crowd; individuals who nowadays could easily become crowdinvestors, and that might or might not have knowledge of financial markets and venture financing (Wilson, Testoni 2014).

Generally, people who are willing to invest in a specific ECF campaign are driven by the conviction that the project is going to be successful (Brüntje, Gajda 2016); it is thus possible

to hold that Equity Crowdfunding creates a sort of mobility, both for startups support opportunities and for risk (Cicerchia 2013).

In addition, incentives provided by fiscal benefits, that are often granted by governments, furtherly push individuals in investing through Equity Crowdfunding; obviously, both a lack of clarity in the legislative framework and the occurrence of exogenous shocks act in the exact opposite way (Garvey, Ziegler et al. 2017).

As for businesses which seek funds through ECF, even investors are guided by more than the mere financial motivation in making their investments. According to Wilson and Testoni (2014), crowdinvestors might also get social and emotional benefits from financing a company; for instance, the fact that the business which is being financed shares values, vision or interests with the funder could work as a relevant motivational factor in his investing decisions, even making him more comfortable with the risks involved than in the potential circumstance in which the sole financial gain is perceived.

Although Equity CF deals are linked to several advantages for backers, they are equally outweighed by risks which could jeopardize investors' economical condition (De Luca 2017). As introduced in the previous section, there are diverse potential downsides involved for investors when dealing with the Equity Crowdfunding instrument; in its Position Paper about ECF the European Securities and Market Authority (2014) highlighted three main threats: the risk of fraud, the liquidity risk and finally the so-called platform risk.

For what concerns the fraud risk, which underlies almost all financial and nonfinancial CF models, it must be taken into account that the online-based nature of Equity Crowdfunding facilitates the spreading of fraudulent representations and false statements. Moreover, in order to monitor how and where funds are used by the financed ventures, investors do need a consistent capacity to exercise their shareholders rights in an ownership model that becomes always more complicated.

While the fraud risk is a potential one, what is a-priori sure for investors is that in most of the cases there is no secondary market for investment performed through ECF, thereby originating a liquidity risk linked to the difficult divestment of the performed deal; although several campaigns provides exit strategies for subscribers, a careful investor should take into consideration that if willing to divest he might be obligated to sell out at a lower price with respect to the purchase one, thus suffering a potential loss.

With respect to the platform risk, given that contacts between issuers and investors are conducted through an ECF platform, its potential shutdown or even its failure could represent

a threat for its capacity of acting as intermediary when the deal is being performed; by the way, currently used technologies seem able to relevantly moderate that threats.

All things considered, mentioned risks could be effectively mitigated by several factors such as the mandatory publication of the whole details about hosted campaigns and the peer review and peer recommendation mechanisms, which make the investor capable to perform its best possible evaluation (De Buysere, Gajda et al. 2012).

#### **2.1.4 COMMON BENEFITS**

The advantages provided by Crowdfunding do not finish with the mere capital provision, in fact, « a better access to finance for small businesses would in turn promote entrepreneurship and ultimately contribute to growth and job creation » (ESMA 2014, p.4).

From a broader perspective, Equity Crowdfunding seems capable of providing potential benefits even for the internal market in which it is implemented. Moving from this ground, De Buysere and Gajda (2012) forecasted that Crowdfunding will enhance system resilience by transforming the CF industry into a structure where market share is relevantly less concentrated than in incumbent financial services, thus originating consequences as an influence on interest rates or on governments' decisions about key areas of investments.

Additionally, Crowdfunding investments could offer ventures several opportunities to diversify their sources of capital and to lower their funding risk, thus implying a creation of value even for the whole system that becomes less disposed to funding shortages.

By this time, Equity Crowdfunding appears to be a really attractive source of capital for young ventures which are looking for funds in their seed stage; at the same time, it does not imply that a company could not set several Crowdfunding campaigns, either simultaneously or in a row, to guarantee itself the provision of the needed funds. On the topic Husain and Root (2015, p.10) indeed said that « it's not difficult to foresee startups in the near future building an early adopter base by pre-selling their products on a reward-based platform, then going on to raise a funding round via an equity crowdfunding platform, and, once it is enough mature, borrowing money by listing on a P2P platform ».

Being the result of several contingencies which made new ventures' founders struggling for financing and individuals experiencing an increasing difficulty in investments planning (due to low interest rates and high economic uncertainty), equity-based Crowdfunding should not be deemed as the universal solution for closing the equity-gap but rather as a suitable alternative for small businesses financing (Scholz 2015).

In conclusion, Equity Crowdfunding significantly disrupts the funding cycle: traditional actors as business angels and venture capitalists, which have served as funders of early-stage enterprises for many years, are now leaving some rooms for new players as for example ECF portals. According to infoDev (2013, p.26), « advances in the social web and ICT now give early-stage and high-growth enterprises globally the ability to leapfrog the venture investor boardroom by posting their offering to a larger set of investors in their social network. Validation from other investors may lower the perceived risk, and possibly the actual risk, of early-stage investment. However, crowdfunding does not displace the role of the angel or VC in providing later-stage or larger-scale funding ».

## 2.2 MAIN ACTORS AND OPERATIONAL ASPECTS

According to Ordanini et al.(2011), the funding process that a just born venture has to pass through, could be generally split in three main phases: the “friend funding” phase, the “getting the crowd” phase and finally the “race to be in” phase. Equity Crowdfunding starts in giving its contribution between the second and the third one, capturing the attention of the crowd around the funds seeking project and then exploiting the obtained awareness in order to reach investors who did not have any original connection to the initiative (Ordanini, Miceli et al. 2011).

Broadly speaking, Equity Crowdfunding represents a process through which projects are initiated in a public announcement either by companies or by single entrepreneurs in order to receive funding, to assess the market potential and to establish potential strategic relationships (Müllerleile, Joenssen 2015). In order to make such consequences possible, Equity Crowdfunding process is carried out from distinct figures, each of which playing a fundamental role in the functioning mechanism.

Given its standard implementation (see Figure 11), Investment based Crowdfunding involves three pivotal parties: the ECF platform, which operates as an intermediary by bridging project and funders, the campaign proponent that is looking for funds, and finally investors from the crowd who are going to finance the project (ESMA 2014). What is crucial to be understood are the particular relationships that link these three constituents of the Equity Crowdfunding ecosystem; for instance, the ways through which funders and fundraisers interact appears to be relevantly affected by both the context and the nature of the crowdfunded campaign (Scholz 2015).

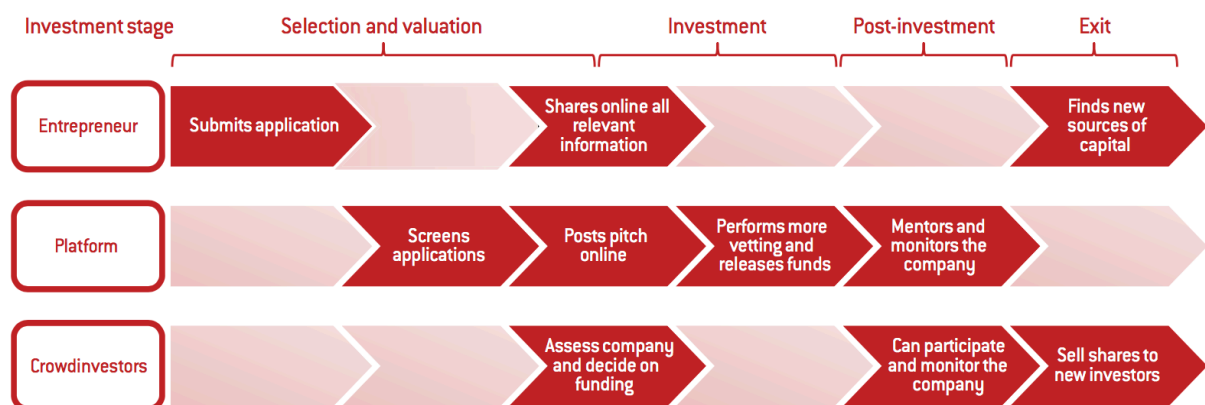


Figure 11 - Equity Crowdfunding main actors and stages (Wilson, Testoni 2014, p.4)

A short overview of the three above-mentioned players could be devised from the contribution of Ordanini et al. (2011), which labelled campaigns proponents as people who submit ideas and/or projects to be funded with the goal of gathering financial support from truly interested supporters. According to the authors’ conception hence, the “crowd” is intended to



represent people who decide to invest in initiatives they have deemed to be the most promising ones, thus bearing consequent risks; as for the platforms, they are conceived as intermediaries dedicated to deliver the new initiatives from campaigns initiators to potential supporters.

While the previous section outlined the principal logics behind the choice of Equity Crowdfunding both for ventures and for investors, this following part of the thesis aims at assessing the role which is covered by the main actors of the model and to briefly dissert the main operational aspects of Equity Crowdfunding.

### **2.2.1 PLATFORMS**

« Crowdfunding websites are creating transparency and more open communication by enabling investors to engage with companies over time to monitor their progress and continue to support their success as the company grows. This technology makes it possible for an entrepreneur in Kenya to more easily engage investors and customers anywhere; whether that be locally, the diaspora, or with others anywhere in the world » (infoDev 2013, p.4).

Traditional financing models requires ventures to hold several meetings to collect risk capital, which is a capital and labour-intensive activity that often results to be highly inefficient (infoDev 2013). Such method of raising funds has been relevantly innovated by the rise of Equity Crowdfunding, and in particular thanks to the establishment of the very novelty element, that are ECF platforms<sup>45</sup>. Technically speaking, Equity Crowdfunding portals are capable of centralizing access to data on available investment opportunities, thus facilitating the information flow from early-stages enterprises to potential investors; furthermore, according to infoDev's report on CF potential, they are able to do so in a more rapid fashion "than has ever been possible before".

First of all, it is worth to recall what a platform essentially consists in: namely, it is an online website, owned and managed by a firm, which is quite always required to get several authorizations from governmental bodies to perform its core business. Essentially, ECF platforms aim at proposing to the crowd CF campaigns, attracting interest around them and then collecting subsequent subscriptions until the campaign expires. In a nutshell, platforms work as a mediator which provides an online marketplace for challenging opportunities offered to a general public of investors; despite different sizes and scopes, they generally host specific categories of projects and exploit sectorial communication channels to convey their investment offerings (Scholz 2015).

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<sup>45</sup> In the following parts of the dissertation, it will be used even the term "portals" to indicate platforms.

Obviously, these are only the principal activities that a portal has to perform, which must be integrated with additional accomplishments as disclosure publications, relationships management and support services provided both to ventures and investors.

Deepening the core functioning of platforms, three common purposes may be devised (Agrawal, Catalini et al. 2011):

- providing a standardized setting for ventures which present their project to the crowd;
- allowing for small financial transactions to enable wide spread participation in the investment, and finally
- providing investment information and tools for investors both to be updated and to communicate with each other and with the funded company.

Given that ECF platforms cover an essential informative role both towards founders and investors, they are often required to disclose all the legislative provisions that regulate the deal which they sponsor in their websites; by doing so, portals are developing an increasing knowledge about information needs of their audiences (Löher 2017), which they share with entrepreneurs aiming at reducing efforts related to an ECF campaign set up. What appears pivotal for ECF portal is to constantly remind that the offered investment opportunities are open to a wide range of potential funders, namely the crowd; being it formed mostly from non-professional investors, platforms must provide them robust and easy-to-use tools to adequately choose which deals to invest in (infoDev 2013).

As well as doing their job in the best possible way, platforms should also focus on getting the most from the crowd; indeed, existing Crowdfunding literature outlines how crowdinvestors would not only provide money, but also engage in different roles that go beyond the mere funding; for instance, entrepreneurs may benefit from a marketing effect coming from their investors' behaviour inside their own network (Moser, Garaus et al. 2017).

A further procedure that is involved in platforms' business model consists in the selection of projects which will be proposed to potential investors; in fact, not all the received applications are accepted and posted on the platform website. This important selection process is pivotal in order to assure investors' satisfaction; obviously, if the ECF platform does not adequately select investment to propose, the risk born by its users would exponentially rise. Although the criteria of selections performed by platforms are generally not disclosed, recent researches showed that they are often based on strong network relationships and assessments about the possibility of later funding success (Löher 2017).

Despite the above-mentioned aspects, ECF platforms differ from each other with regard to several factors as: minimum investment and maximum collectable capital requirements,

types of companies accepted, fees applied, payment options, additional services provided and investment structure behind the deals.

### **2.2.2 CAMPAIGN PROPONENTS**

After having explained platforms' fundamentals, it is now the moment for this dissertation to outline the main features of campaign proponents. As already said before, Equity Crowdfunding is mainly used by young ventures which are looking for alternative sources of capital, either for necessity or for diversification purposes. Given its online nature, ECF seemed to be particularly attractive for both innovative and tech-based companies, even if there exist several cases of traditional businesses, which tried to exploit equity-based CF aiming to raise additional investments, hence targeting a different shareholder base than the existing one. As a matter of fact, Crowdfunding is always more used not only by startups but even from big firms, which are able to gain further benefits than the sole capital, as for example validating their ideas and enhancing their customer network (Cicala 2017).

When exploring the features of companies that decided to use Equity Crowdfunding, it could be noteworthy to make some considerations about the circumstances that led to this choice; on the topic, Walthoff-Borm and Schwiembacher (2017) observed that firms usually enter ECF as a last resort, due to the lack of internal financing and debt capacity. On their research, the authors even observed how firms tend to choose Equity Crowdfunding when they are unprofitable or when they have excessive debt levels and more intangible assets; both the circumstances hence seem to belong to a scenario which is quite common for seed stage ventures.

Following the existing literature, equity-based Crowdfunding may be preferable to other funding models because of its propensity to overcome issues related to small or even negative cash flows; such situation indeed represents one of the main reasons for which a company may struggle in collecting financing, given that venture capitalists and business angel may be discouraged from dealing with such occurrences.

Opening the access to an additional audience of potential investors, which represent a different source of money to firms, ECF allows them to enhance the stability of their capital structures and maybe to integrate equity CF provision with governmental subsidies. With reference to potential funding sources for ventures, Danmayr (2014) argued that while institutions like VC funds or banks are accessible for larger capital amounts, small initiatives heavily rely on friends, family and their own savings; about this last point, the author provided reasonable doubt about the possibility that crowdfunded project are more likely to be backed by proponent's network rather than by a more general group of investors.

It is realistic to assume that factors which are capable of pushing the project from being supported by a proximate investor to being backed by foreign investors could be found in quality and prospects of success perception, which the project itself could be able to provide to the crowd.

### **2.2.3 INVESTORS**

By expanding into Crowdfunding investing, companies are given an early-stage support network of investors who could have skills that the business can benefit from; these early investors, which see their success as predictably linked to the firm's one, may help the company in forging valuable connections to other influential actors and in performing several activities aiming to support the firm in entering an early growth path (infoDev 2013).

Past evidences showed that indirect roles, which do not necessitate establishing contact to ventures, seems to be widespread among investors; therefore, Moser et al. (2017) observed that even the engagement in roles which require the investor to personally get in contact with the management team are becoming common among the crowd, providing the funded ventures of several value-adding contributions. According to the authors, additional commitment from investors seems to be rather rule than exemption; what is unusual is that while business angels and venture capitalists personally interact with the management team in order to decide which activities have to be carried out, the engagement of crowdinvestors is not part of the deal, but they usually make it happen anyway.

Apart from the commitment they provide, investors need to carefully evaluate the proposed opportunities in order to balance both potential gains and risks that the deal could imply; on the subject, researchers agree in denoting a certain lack in crowd's ability to perform such valuations with respect to banks, investment funds and similar risk capital providers (Osservatorio Crowdfunding 2017, PENSCO 2015). Therefore, Mohammadi and Shafi (2017) highlighted in their study that if compared with specific institutions, crowd underperforms them in screening the creditworthiness of small and medium sized enterprises; more accurately, data has shown that the underperformance gap of crowd widens with risky and small amounts, thereby suggesting that crowds often lack both the expertise to appropriately assess risks and the resources to perform a proper due diligence.

The limited evaluation capacity of the crowd may even push it to assess the true ability of project owners to be profitable by discounting the values of the ventures hosted on the platform, thus leaving open rooms for the rise of adverse selection problems (Akerlof 1970). In fact, if this circumstance would happen, always more low-quality ventures would probably

choose to seek funds through ECF, while others would continue in dealing with business angels and VCs, that appropriately assess businesses' potential value (Agrawal, Catalini et al. 2014). In order to avoid the unintended consequence of creating a "market for lemons" (Akerlof 1970), both ECF platforms and monitoring bodies are striving to address the question. The main changes performed until now consisted for instance in the reduction of the crowd to only qualified investors<sup>46</sup> or in the mandatory presence of a professional investor for a certain portion of the offered equity. For what concerns the figures of the specialized investors, Mollick (2013) tried to distinguish them from that who participate just in Crowdfunding: while the formers are known as being oligopolistic and heavily rely on face-to-face meetings, the latter are labelled as more democratic and web-based communication oriented.

### 2.2.4 EQUITY CROWDFUNDING PROCESS

Equity Crowdfunding ecosystem includes a multitude of players which have been analysed in the past section of the chapter; after that review, a subject that now deserves to be addressed is represented by the mechanics which underlies the ECF process (see Figure 11).

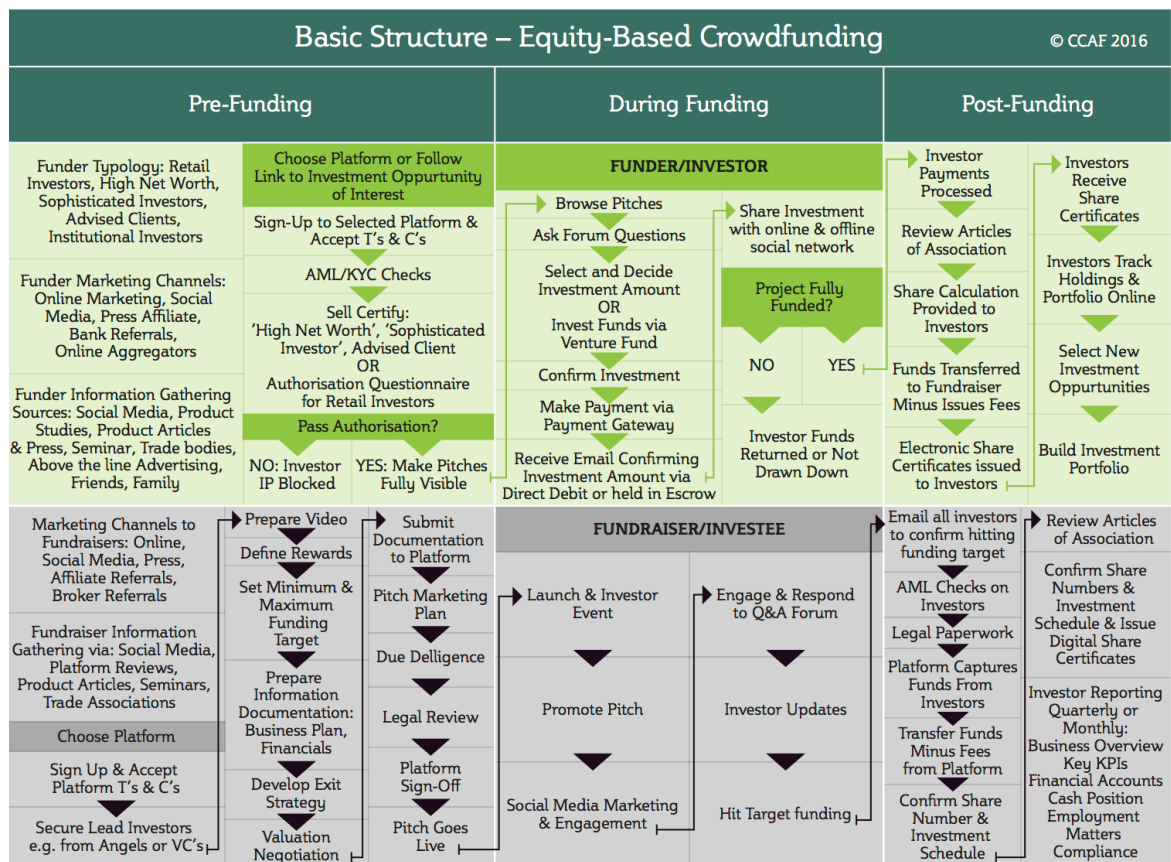


Figure 12 - A framework for a standard Equity Crowdfunding process (Garvey, Ziegler et al. 2017, p.20)

<sup>46</sup> When referring to the figure of "qualified investor", it is meant a status which several countries' regulations adopted in order to differentiate non-professional investors from individuals that own a specialized background and that are thus allowed by the legislative provisions to perform riskier operation.

The first step takes place when the platform receives an application from a company which is willing to raise funds in order to support its business idea by offering a stake of equity through the web-based portal. As explained before, at this stage platforms perform a preselection of the collected application, in order to protect investors by proposing them only investments which have been previously analysed and that obviously have passed this sort of due diligence. This process differs from platform to platform, but it could be assumed that the logics which drive it are linked to criteria as sustainability and feasibility of the plan, appropriateness of the management team and mandatory documentation accuracy.

When the project is approved by the portal, the proponent venture is asked to perform several operations, such as: establishing a funding target and the stake of equity offered, setting the duration of the campaign and preparing distinctive contents which will be used to present the project to investors. With respect to the contents, the proponent team will set up a pitch (which often consist in a video), a business plan and a presentation which will explain in detail the idea and the related aspects to investors, from financial projections to feasibility assessments; additional documentation may be required, as for instance resumes of the management team and accounting records of the venture. Project owners often utilize social networks and digital tools both to increase project awareness and to encourage potential target to make a subscription (ECN 2016).

After the campaign start, the platform takes care of the relationship between founder and funders, allowing them to easily interact and making available for firms several services through which keeping investors updated and to answer questions they raise; then, the platform collects from the investors the whole subscriptions until the campaign expires.

The functioning mechanism states that the target goal has to be reached to make the capital injection effective<sup>47</sup>, and thus to make it possible for the venture to receive financing; otherwise, raised funds will be returned to investors with nothing done. There are different methods for portals to manage collected subscriptions: they could either hold the money provision until the target is met and eventually reimburse it to investors or they could merely gather adhesions and then entitling a dedicated institution to perform the securities purchase<sup>48</sup>. Some complex models include even the establishment of a Special Purpose Vehicle through which the whole operation is executed or, in other particular cases, the involvement of the platform itself as co-investor of the crowd in the proposed project (ESMA 2014).

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<sup>47</sup> It is a common practice to set more than one goal for the campaign, in such a way that even reaching the minimum amount, subscriptions remain valid and the capital injection takes place anyway.

<sup>48</sup> This is not an all-encompassing list; other functioning patterns could be possible for ECF platforms.

Finally, the post-investment phase may differ in accordance with the circumstance in which investors receive or do not receive voting rights with the obtained shares; if the funders are entitled to be involved in the decision-making and in the overall strategy of the business, subsequent communications between them and the venture will take place both through the online platform and through other communication channels. For what concerns the ECF portal hence, it usually applies a fee structure, that significantly varies among different countries, on the total subscribed amount of equity; in addition, a registration fee and a due diligence fee may be required to project owners (ECN 2016).

## **2.3 CROWDINVESTING DYNAMICS**

Although several commonalities have been observed, Equity Crowdfunding market is consistently different from traditional forms of financing; in fact, contracts are generally simpler, the number of investors exponentially rises, fundraising process is shorter and overall, information provision appears to be quite lower (Vulkan, Åstebro et al. 2016). About the topic, past researches devised the presence of information asymmetries in ECF environment, which make it worth to consider in which cases they could occur and how the crowd tends to assess project's creditworthiness.

### **2.3.1 INFORMATION ASYMMETRY AND SIGNALLING**

« Knowing the nuances of the laws governing [ECF platforms], how they make money and conduct due diligence, and how they structure deals is acutely important. Some sites just get a brokerage commission and others only get paid on performance. Some sites have domain expertise. Some are run by true investment professionals, while others are not » (Assenova, Best et al. 2016, p.131).

From an investor's point of view, Equity Crowdfunding relevantly differs from other investing opportunities and even from other Crowdfunding models. With respect to lending CF for instance, the investor lends his money with an expectation of obtaining it back plus a certain yield, almost like a fixed income instrument; as for Equity Crowdfunding though, individuals invest equity in someone's business without being sure if and when, or how, they are going to get their money back (Assenova, Best et al. 2016). Questions about the quality of the venture, the existence of an exit strategy and the timing of dividends distribution may easily be raised by potential investors, who are usually unable or not allowed to perform an appropriate risk assessment as traditional figures like VCs and business angels often do.

As it is common in markets for equity capitals, the majority of the answers, if not all, belongs to the proponent venture, which possesses the whole information about the business itself, thus raising a problem of information asymmetry (Agrawal, Catalini et al. 2016).

According to Akerlof (1970), information asymmetry may drive to inefficient exchanges and even resulting in a failure of the market; by properly adjusting the market for lemons example provided by the author, it is possible to observe how ECF market is exposed to the above-mentioned issue. In the Equity Crowdfunding ecosystem, individuals from the crowd usually possess incomplete and imperfect information about the project if compared with campaign proponents; as a consequence, while potential investors face the economic risk of subscribing equity in a "lemon" (Akerlof 1970), founders must gain backers' trust by credibly



informing them about the venture's potential. In addressing the introduced problem, signalling theory suggested that the informed party (the project proponent) should send observable signals to its counterpart (crowdfunders) and make it aware of features which are difficult to be known, thus pushing the less informed party towards the exchange execution (Spence 1973). It is pivotal to remind that, according to Spence (1973), for a signal to be reliable it must be both costly and able to differentiate among competing entities (funds seeking ventures).

Provided that fundraising activities are carried out by means of online interfaces and in a short time window, equity-based Crowdfunding seems to present unique information challenges; founders may know more about project quality and risks than potential investors, which could then suffer a sort of informational disadvantage (Courtney, Dutta et al. 2017).

Although equity-based Crowdfunding seems capable of raising more funds than the traditional loan form (Nan, Laisheng et al. 2015), past studies have shown that investors are less likely to provide risk capital to ventures which quality is difficult to be assessed (Agrawal, Catalini et al. 2016). As a consequence, investors seem to differentiate among attributes of venture quality and to strongly value available signals, such as the level of uncertainty perceived and the accuracy of the documentation provided by the firm (Ahlers, Cumming et al. 2015). According to Courtney et al. (2017), ventures' credibility is based on the trust that potential investors place in their ability to adequately perform as forecasted when the investment has been done; firms' actions and characteristics and third-party endorsements are typical signals that seem to increase crowd's quality perception.

In conclusion, signalling to potential small investors may have further implications in ECF campaigns' success; indeed, in the context of hidden information, startups often tend to employ a range of signals aiming at inducing investors from the crowd to devote resources to the project (Fenwick, McCahery et al. 2017).

### 2.3.2 EQUITY CROWDFUNDING SIGNALS AND SUCCESS FACTORS

Aiming at assessing past researches outcomes about succeeding in ECF deals, it could be noteworthy to focus for a while on the meaning of success in equity-based Crowdfunding; despite the principal outcome to be analysed is still represented by either the collected funding amount or the reach of the campaign target, other shades of success could be conceived. About the topic, Beaulieu et al. (2015, p.21) hold that « other measures of success might include whether the product or project actually came to fruition, whether the backers received what was promised, and the degree of backer satisfaction »; especially for equity-based CF, « one measure of success is whether the company was sold in the expected timeline and whether backers received the expected return on their investment ». Similar remarks may be made about failure definition, which the author labels as elusive; in fact, « founders who fail to raise the required funds may have gained exposure, helpful knowledge, and contacts that turn out to be necessary antecedents for future success ».

#### **What drives the crowd**

« Due to the large numbers of ventures seeking financing and high uncertainties around their true quality, investors typically use rapid categorization and filtering mechanisms to focus their efforts on the most promising ventures » (Wick, Ihl 2017, p.2).

As previously introduced, an interesting point of view could be provided by comparing professional investors' selection criteria to the ones generally used by the crowd; according to Chu et al. (2017), investment criteria used by VCs and business angels, such as management team composition and experience, seem to be good success predictors of ECF campaigns. Nonetheless, the research team also found that equity crowdfunders' decisions are based on criteria that are often more similar to the ones used by investors of other CF models rather than to those used by traditional early-stage financing providers; the crowd hence seem to strongly relies on easily observable features of CF campaigns. Although crowdinvestors' behaviour is always changing and thus partly unknown, their lack of both experience and financial training usually drive them to place large weight on readily evaluable factors, while others are consequently less considered.

Shafi and Sauermann (2017) recently found that crowdinvestors generally pay the most attention to projects' attributes and then to several team's aspects such as founders' motivation and commitment, while financial statements provided by the venture seem not having a consistent influence in funding success. According to the authors, such behaviour may be caused by the lack of both comparative data and technical skills to aggregate and to process them.

As a partial confirmation, Chu et al. (2017) associated campaign success with several easy-to-access features as early funding collected from private networks, the size of the minimum allowed investment and a B2C orientation of the proponent venture; conversely to what explained above, opposite results have then been obtained with respect to financial information, which they found to be good success predictors, and to the proponent team, which has shown non-significant relationships.

A further contribution about the topic is the one from Mollick (2014), according to whom the quality of the project and of proponents' personal networks are associated with CF success; additionally, an appropriate funding target and a well-conceived social networks usage seem to be good signals for venture's preparedness to succeed.

### **Communication**

For what concerns the communicational sphere, Müllerleile and Joenssen (2015) indicated that professionalism and communications have a high impact on funding success, considering the presence of a venture's website as the minimum standard required. With respect to the usage of media in Crowdfunding context, it represents a pivotal action that must be undertaken by ventures to effectively convey what the project is about, which outcomes it implies, what are the main fulfilled needs and at which stage the project is, thus increasing project's likelihood of attaining funding (Courtney, Dutta et al. 2017). Moreover, a deepen consideration should be provided; according to Beier and Wagner (2015) and to Medziausyte and Neugebauer (2017) there are no beneficial effects from the simple application of social media channels, whilst a high frequency of updates about the campaign and a high media richness in the project presentation do leverage fundraising success.

Manning and Bejarano (2017) have deepened the structure of entrepreneurial pitches used to gain funds from the crowd, discovering that projects descriptions are narrated in different styles<sup>49</sup> to convey the underlying value; moving from such consideration, they highlighted how different combinations of narrative styles, if used coherently, do reflect to the crowd the tangibility of project outcomes and other campaign insights. Even the number of words used to present the project seems able to positively affect campaigns' outcomes (Aprilia, Wibowo 2017). In connection with projects explanation to the crowd, valuable insights come from Zhang's (2017) research, that analysed the way in which entrepreneurs' knowledge

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<sup>49</sup> The authors labelled two different narrative styles, namely "ongoing journeys" and "results in progress"; « the former style narrates projects as longer-term endeavors powered by creative initial ideas and a bold vision, inviting audiences to "join the journey"; the latter narrates projects more narrowly as a progression of accomplishments, engaging the audience instrumentally to support next steps » (Manning, Bejarano 2017, p.194).

transfer strategy affects Crowdfunding outcomes. Results revealed the existence of an inverted-U relation between project proponents' explanation of technical details of projects and their funding performance; in other words, both the lack and the excess of technical details may lead to a lowered outcome.

Another fundamental signal which crowdfunders hardly rely on is represented by campaign updates (Block, Hornuf et al. 2016, Balboni, Kocollari et al. 2015), a tool which platforms often integrate in the project display page and that is used by ventures to keep both potential and already-investors informed about the prosecution of the open call for funds. According to Block et al. (2016), posting an update has a significant positive effect on the number of investments made by the crowd and even on the total collected amount of the project. More precisely, the authors observed that the positive effect does not occur immediately but rather after a few days, and it tends to decrease with the rise of updates; as for the narrative, the use of an easier language and the choice of business development or new funding-related contents seems to positively affect campaign results.

### **Funding available information**

With respect to the available information about the deal, such as the amount of equity required, the ownership offered and the duration of the campaign, appealing results have been observed by Ahlers et al. (2015), whose research observed positive outcomes for ECF campaigns characterized by detailed descriptions of the involved risks and remarkable equity retention rates. On the same line of thinking are results provided by Fleming and Sorenson (2016), which pinpoint that campaigns proposed by entrepreneurs who sold smaller fraction of their companies and who can count on high social capital obtained higher rates of success. This circumstance could be analysed by considering that owning equity is costly for entrepreneurs, but at the same time it means they firmly believe in the potential of the venture; otherwise, they would retain just the minimum stake needed to run the business (Ahlers, Cumming et al. 2015).

Another potential driver for crowdfunders' decisions has been identified in the prior Crowdfunding history of the proponent company; while for Medziasyte and Neugebauer (2017) it seems not to increase proponents' reliability, Wick and Ihl (2017) lately claimed that a sort of trend could be observed. Precisely, a negative signalling effect of ECF as first funding source has been observed to affect following funding rounds<sup>50</sup>.

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<sup>50</sup> The authors' hold that a venture which has been initially funded with ECF could be deemed by second-round investors as a firm unable able to raise risk capital from traditional providers, thus affecting their perception of the venture's quality. In addition, asking for a second-round financing after having been supported through ECF, could push investors to think that the firm is not fully developed because of the lack of professional support between the two funding rounds (Wick, Ihl 2017).

## **The patent paradox**

Patents represent a signal that have been analysed by several studies, without providing one unique direction in the observed results. According to Ahlers et al. (2015), patent ownership fulfils Spence's (1973) definition of signal, provides useful insights about company's strength and ability to innovate and it may even work as a deterrent for potential entrants. All such things considered, Ahlers et al. (2015) used patents to measure intellectual capital, surprisingly finding little or non-significant impact on funding success for ventures. On the contrary, even more unexpected are the results from Meoli et al. (2017) which are reported in their recent study about the role of patents in facilitating access to Crowdfunding; namely, the research team found evidences of a negative influence on the likelihood of success for ventures owning one or more patents, corroborating the existence of different views about signals provided by them.

## **The relevance of human capital**

In accordance to what explained in the initial part of this section, crowdinvestors usually tend to evaluate proponents' easily-observable signals, such as third-party endorsements and ventures' features. In order to deepen the knowledge of this research area, literatures tried to assess ECF underlying dynamics by analysing the human capital of applicant ventures', given that it has been usually associated from experienced investors to higher skills and capabilities, and thus to ventures success (Ahlers, Cumming et al. 2015).

Moving from that preamble, investors may hence assess campaign's quality by relying on signals about the team which is entitled to run the business, such as higher levels of education and prior entrepreneurial experience (Shafi, Sauermann 2017, Giga 2017). For instance, Courtney et al. (2017) outlined how the fact that founders differ in their CF experience allows potential subscriber to draw meaningful inferences about the proposed project quality from the founder's past success; hence, positive insights from proponents' records should thus make them more reliable.

Packard and Jiang (2017) recently joined this stream of studies by examining signals about entrepreneurs' knowledge and experience, which they hypothesized to be pertinent signals, able to correctly represent venture's potential and even difficult to feign. With respect to the authors' findings, two different types of knowledge seem to be particularly relevant to crowdinvestors, namely knowledge of consumers' needs and technical knowledge; while the former supported researchers' hypotheses, the latter revealed to be significantly influent only on investors who are capable of perceiving such knowledge. Similar results came from Ahlers et al. (2015), who highlighted how internal governance features as a proper board structure and

highly qualified board members<sup>51</sup> might enhance both the speed of capital raising and the probability of attracting investors. On the other side though, the authors observed little or no impact on funding success of both social capital (alliances) and intellectual capital (patents) for young ventures trying to attract investments from the crowd.

### **The importance of the network**

Another signal that crowdfunders often use to evaluate both quality and reliability of campaigns' proponents consists in their networks. Interactions between backers and proponents represent a core element in Crowdfunding; indeed, Skirnevskiy et al. (2017) denoted how social capital manifestations could increase funding success and are often associated with early support from backers, which in turn might be considered as a signal for venture's potential.

In their literature review, Ahlers et al. (2015) provided significant inputs about the relevance of networks and business linkages through which ventures could access additional resources, valuable information and strategical relationships; according to the authors, such network positive effect could enhance companies' credibility, especially during the early stages. On the topic, Lu and Fulk (2017) recently deepened how CF projects' network could impact on funding performances; obtained outcomes highlighted that projects with a high network embeddedness seem to attract more funding and to enhance information flows that reciprocally occur between entrepreneurs and crowdfunders.

Another noteworthy analysis about networks influence in CF campaigns has been performed by Brussee and Hekman (2013), who tried to develop a scaling law that predicts the amount of interactions required for a project in its own website to succeed in the pursued fundraising. After having analysed ventures' social networks and media activities, researchers' findings have shown that successful proponents have more friends but a sparser network, thus suggesting that relying on different networks is beneficial for a project to succeed in CF.

Given that a Crowdfunding campaign shall generate a consistent amount of public relations and market buzz in order to be a good candidate (Conner 2013), social networks could provide appreciable support to funds seeking ventures; in-line results demonstrated how both the users' interactions and comments work as a third-party endorsement in CF, thus increasing trust between proponents and potential investors and reducing information asymmetries between them (Courtney, Dutta et al. 2017, Wang, Dong 2017).

With respect to social networks, both entrepreneurs' and investors' LinkedIn and Facebook connections seem to be the ones which provide the most influential signals to

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<sup>51</sup> To perform the study, human capital was measured by the percentage of board members with MBA degrees.

crowdinvestors (Mollick 2013, Valianto Adiputro 2016); according to Aprilia and Wibowo (2017), the higher the number of proponents' connections, the greater chance of a campaign to be successfully funded. Further insights come from Kromidha and Robson (2016), whose research outlined that founders and backers who identify themselves with the project in their own social networks are associated with greater pledge/backer ratios.

### **Other research findings**

A determinant that past researches hold to consistently impact in Crowdfunding investment decisions is represented by geography (Mollick 2014); in joining this particular stream of studies, Hervé et al. (2017) outlined that investors located in more “sociable” areas<sup>52</sup> tend to invest more, especially if the investor is a woman. Other in-line results come from Cucari and Nuhu (2017), whose recent work recently showed the existence of a certain relationship between territorial capital and Crowdfunding success for ventures.

Moving to other dynamics that have been observed in crowd investments choices, particularly significant appear findings from Zvilichovsky et al. (2015), about the positive effect that CF subscription previously made by the proponent could have in his fundraising activity; basically, in the peer-base fundraising scheme provided by ECF platforms, project proponents who have already been crowdinvestors seem to have higher success rates. Additionally, proponents who has already performed other CF campaigns, thus acting in a “serial” fashion, seem to obtain better performances in collecting funds (Butticè, Colombo et al. 2017).

With respect to platforms hence, Vismara and Rossi (2017) observed how the number of post-campaign services they provide positively impacts on the annual number of successful projects for each platform, whilst before-campaign services and ongoing ones showed non-significant trends. Furthermore, Qiu's (2013) study has previously shown that a greater positive effect in raised amount could be triggered by displaying the campaign on the platform front page, thus providing useful insights for proponent ventures about such kind of advertisement.

Still referring to platforms, additional indications came from Lusi et al. (2015), who examined the impact of “blockbuster projects”, that is to say overwhelmingly successful projects, on CF platforms. Results obtained by the authors showed that such projects do enhance investment performances of other projects in the same category, while a sort of cannibalization have been outlined towards other categories' campaigns; moreover, investors attracted by the high-performing projects seem to be more engaged and more active.

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<sup>52</sup> It is the case of « social area of living », where « social interactions are stronger and people are more connected witch each other » (Hervé, Manthé et al. 2017, p.13).

## 2.4 AN ITALIAN PERSPECTIVE

After having assessed the main actors and dynamics of Equity Crowdfunding, the dissertation will now move to a narrower scope, namely focusing on Italy. In the following section, the thesis aims to provide a brief framework for the current Italian regulation for Equity Crowdfunding, thus explaining both principal steps and main issues which have characterized legislative developments, providing in conclusion an up to date point of view about the state of Italian ECF market.

### 2.4.1 THE FIRST EUROPEAN REGULATION FOR EQUITY CROWDFUNDING

Equity Crowdfunding was anticipated to broaden the opportunities for ventures to access risk capital financing other than traditional bank lending, a funding source which experienced a progressive contraction after the post-crisis changes in the economic environment (CONSOB 2016b). Moving from such preamble, in June 2013 Italy was the first European country to implement specific provisions and to create a dedicated regulation for Equity Crowdfunding.

The Italian legislator has found opportunities offered by ECF especially suitable to the so-called “innovative startups” (i.e. hi-tech companies)<sup>53</sup>, a legal form for ventures introduced by means of the Decree-Law no. 179 of 18 October 2012<sup>54</sup>, converted into Law no. 221 of 17 December 2012. For the sake of completeness, the approved Law established an exemption to what stated from the Article 2468 of the Civil Code, which indicated that companies’ participation quotas cannot be represented by securities and not even offered to the general public for financial instruments. In fact, the Decree no. 179 provided that ownership stakes in innovative startups could be offered to the general public for financial instruments, even through apposite online portals for collection of capital, specifying also that the whole provision refers to the mere equity-based model (De Luca 2015).

As a consequence, the birth of an Italian regulatory environment for Equity Crowdfunding came into place with the approval of the resolution no. 18592 of 26 June 2013, after a nine-month period that was devoted to the whole preparatory works carried out by the responsible bodies. The mentioned resolution hence approved a specific regulation established by the entitled authority, namely the CONSOB<sup>55</sup>; basically, in compliance with ad hoc

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<sup>53</sup> The Italian name is “Startup Innovativa”. The Decree which introduced innovative startups also established specific attributes a venture must possess to be entitled of that status.

<sup>54</sup> Also known as “Decreto Crescita 2.0”, “Decreto Sviluppo bis” or “Decreto Crescita bis”.

<sup>55</sup> The acronym stands for the Italian “Commissione Nazionale per le Società e la Borsa”.



CONSOB regulation, innovative startups were allowed to solicit the crowd public's savings by means of the Internet (CONSOB 2016)<sup>56</sup>. Moreover, equity CF investments could be performed both from qualified and retail investors; however, the legislator made them subject to different limits and obligations, in order to differentiate the level of risk bearable for each entity and to proportionate it to the investors' financial situation. Such limitations regarded for example the possibility to perform ECF deals for investors, benefitting from an exemption to the rules governing the provision of investment services (MiFID EU Directive). Pursuant to this last norm, exempted circumstances regarded ECF investments that did not reach certain set thresholds<sup>57</sup>, thus allowing investors to not be profiled by financial institutions as normally required by the MiFID European Directive.

The enacted regulation was also addressed to Equity Crowdfunding platforms, allowing them to operate subject to registration in the dedicated CONSOB register and following specific rules both for their conduct and for offers presentation and related disclosure<sup>58</sup>. Technically speaking, the framework provided for the existence of two different registers, one for platforms specifically born to offer ECF deals and the other for securities firms and banks which were already authorized to provide such kind of financial services. While the former had to possess specific requisites of professionalism and honourability to be approved by CONSOB, the latter just need to require the registration in the so-called special section of the register. Other fundamental differences concerned the fact that the new born portals could neither hold any investor's money nor even place securities purchase orders; however, they were allowed to solely collect adhesions to the offers and thus to mandatorily transmit them to the entitled financial institutions, in order to finalize the operation. As for the securities firms listed in the special section, they could instead execute the whole process, from the offer proposal to the deal completion. Finally, as from July 29, 2013, ECF portals managements have been allowed to join the Register created by following the Article 50-quinquies of the TUF<sup>59</sup>.

Among the other features of the regulation, the main ones were represented by the upper limit of €5 millions for a single ECF offer and by the mandatory requirement for each campaign to have at least 5% of the offered equity subscribed by a qualified professional investor (CONSOB, CNDC 2016). With respect to the last-mentioned entity, the legislator implemented

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<sup>56</sup> On the topic, it is pivotal to remind that the legislator provided that ECF campaigns must have as object solely risk securities, and no other financial instruments such as debt or hybrid securities.

<sup>57</sup> Which respectively are € 500 and € 1,000 per single investment for natural and legal persons; while € 1,000 and € 10,000 represents the limit for annual invested amount, again for natural and legal persons.

<sup>58</sup> One of the main provision requires platforms to specify that ECF deals constitute "special offers" and not traditional securities purchases; in such a way, companies' information just need to be disclosed through an informative sheet and not formally approved by CONSOB.

<sup>59</sup> The acronym stands for the Italian "Testo Unico della Finanza".

such limit in order to enhance retail investors' protection; specifically, the status of professional investor was related to financial operators such as banks, asset management companies and insurance companies, whose features and experience make them conscious both of the prospected operation and the incurred hazards (Fregonara 2017).

As for the whole investors, they were allowed to access investments only after having confirmed that they are aware of the risk of investing in startups, and that they are able to withstand any economic loss that may arise from the investment. To enhance such investors' protection, CONSOB stated that each portal's website has to be built in such a way that the user mandatory follows a sort of investor education process, thus becoming informed about: the risk of losing the entire invested amount, the risk of not being able to divest the stake rapidly<sup>60</sup>, the fact that he is not going to receive dividends for quite a long period<sup>61</sup> and the fiscal benefits provided (Lamberti 2015). For what concerned the rights attached to the sold securities, they must include the right to withdraw within certain periods or under certain circumstances, and the tag-along clause, which works in case of relevant changes in the control stake ownership thus granting the investor an opt out option from the venture.

The objective of the regulation appeared to include a desire to encourage innovative startups' growth, which is considered as pivotal in the Italian economy, through a simplified and reliable regulatory environment, capable of instilling trust in investors by providing adequate protections (Crowdsurfer, EY 2015). The impression was that ECF could really represent an innovation able to modify the way in which ventures do business, helping them to avoid traditional drawbacks as the difficulties in finding risk capital or the restricted access to government grants, which however required companies to previously anticipate the covered amounts.

One challenging question could be why the Italian government decided to regulate ECF phenomenon without waiting other countries, thus aiming to use their legislative efforts as benchmarks. Of course, there is no one unique answer, but the more convincing arguments concern the fact that Italian legislator could have wanted to stop the birth of unscrupulous business initiatives which could have jeopardize investors, and even the confidence that ECF could have represented a powerful instrument to originate a consistent change in Italian economy (Mirra 2014).

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<sup>60</sup> It is important to recall that being a specific investment in a growing industry, it is very hard to trade related securities (CONSOB 2013), even if recent developments presage the potential creation of a secondary market also for this kind of securities (Osservatorio Crowdfunding 2017).

<sup>61</sup> Pursuant to the Decree-Law "Crescita 2.0", which introduced the innovative startup legal form, such qualified venture is not allowed to distribute dividends for its first 5 years of existence (Sacrestano, Leo 2016).

## 2.4.2 EVOLUTION OF THE LEGISLATIVE FRAMEWORK

Although the motives which draw Italian legislator to provide such legislative exertion were undoubtedly fair, there were still a lot of work to do in order to develop a proper environment for equity-based Crowdfunding. In fact, allowing ventures with valuable ideas to collect capital from the general public was a huge goal, that required more than one modifications to the first implemented regulation. However, from a regulatory point of view, the whole legislative work that the Italian legislator has done for the establishment of a well-designed regulation for Equity Crowdfunding, has led Italy to be considered as a benchmark which is able to relevantly contribute in the sectorial normative developments, even from a European perspective (CONSOB 2015).

Soon after its approval hence, the legislative framework proved to be excessively cumbersome, thus inducing some market players to push regulators towards a renewal of provisions underlying Equity Crowdfunding; effectively, the excessive investors protection implemented turned out to be perceived as a barrier rather than a safeguard mechanism.

Two of the main concerns were the mandatory profiling mechanism, which worked over thresholds considered exaggeratedly low<sup>62</sup> and the exploitation of ECF, which was granted merely to innovative startups, that represented an almost irrelevant part of the entrepreneurial environment at the time (UCSC 2015). Paradoxically, the legislator aimed at protecting investors, allowing them to make such investments only in the most difficult ventures to be evaluated from an economical point of view, given their short period of existence and the volatile sectors in which they operated.

In the light of such considerations, the Government then issued the Decree-Law no. 3 of 24 January 2015<sup>63</sup>, converted into Law no. 33 of 24 March 2015, with which a new legal form for ventures, namely the “Innovative SME”<sup>64</sup>, was both introduced and allowed to raise capital through ECF as well as innovative startups (Cucchiariato 2016). Moreover, even CIUs<sup>65</sup> and firms which professionally invest in either innovative startups or innovative SMEs, have been granted the possibility to raise funding by asking for risk capital through online portals,

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<sup>62</sup> The Consob regulation provided that each startup must have its own escrow account on which deposits could be executed, due to the fact that ordinary ECF platforms (not the few ones enrolled in the special section of the register) are not allowed to hold investors’ cash. As for over-threshold deposits, they also required an over-bureaucratized process, involving the execution of the mandatory MiFID profiling by financial institutes, which represented a relevant constraint to the funding activities (ETica News 2015).

<sup>63</sup> Also known as “Decreto Crescita 3.0” or “Investment Compact”.

<sup>64</sup> The Italian name is “PMI Innovativa”, where the acronym stands for “Piccola Media Impresa”. The Decree which introduced Innovative SME also established specific attributes a venture must possess to be entitled of that status.

<sup>65</sup> The acronym stands for Collective Investment Undertakings. The Italian acronym is OICR, which stands for “Organismi di Investimento Collettivo del Risparmio”.

even if they have been subjected to stricter rules and enhanced supervision (Capelli 2016). Such modifications were positively accepted by the ECF market players, that claimed how such instrument could be suitable even for growing ventures and not just for recently born ones.

In order to implement the above-mentioned provisions, after several preparatory consultations with the most relevant ECF industry players, CONSOB issued a new version of its regulation on Equity Crowdfunding, which has been approved with the resolution no. 19520 of 24 February 2016 and that came into place on March 5, 2016.

Alongside to the previously introduced utilizers for ECF, the main change brought by the new regulation consisted in the possibility provided to the platforms to execute the mandatory investors profiling activities on their own platforms, without relying on other institutions and thus speeding up the investment process<sup>66</sup> (Macchiavello 2016). An additional change concerned the introduction among professional investors of customers which expressly request to be qualified as professional ones; such circumstance is actionable under the mandatory transmission to the platform of the MiFID certification and other specific statements, issued by an intermediary of which the individual is a customer, which shows the classification as a professional customer (CONSOB 2016a).

### **Latest regulatory novelties**

Despite several changes have been made on the national ECF regulation, Italian Equity Crowdfunding has still continued to show a certain resistance in taking off (Cucchiurato 2017), thus making analysts wondering whether it could really meet previous expectations or not.

In the wake of the obtained modest performances, during the last 12 months the Italian legislator enacted further specific provisions that continue in removing limits of ECF availability, and in attracting as much investments as possible to the Equity Crowdfunding Industry. With the approval of the 2017 Budget Law and then of the Decree-Law no. 50 of 24 April 2017, ECF has become available for the whole Italian SMEs, regardless of both the legal form and the innovative requisite (Tencalla 2017)<sup>67</sup>.

Such provision represents a pivotal change in the industry, given that the majority of Italian business fabric is composed right from SMEs; in fact, ECF target which previously included 6,673 innovative startups and 325 innovative SMEs now encompasses even other 136,000 SMEs (Nicoli 2016). Additionally, fiscal benefits that were already provided for

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<sup>66</sup> In order to perform in-house profiling activities, platforms are required to formally communicate it to CONSOB and to subscribe additional insurance mechanisms.

<sup>67</sup> However, for the mentioned changes to be properly effective, a CONSOB intervention on the dedicated regulation is still required.

investments in innovative ventures were widened and made permanent, raising the percentage up to 30% of the invested amount for the whole investors, and thus removing previously existing differences in granted benefits (Brusaterra 2017).

### **An ongoing outline**

According to the European Digital Forum, the Italian legislative framework currently stands, jointly with United Kingdom, at the first place among the most advanced legislations in terms of growth policies and innovative entrepreneurial ecosystems development (Nicoli 2016).

As for Equity Crowdfunding, Italian market seems to progressively grow, even though the volumes remain still lower than the ones of UK or other European countries (Riganti, Ciccarelli 2017). In 2017 hence, the Italian ECF industry is showing surprising performances, especially thanks to the latest regulatory provisions, thus making this form of alternative finance an increasingly relevant resource for startups and SMEs (Crowd Advisors 2017).

What could lead Italian Equity Crowdfunding to higher volumes may definitely be a different approach of crowdinvestors to the instrument: according to the analysts hence, most individuals make an investment through ECF hoping for what is known in finance as “lottery effect” (ETica News 2015). More specifically, investors tend to consider money invested through ECF as “fun money”, thus hoping to have the luck of choosing an overwhelmingly performing startup or otherwise losing their money, rather than considering the investment as an overtime yield or a diversification opportunity.

However, the deployment of ECF as alternative source of risk capital in both small and medium-sized Italian enterprises, represents an important stimulus to their dimensional growth (Della Valle, De Santis 2017). Moreover, Equity Crowdfunding is becoming an always more concrete opportunity for the whole investors’ community, through which they are allowed to invest in real economy and to create networks among different companies, thus opening crucial opportunities for developments in international commerce (Nicoli 2016).



# CHAPTER THREE – EMPYRICAL ANALYSIS ON EQUITY CROWDFUNDING IN ITALY

## 3.1 METHODOLOGY

In this section, the methodology used to perform the research will be exposed; specifically, the following paragraphs will assess the data collection process, the databases composition and the tools and methods used for the analysis of data.

In order to obtain significant results, two different databases have been created; the Platforms Database (Platforms DB) which contains data from all the 23 Italian Equity Crowdfunding platforms accredited by CONSOB, and the Campaigns Database (Campaigns DB), that is composed by data from all the 122 Equity Crowdfunding campaigns conducted in Italy since the approval of the ECF regulation, which took place in 2013. Aiming at describing the phenomenon in the best possible way, both descriptive and statistical tools have been used.

The analyzed databases are composed of hand-collected data which has been personally gathered by the author; thus, they are unique and not available in any external source.

### 3.1.1 DATA COLLECTION

The data gathering started in August 3, 2017 and ended in September 13, 2017, which thus represents the latest update of entered records.

For what concerns the databases, they include either raw data that was found on CONSOB ECF platforms dedicated Registry and in ECF platforms websites, or other primary data which has been collected or calculated from external sources. As for these last, accessed sources principally consisted in National Companies Register, social networks, employment websites, people search engines, administrative documents and personal CVs.

The databases have been created using Microsoft Office Excel software.

#### **Data collection procedure**

In order to avoid possible data losses, a procedure has been established and then followed for the data entry in the two databases.

The first step consisted in creating a dedicated folder for each handled platform or project; then, the whole webpages and all the attached documents related to the item were downloaded and stored inside the folder, thus preventing possible website shutdowns, contents changes or similar issues. Another precautionary measure I took, consisted in the creation of

dedicated “control cells” in the Excel Spreadsheet; in details, these cells were filled with “if” formulas and conditionally formatted, in such a way that they would have provided an error message (both written and colored) if a contradictory data entry has been performed in certain sections.

After these preliminary operations, the information directly available in the main website was the first to be entered, followed by the one which could be found on the attached documents, and then by data which required a specific calculation to be inserted, thus leaving aside not available one. With respect to this missing data, a designed set of websites was accessed, aiming at finding lacking information; in case of unsuccessful results, the last chance consisted in searching for reliable documents which could provide it, otherwise, the related cell was left empty.

In conclusion, a challenging issue was represented by data which was not available because of the closing of hosting websites, either for platforms’ failures or for websites’ renovations. In order to address such problems, a web-based tool called “Wayback Machine” has been used; essentially, it allows users to access a cache version of the researched web-page at a precise date in the past, thus permitting them to reach data which seemed apparently lost. If neither this tool provided me the data I was looking for, I personally asked both platforms’ management teams or related institutions to access it, always receiving a helpful answer.

### **Databases composition**

With respect to Platforms DB, it encompasses all the 23 Italian ECF platforms authorized by CONSOB since the Italian legislator allowed them to apply for the enrollment in the dedicated Register. In this case, it is possible to observe that collected data still represents the current population of Italian ECF platforms.

For further details on all recorded platforms see Appendix 1.

As for Campaigns DB, it includes the whole 122 ECF campaigns hosted by Italian ECF platforms until the last day of data collection, namely September 13, 2017. In this case though, the sample corresponded to the population just at that time<sup>68</sup>; in fact, the population has recently increased, due to the launches of new ECF campaigns.

For further details on all recorded campaigns see Appendix 2.

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<sup>68</sup> For the purposes of this study, with respect to campaigns data collection, projects related to Clubdealonline platform have not been included in the Campaigns DB. This decision is based on the fact that Clubdealonline is a peculiar platform, which allows only registered users to browse the website (“registration fee” € 800 + “investment fee” 8% of invested capital), thus resembling more an investment club than a crowd-oriented ECF platform.



### 3.1.2 PLATFORMS DATABASE STRUCTURE

The Platforms Database has been designed as described below.

#### **Platforms (generic data about the platform)**

Data obtained from platforms websites and from the CONSOB dedicated Register<sup>69</sup>.

- STATUS: status of the platform [ACTIVE, INACTIVE, CLOSED];
- ECF PLATFORM: name of the platform;

#### **Hosted campaigns (number of campaigns published by the platform)**

Data obtained from platforms websites and from specialized Crowdfunding websites. Data has been found and recorded even for closed platforms which have previously been active; while platforms that never started to operate have no recorded data.

- ON BOARD CAMPAIGNS: n° of campaigns that were still on board for fundraising at the ending date of data collection;
- FAILED CAMPAIGNS: n° of campaigns that did not reach the minimum amount necessary to be funded;
- SUCCESSFUL CAMPAIGNS: n° of campaigns that reached the minimum amount necessary to make the funding effective;
- TOTAL N° OF CAMPAIGNS: n° of all published campaigns since the starting of the platform activity.

#### **Funding results (outcomes of platforms' Crowdfunding activities)**

Data obtained from platforms websites, specialized Crowdfunding websites and from the analysis of the Campaigns database. Data has been found and recorded even for closed platforms which have previously been active; while platforms that never started to operate have no recorded data.

- PLATFORM SUCCESS RATE (%): index of success of the analysed platform, obtained as a ratio between the number of successfully funded campaigns over the total number of closed ones;
- TOTAL EQUITY PLEDGED (€): total amount of pledges that the platform collected from all the closed campaigns, both from the funded ones and from the failed ones;

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<sup>69</sup> Both from the Ordinary Section and from the Special Section of the Register.

- TOTAL EQUITY SUBSCRIBED (€): total amount of equity that has been subscribed for all the campaigns hosted in the analysed platform after the closing<sup>70</sup>.

### **Platform location (geographical location of the platform)**

Data obtained from CONSOB dedicated Register.

- PLATFORM REGISTERED OFFICE (CITY): Italian city in which the platform has its registered office;
- PLATFORM REGISTERED OFFICE (REGION): Italian region in which the platform has its registered office;
- PLATFORM REGISTERED OFFICE (AREA): Italian area in which the platform has its registered office [NORTH, CENTRE, SOUTH].

### **Platform awareness/network (list of measures to estimate platform network)**

Data obtained from Facebook, LinkedIn and from computations of Campaigns DB data. Platforms which have no FB page or LinkedIn page have been deemed as having no friends or connections; moreover, platforms that never started to operate have been accounted as having 0 previous backers.

- N° OF FACEBOOK LIKES: n° of Likes on platform's Facebook page (weighted 20% in the calculation of the score);
- N° OF LINKEDIN CONNECTIONS: n° of connections on platform's LinkedIn profile (weighted 30% in the calculation of the score);
- N° OF PLEDGES: n° of single pledges that the platform has collected, given the fact that a user could have done more than one pledge, this is a proxy for the number of users that have already dealt with the platform (weighted 50% in the calculation of the score);
- PLATFORM NETWORK SCORE (0 to 5): score that I developed to approximate the network in which a platform could count on by computing the 3 dimensions previously explained. Precisely, the score consists in a weighted average of the natural logarithms of the 3 above-mentioned dimensions, which then has been proportionately forced to take values from 0 to 5, assigning the highest one to the best performer of the sample and then calibrating the others.

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<sup>70</sup> It is important to remind that pledges do not origin an effective equity subscription either if the minimum amount is not reached, or if the pledge causes total collected adhesions to exceed the maximum offered amount.

### **Platform general data (other Register information about the platform)**

Data obtained from CONSOB dedicated Register and from specialized Crowdfunding websites.

- **TPOLOGY:** it describes whether the platform hosts campaign from different sectors or just from one sector [GENERALIST, REAL ESTATE, GREEN ECONOMY];
- **PLATFORM INCORPORATION NAME:** name under which the platform is recorded on the CONSOB dedicated Register;
- **WEBSITE ADDRESS (URL):** URL of the platform website;
- **REGISTERED OFFICE:** address of the platform registered office;
- **CONSOB REGISTRATION ACT:** details of CONSOB Authorization Act;
- **DATE OF ENROLMENT:** date in which the platform has been authorized by CONSOB;
- **N° OF ENROLMENT:** progressive number of platform enrolment in CONSOB Register;
- **TYPE OF CONSOB REGISTER:** CONSOB Register in which the platform is enrolled [ORDINARY SECTION, SPECIAL SECTION, CLOSED PLATFORM].

### **3.1.3 CAMPAIGNS DATABASE STRUCTURE**

The Campaigns Database has been designed as described below.

#### **Campaigns (generic data about the campaign)**

Data obtained from the platform that hosts the campaign.

- **CAMPAIGN:** name of the campaign that aims to be crowdfunded;
- **PLATFORM:** name of the platform authorized by CONSOB which hosts the campaign [STARSUP, CROWDFUNDME, MAMACROWD, OPSTART, TIP VENTURES, MUUM LAB, EQUINVEST, ASSITECA CROWD, NEXT EQUITY, WEARESTARTING, UNICASEED, INVESTI-RE, COFYP, WALLIANCE, FUNDERA, ECOMILL, CROWD4CAPITAL, CLUBDEAL, EUROPACROWD];
- **BRIEF:** short brief of the main concept of the project;

- PROJECT AREA/SECTOR: project belonging sector [SOCIAL/SHARING SERVICES, GREEN ECONOMY, PROFESSIONAL SERVICES, ICT, FASHION/DESIGN, AGRO-FOOD, EQUITY CROWDFUNDING PLATFORM, INVESTMENT VEHICLE, BIOTECH/PHARMA, RESEARCH & DEVELOPMENT, REAL ESTATE].

### **Applicant company (data of funds seeking company)**

Data obtained from the platform that hosts the campaign, attached documentation of the Equity Crowdfunding campaign, Chamber of Commerce Business Profile, applicant company website, specialized Crowdfunding websites, AIDA<sup>71</sup> Database and National Companies Register.

- COMPANY NAME: name of applicant company;
- COMPANY AGE TODAY - (MONTHS): current age of the applicant company in months;
- COMPANY AGE AT THE OFFER DATE - (MONTHS): age in months of the applicant company at the starting date of the Crowdfunding campaign;
- DATE OF ESTABLISHMENT: date of enrolment of the company in the National Business Register;
- COMPANY REGISTERED OFFICE (CITY): Italian city in which the company has its registered office;
- COMPANY REGISTERED OFFICE (REGION): Italian region in which the company has its registered office;
- COMPANY REGISTERED OFFICE (AREA): Italian area in which the company has its registered office [NORTH, CENTRE, SOUTH];
- BUSINESS ORGANIZATION FORM: Italian business organization form of the applicant company [Start Up Innovativa, PMI Innovativa, PMI];
- COMPANY/PROJECT WEBSITE (HOMEPAGE): URL of the company/project website;
- PRE-OFFER CAPITALIZATION (€): total equity of the applicant company at the moment of the starting of the campaign;
- N° OF PRE-OFFER SHAREHOLDERS: n° of existent shareholders of the applicant company at the starting date of the campaign;

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<sup>71</sup> The acronym stands for the Italian “Analisi Informatizzata Delle Aziende Italiane”.

- N° OF PATENTS: n° of patents that the company owns at the moment of the starting of the campaign;

### **Applicant company financials** <sup>72</sup>

Data obtained from the attached documentation of the Equity Crowdfunding campaign, Chamber of Commerce Business Profile, AIDA Database and National Companies Register.

- TOTAL SALES (LAST AVAILABLE FINANCIALS) YEAR PRE-OFFER (€): value from Total Sales FS<sup>73</sup> line of the year before the offer started (at least from the same year);
- PROFIT/LOSS (LAST AVAILABLE FINANCIALS) YEAR PRE-OFFER (€): value from Profit/Loss FS line of the year before the offer started (at least from the same year)
- TOTAL SALES (LAST AVAILABLE FINANCIALS) YEAR POST-OFFER (€): value from Total Sales FS line of the year after the offer ended (at least from the same year);
- PROFIT/LOSS (LAST AVAILABLE FINANCIALS) YEAR POST-OFFER (€): value from Profit/Loss FS line of the year after the offer ended (at least from the same year);
- $\Delta$  TOTAL SALES (YEAR POST-OFFER - YEAR PRE-OFFER) (€): difference between the Total Sales value from the two analysed years (it is possible that this amount could not be calculated due to one year's value lack);
- $\Delta$  PROFIT/LOSS (YEAR POST-OFFER - YEAR PRE-OFFER) (€): difference between the Profit/Loss value from the two analysed years (it is possible that this amount could not be calculated due to one year's value lack);
- PRE-MONEY VALUATION (€): valuation of the company before the starting date of the campaign; it was calculated by hand with the "Pre-Money % Formula" and, when possible, it has been compared with the disclosed value as a confirmation<sup>74</sup>.

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<sup>72</sup> It could happen that the entered value doesn't come from the year before the starting date of the campaign or from the year after the ending date of the campaign, because of inexistence or unavailability reasons. In order to have a comparison term, missing values have been proxied, when possible, by applying the following rules: 1) if previous year value was missing => starting year value has been used; 2) if next year value was missing => ending year value has been used; 3) if previous year value and next year value were missing, and the campaign ran only within one year => starting year value has been used for previous year, while next year cell was left empty.

<sup>73</sup> The acronym stands for Financial Statements.

<sup>74</sup> It has been used the highest value between the two obtained by applying the formula (with maximum and minimum of equity offered) and then rounded at hundreds of euro.

## **Campaign information (financial details about the campaign)**

Data obtained from the platform that hosts the campaign, attached documentation of the Equity Crowdfunding campaign, BoD Resolutions, Chamber of Commerce Business Profile, applicant company website, personal calculation, specialized Crowdfunding websites, AIDA Database, National Companies Register, Italian Crowdinvesting Observatory.

- TARGET AMOUNT OF FUNDING OFFERED (€): amount of equity declared as target for the campaign;
- MINIMUM AMOUNT OF FUNDING OFFERED (€): minimum amount of equity offered for the funding campaign, if this amount is not reached, the funding process does not start at all;
- MAXIMUM AMOUNT OF FUNDING OFFERED (€): maximum amount of equity offered for the funding campaign, all pledges in excess to this amount cannot be collected;
- MINIMUM SHARE OF EQUITY OFFERED (%): percentage of ownership offered in case of reaching of the minimum amount of funding offered;
- MAXIMUM SHARE OF EQUITY OFFERED (%): percentage of ownership offered in case of reaching of the maximum amount of funding offered;
- MINIMUM PLEDGE CONTEMPLATED (€): minimum amount of pledge contemplated;
- ONLY VOTING SHARES OFFERED: type of shares offered with the subscription, it takes the YES value if only voting shares were offered [YES, NO];
- ONLY NON-VOTING SHARES OFFERED: type of shares offered with the subscription, it takes the YES value if only non-voting shares were offered [YES, NO];
- BOTH TYPES OF SHARES OFFERED: type of shares offered with the subscription, it takes the YES value if both voting shares and non-voting shares were offered [YES, NO];
- STARTING DATE OF CAMPAIGN: date in which the campaign started;
- ENDING DATE OF CAMPAIGN: date in which the campaign ended;
- CAMPAIGN DURATION (DAYS): number of days of campaign lasting.

### **Campaign results (outcomes of fundraising)**

Data obtained from the platform that hosts the campaign, Chamber of Commerce Business Profile, applicant company website, personal calculation, specialized Crowdfunding websites, AIDA Database, National Companies Register.

- CAMPAIGN SUCCESSFULLY FINANCED: result of the funding activity, it takes the YES value if the collected pledges overcome the minimum amount of funding offered [YES, NO, ON BOARD];
- PRESENCE OF PROFESSIONAL INVESTOR: it takes the YES value if a professional investor has already invested in the campaign<sup>75</sup> [YES, NO];
- AMOUNT OF FUNDING PLEDGED (€): total amount of equity pledged;
- AMOUNT OF FUNDING SUBSCRIBED (€): total amount of equity subscribed;
- SHARE OF EQUITY SUBSCRIBED (%): total stake of ownership subscribed;
- % OF FUNDING (WRT TARGET AMOUNT) (%): percentage of funding of the campaign with respect to the declared funding target<sup>76</sup>;
- AVERAGE AMOUNT PLEDGED (€): average pledge collected;
- OVERFUNDING: it takes the YES value if the raised funding overcomes the funding target [YES, NO];
- N° OF PLEDGERS: n° of individuals that have made a pledge.

### **Campaign awareness/network (list of measures to estimate campaign network)**

Data obtained from the platform that hosts the campaign, LinkedIn, Facebook, applicant company website, specialized Crowdfunding websites.

- N° OF PHOTOS IN THE CAMPAIGN PAGE: n° of photos/infographics displayed in the project description page (weighted 20% in score creation);
- N° OF VIDEOS IN THE CAMPAIGN PAGE: n° of videos displayed in the project description page (weighted 40% in score creation);
- N° OF WORDS USED TO DESCRIBE THE PROJECT: n° of words used for the project description (weighted 10% in score creation);
- PRESENCE OF PRESS MATERIAL ABOUT THE CAMPAIGN: it takes the YES value if the campaign page recalls press materials like articles or interviews related to the project [YES, NO] (weighted 10% in the calculation of the score);

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<sup>75</sup> In this circumstance, it is fundamental to remind that pursuant to current provisions, the funding could be effectively performed just in case a professional investor subscribed at least 5% of total subscribed funding.

<sup>76</sup> It could take a value above 100% for overfunded campaigns, which are the ones that overcome their target.

- UPDATES/Q&A SECTION FILLED: it takes the YES value if a filled “Updates Section” and/or “Q&A Section” is shown in the project page<sup>77</sup> [YES, NO] (weighted 20% in the calculation of the score);
- CAMPAIGN PRESENTATION SCORE (0 to 10): score that I developed to evaluate the presentation effectiveness by computing the 5 dimensions previously explained.  
Precisely, the score consists in a weighted average of the 5 above-mentioned dimensions (some of them replaced with their natural logarithms) which then has been proportionately forced to take values from 0 to 10, assigning the highest one to the best performer of the sample and then calibrating the others.
- PROJECT/COMPANY N° OF LINKEDIN WORKERS: n° of LinkedIn users mentioned as “employees” in the LinkedIn profile (if any) of the project/company (weighted 10% in the calculation of the score);
- PROJECT/COMPANY N° OF FACEBOOK LIKES: n° of likes in the Facebook page (if any) of the project/company (weighted 20% in the calculation of the score);
- PROJECT/COMPANY N° OF LINKEDIN CONNECTIONS: n° of LinkedIn connections in the LinkedIn profile (if any) of the project/company (weighted 30% in the calculation of the score);
- TEAM MEMBERS TOTAL N° OF LINKEDIN CONNECTIONS: total n° of LinkedIn connections of the members of the proponent team (if registered on LinkedIn);
- TEAM MEMBERS AVERAGE N° OF LINKEDIN CONNECTIONS: total n° of LinkedIn connections of the members of the proponent team (if having a LinkedIn profile)<sup>78</sup> (weighted 40% in the calculation of the score);
- CAMPAIGN NETWORK SCORE (0 to 10): score that I developed to evaluate the network in which the Crowdfunding campaign could count on by computing the 4 dimensions previously explained<sup>79</sup>. Precisely, the score consists in a weighted average of the natural logarithms of the 4 above-mentioned dimensions, which then has been proportionately forced to take values from 0 to

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<sup>77</sup> For Q&A, even a Q&A document have been conceived as a positive result.

<sup>78</sup> Given the fact that the maximum number of connections shown for a single user profile is 500, the maximum value that this cell could have is 500.

<sup>79</sup> The total number of LinkedIn connections of team members has not been used; on its behalf, the average number has been considered in order to proxy teams’ personal networks.



10, assigning the highest one to the best performer of the sample and then calibrating the others.

### **The team – Age (information about the age of proponent team members)**

Data obtained from CVs of proponent team members, Chamber of Commerce Business Profile, attached documentation of the Equity Crowdfunding campaign, BoD Resolutions, Chamber of Commerce Business Profile, AIDA Database, National Companies Register, LinkedIn, Facebook, applicant company website, specialized Crowdfunding websites, general online researches for reliable documents about members.

- N° OF TEAM MEMBERS: n° of components of the proponent team introduced in the campaign page or in the Information Document of the campaign;
- N° OF “AGE CLASS” MEMBERS: n° of proponent team members that belong to the analysed age class (the classes are: 18-23, 24-30, 31-40, 41-50 and >50);
- TOTAL AGE OF THE TEAM: aggregate age of the proponent team members;
- AVERAGE TEAM AGE: average age of the proponent team.

### **The team – Educational and professional background (information about both educational and professional background of proponent team members)**

Data obtained from CVs of proponent team members, Chamber of Commerce Business Profile, attached documentation of the Equity Crowdfunding campaign, LinkedIn, Facebook, applicant company website, specialized Crowdfunding websites, general online researches for reliable documents about members. For what concerns the previous experiences of proponent team members, they usually required a personal elaboration of the available data, thus depending on the authors' subjectivity.

- N° OF “NO TITLES” MEMBERS: n° of proponent team members who did not complete any educational path or who did not disclose their educational background;
- N° OF “HIGH SCHOOL” MEMBERS: n° of proponent team members who completed their high school education;
- N° OF “BACHELOR DEGREE” MEMBERS: n° of proponent team members who completed their bachelor degree education;
- N° OF “BACHELOR DEGREE + MASTER” MEMBERS: n° of proponent team members who completed their bachelor degree education and who obtained even a Master;

- N° OF “MASTER DEGREE” MEMBERS: n° of proponent team members who completed their master degree education;
- N° OF “MASTER DEGREE + MASTER” MEMBERS: n° of proponent team members who completed their master degree education and who obtained even a Master;
- N° OF “PHD” MEMBERS: n° of proponent team members who completed their PhD education;
- N° OF MEMBERS WITH PREVIOUS EXPERIENCE IN THE PROJECT SECTOR: n° of proponent team members who own a relevant know-how about the project filed or about one of the areas that the project involves, achieved either with the educational career or with previous professional experiences;
- N° OF MEMBERS WITHOUT PREVIOUS EXPERIENCE IN THE PROJECT SECTOR: n° of proponent team members who do not own a relevant know-how about the project filed or about one of the areas that the project involves, achieved either with the educational career or with previous professional experiences;
- N° OF MEMBERS WITH PREVIOUS ENTREPRENEURIAL EXPERIENCE: n° of proponent team members who have already had entrepreneurial experiences as founder or co-founder;
- N° OF MEMBERS WITHOUT PREVIOUS ENTREPRENEURIAL EXPERIENCE: n° of proponent team members who have not already had entrepreneurial experiences as founder or co-founder;
- PROJECT HUMAN CAPITAL SCORE (0 to 10): score that I developed to evaluate the Human Capital in which the crowdfunded project could count on by computing the 11 dimensions previously explained. Precisely, each level of education assigns a specific mark, thus creating an averaged sub-score from 0 to 6 (“Edu Score”) for the proponent team. Then, it could be increased from other two averaged sub-scores: in case of professional experiences (“Sector Experience Score”) and in case of entrepreneurial experiences (“Entrepreneurial Experience Score”), respectively accounting for maximum 2 points each one. The score ranges from 0 to 10, that is the maximum achievable by aggregating the three sub-scores.

### **3.1.4 ANALYSIS TOOLS AND METHODS**

After the databases completion, collected data has been managed, transformed and analysed by means of different tools and methods that will be exposed in the following part of the chapter. The data-analysis software I used were Microsoft Office Excel 2016 and STATA 14 (MP version), both licensed by the University of Padua.

#### **Microsoft Office Excel 2016**

Microsoft Excel is a productivity software which basically consists in a spreadsheet that allowed me to create the databases, to perform values transformations by applying several kinds of formulas and to present data in effective ways, both in tabulate and in graphic form.

- **Worksheet:** this is the main tool provided by Excel; it consists in an infinite range of cells, divided by rows and columns, which could be entered with several data types. Along with formulas, which consisted in the main function I used, worksheets have been integrated with the usage of formatting rules and filters, specific tools which facilitate the handling of big amount of data and allow the user to perform a sort of database interrogation. Jointly with filters, several “subtotal” and “if” formulas have been employed to give the total, average and rate results after each filtering activity on the data.
- **Pivot Table:** this is a powerful Excel tool which is used to present collected data. Essentially, the Pivot Table takes a snapshot of entered data in one specific worksheet and permits the user to create countless tables based on it. It is important to underline that it does not involve data modification, but it only requires the selection of values, rows, sub-rows, columns, sub-columns and filters which the final table must display. According to the purposes of this study, Pivot tables perfectly fit the needs of clear data reporting without entailing the possibility to accidentally alter entered values.
- **Graph Editor:** this consists in a valuable instrument that made me capable of creating charts from a wide range of different plot typologies, even for multiple variables and series, in order to graphically represent the obtained results.

#### **STATA 14**

STATA is a general-purpose statistical software, often used in research fields, which provides the user a massive number of data-analysis tools; its main functions include data management, simulations, regressions, graphics and statistical analysis.

Given that the analyses made for this research relies on a basic knowledge of Statistics, a targeted set of instruments has been used to perform the purposed assessments.

- **Cluster Analysis:** it is a statistical technique of multivariate analysis, which essentially consists in grouping homogeneous items in clusters; such grouping operation could rely on different algorithms aiming at minimizing the distance (with respect to selected variables) between the examined items. Clustering was very effective in performing this research; in fact, it helped to identify distinct conglomerates of ECF platforms in the Italian ecosystem.
- **Correlation Matrix:** this tool shows the correlations between a selected set of variables. Given that the most significant variables obtained from the collected data, both for Platforms DB and for Campaigns DB, showed non-linear relationships when examined, the design of a linear regression model did not seem the most appropriate choice. Therefore, in order to discuss hypotheses about potential influences among them, correlations between variables have been assessed.
- **Means Comparison Test:** this test allows to verify if there is reason to assume that two different groups have different average values for a specified variable; moreover, in case of positive outcome, it is also possible to assess which group is likely to have the higher one. Given that both the created databases contain data which is suitable to be grouped, this was a valuable aid in corroborating certain hypotheses.
- **Wilcoxon-Mann-Whitney U Test:** the usage of this tool was necessary when the Means Comparison Test assumption requiring observations to follow a normal distribution was violated by the examined variable. Being a non-parametrical test, the Wilcoxon-Mann-Whitney U Test fitted at best those circumstances, without being influenced both by data distribution, sample size and outliers. Although it approximates the traditional t-test, this tool loses a bit of power with respect to the previous one, thus permitting only to affirm if there is a significant difference in the median value of the groups without assessing its possible magnitude. Anyway, in case a significant difference exists between the compared subsamples, the test even allowed to obtain the estimated probability that one of the two groups could have a larger value than the other for the selected variable, thus providing useful outcomes for the study.

## 3.2 ECF PLATFORMS-RELATED FINDINGS

In order to start the analysis of Italian Equity Crowdfunding, the first addressed area consisted in the Italian ECF Platforms ecosystem. Therefore, this part of the thesis aims at exposing findings obtained from Platforms Database. With respect to the studies that were conducted, both descriptive assessments and statistical analyses have been performed; thus, obtained results will be divided in two dedicated sections.

### 3.2.1 DESCRIPTIVE ANALYSIS

The following part will present descriptive findings related to Italian Equity Crowdfunding platforms. Specifically, geographical and sectorial distribution, funding and network levels, and finally information disclosure will be addressed.

#### Geographical distribution

The first insight that need to be assessed concerns the geographical distribution of the 23 Italian ECF platforms. As Figure 13 displays, Northern Italy has saw the birth of 15 platforms, with 12 of them having their registered office in Lombardia. This is due to the fact that Lombardia is the region in which is located Milano, the most important financial district of the country. As for Central and Southern Italy, it hosts 8 ECF platforms, accounting for almost 35% of the total nation enrolments.

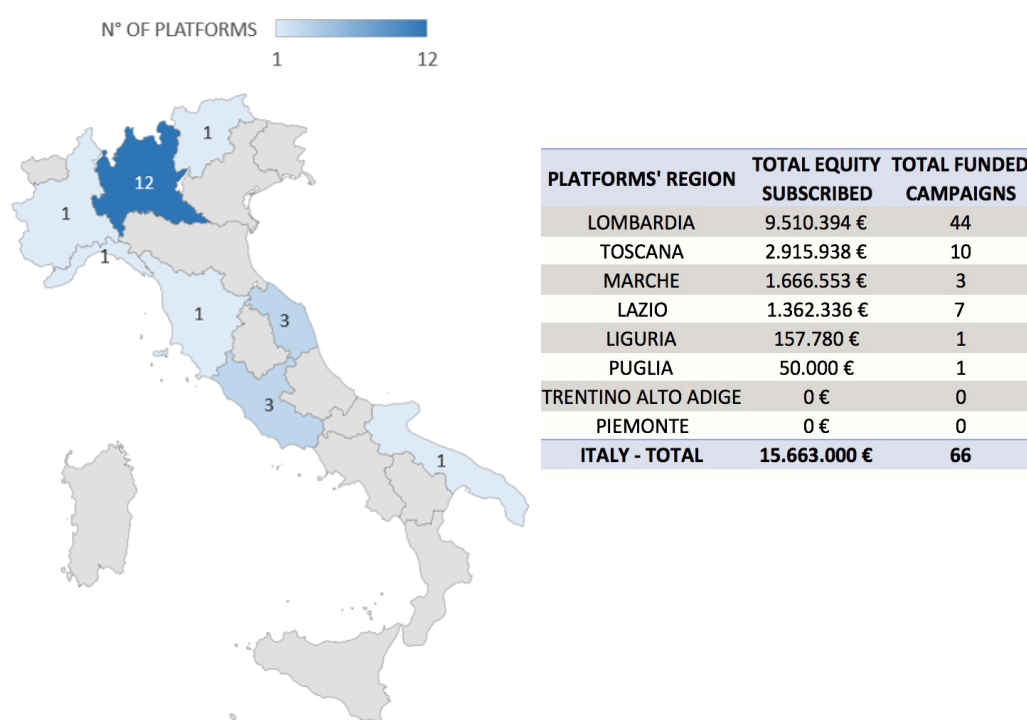


Figure 13 - Number of ECF platforms, total amount of equity subscribed and total funded campaign by platforms' provenance region (Author's personal elaboration)

Currently, 4 of them have been closed and other 5 have not yet hosted any ECF deal; as for the latter's circumstance, it depends on the fact that after platforms enrol in CONSOB Register, there is often lead times which have to be faced for obtaining necessary authorizations to be completely ready to operate. Comprehensively, 18 of the 19 active platforms are enrolled in the Ordinary Register of CONSOB, while one of them belongs to the Special Section. Heading back to Figure 13, it is observable how the total amount of equity subscribed for each platform's provenance region tends to follow the distribution of platforms in terms of number per region, apart for Toscana, which seems to be the second most successful region despite hosting just one platform, which is Starsup.

### Activity and funding levels

Another useful point of view from which analyzing Italian ECF development could be the one provided by the trend followed by platforms' enrolments in CONSOB Register, since they have been given the possibility to start the operations by the legislator. Looking at Figure 14 hence, it is possible to note that just 2 platforms applied in 2013 (CONSOB Regulation was enacted in June 2013), while the biggest fraction of platforms enrolled between 2014 and 2015. A peculiar fact hence consists in the small number of applications performed in the last two years; considering the continuous growth that this industry is experiencing year after year, it probably means that Equity Crowdfunding has still a lot of work to do in order to convince Italian entrepreneurs in choosing it as core business and thus adopting its business model.

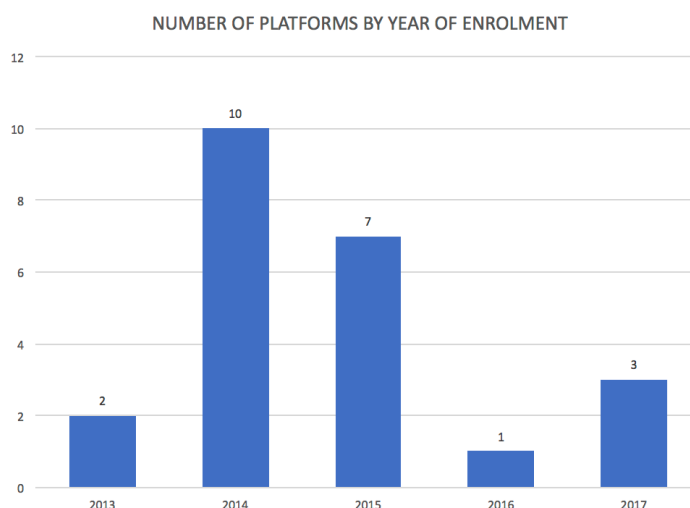


Figure 14 - Number of ECF platforms by year of enrolment (Author's personal elaboration)

Sliding the attention on a platform basis, Figure 15 provides interesting outputs, which have to be intended as updated at the date of writing, and thus not comprehensive of the whole

2017. Precisely, the chart ranks the 16 Italian ECF platforms which have hosted at least one campaign since the birth of ECF in Italy, with the most active ones on the left side.

By considering the breakdown of total number of hosted deals for each platform, it is quite always evident how 2017 represents the year with the highest level of activity, often consisting in more than 50% of total hosted campaigns, apart for the case of Starsup. In addition to the positive trend that ECF is still experiencing in Italy, this circumstance probably depends also on the fact that, as stated before, usually platforms start to operate with a relevant lag; thus, the highest activity rate of 2017 could be even based on the starting of operations of platforms enrolled in previous years. Additionally, it is worth to mention that the less-active-platforms group is formed by a heterogeneous mix of four operators; in details, Cofyp and Walliance rank there due to the fact that 2017 was their first year of activity, Investi-re it still active but did not host any deal since 2015, and finally Smarthub, that has been shut in 2016.

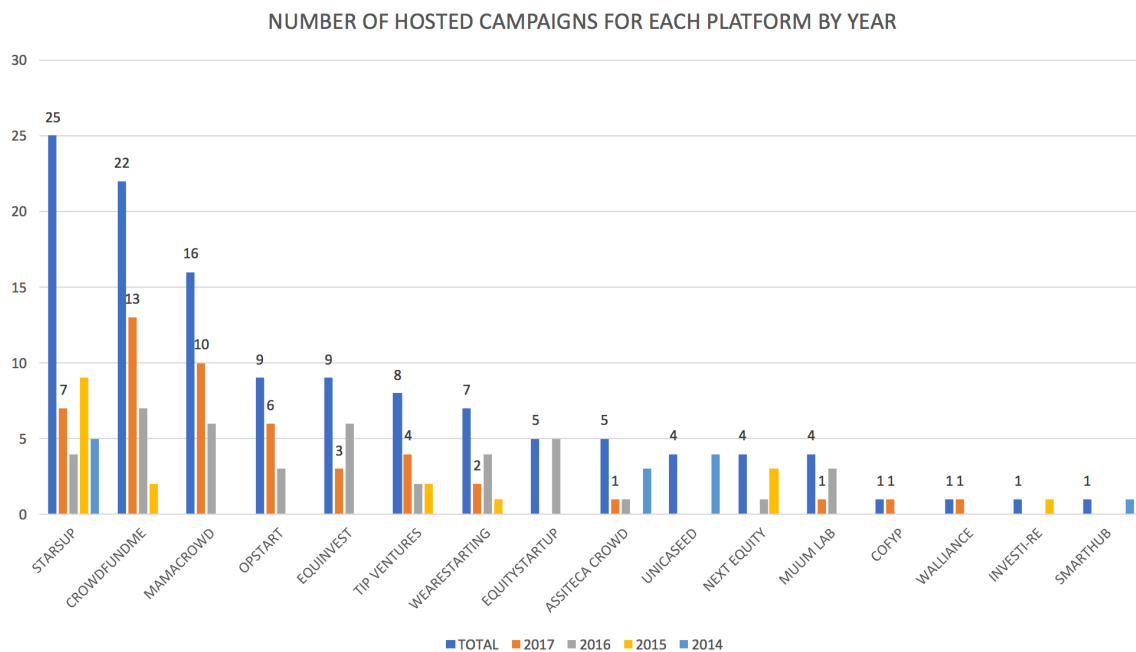


Figure 15 - Number of hosted campaigns for each platform by year (Author's personal elaboration)

In making a similar analysis, by focusing on the total funded campaigns with respect to the hosted ones, it is expectable a direct relation between the two dimensions. Accordingly, Figure 16 highlights how quite always a higher number of hosted deals translates in a higher number of successes for the platform, with the only exceptions represented by Starsup, Equitystartup and Next Equity. Moving from these exceptions hence, I wanted to verify if a higher number of proposed deals has meant also a higher amount of equity subscribed, thus implying a plausible impact of campaigns' numerousness.

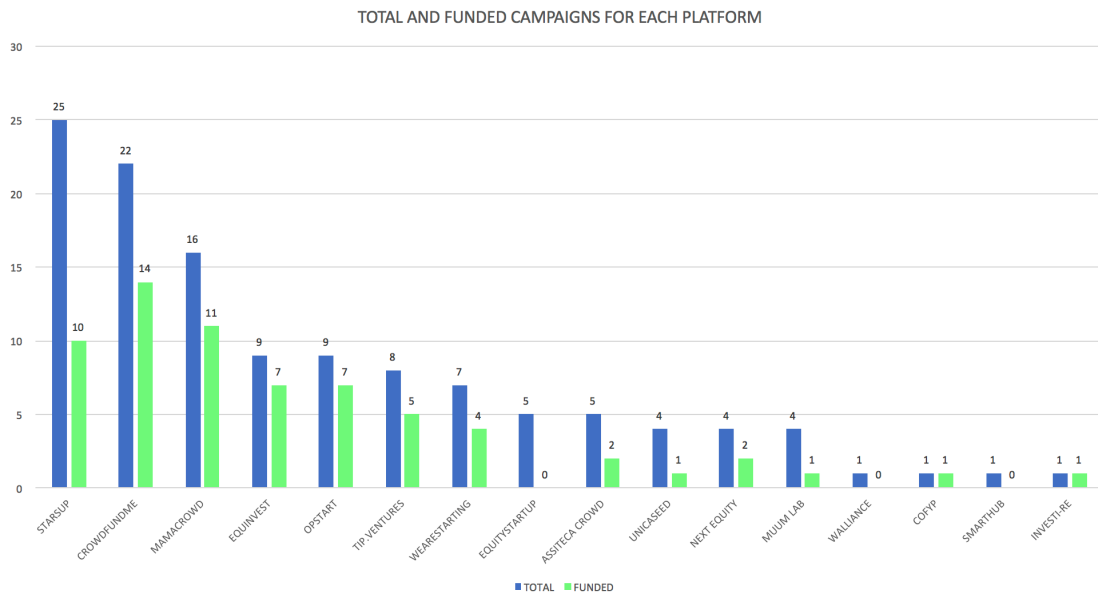


Figure 16 - Total hosted and successful campaigns for each platform (Author's personal elaboration)

Contrarily to what expected, Figure 17 reports platforms in a different order if compared with the previous graph, thus ranking Mamacrowd, which were the third platform for hosted deals, as the first one for raised funds, followed by Starsup and Crowdfundme<sup>80</sup>. However, the first three positions are not the only ones that changed; in fact, Next Equity is ranked as fourth with just 4 campaigns hosted and 2 of them successfully funded. Finally, thanks to the huge difference between amounts of the third and the fourth platform, it is possible to clearly denote the top 3 performers in terms of raised funds; namely, Mamacrowd, Starsup and Crowdfundme.

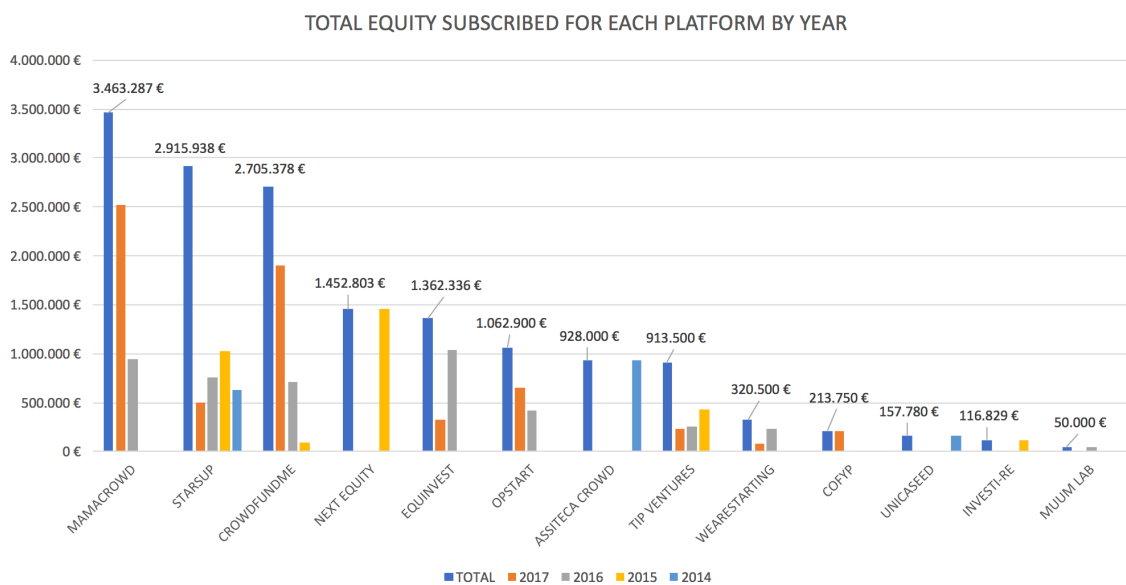


Figure 17 - Total amount of equity subscribed for each platform by year (Author's personal elaboration)

<sup>80</sup> It is important to observe that the amount of both total and successful campaigns is subject to variations which happened after data collection period, either for the ending of campaigns that were on-board at the time or for the launch of new ones.



## Sectors involved

After having examined the development of Italian ECF platforms in terms of funding collected, a challenging perspective appeared to be the assessment of the different sectors that platforms' hosted campaigns have involved. Given that 15 of the 16 platforms which have hosted at least one campaign are generalist ones<sup>81</sup>, it is reasonable to expect that platforms with a higher amount of hosted campaigns have dealt with more industries. Actually, Figure 18 confirms such expectation, thus highlighting how the first three platforms hosted deals which involved an average of 7 different sectors each one. Moreover, it is evident how certain sectors such as ICT, Green Economy and Social/Sharing Services are covered by quite all the examined platforms.

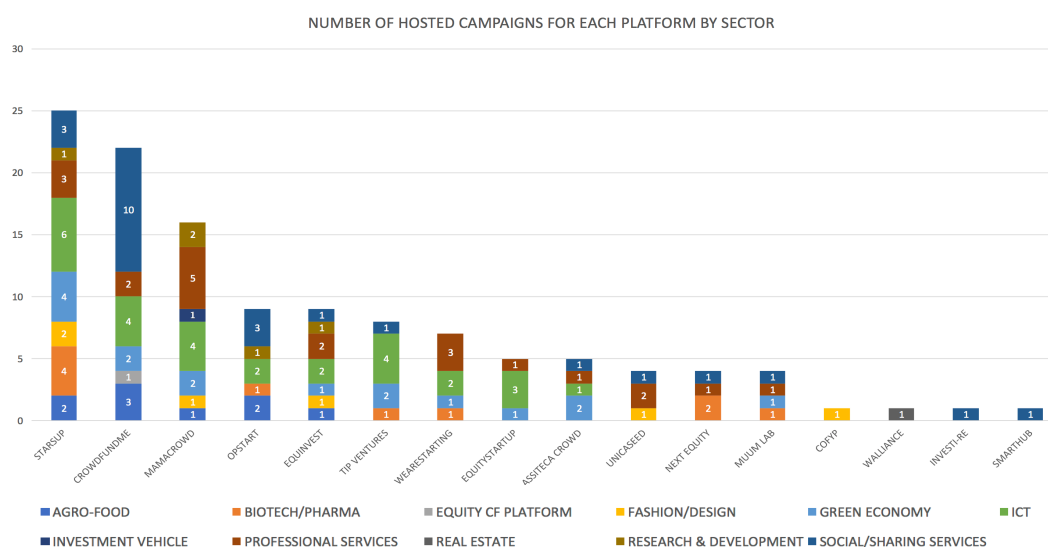


Figure 18 - Total hosted campaigns for each platform by sector (Author's personal elaboration)

## Platforms' networks

In order to assess potential levers that platforms could exploit when performing their operations, I decided to collect data about measures which could somehow proxy the awareness on which they could count on. To this purpose, I recorder the number of Facebook Likes, LinkedIn connections and the number of collected pledges<sup>82</sup> for each platform, thus computing them and creating a specific network score ranging from 0 to 5.

<sup>81</sup> That means they are open to host campaigns involving different sectors and do not restrict their operations to just one of them.

<sup>82</sup> This value has been used to approximate the number of different investors reached by the platform, with respect to previously hosted campaigns. Considering that just the number of subscriptions obtained for each deal was disclosed, this last data was not directly knowable because of the fact that certain investors have made a subscription in more than one campaign.

Figure 19 reports all the 23 enrolled platforms with their network scores (represented by the green line), ordered by raised funds; with this last indicator used as a measure for platforms' success. Therefore, each one of the previously-mentioned variables' trends has been represented by using a logarithmic scale in order to avoid scale issues.

The first fact which is clearly observable consists in that the first 9 positions are occupied by platforms which could count on contributions from all the three dimensions, as setting this as a minimum requirement to appropriately operate in ECF industry. On the other side actually, considering that the blue vertical line represents the division between platforms which raised funds and other which did not, it is remarkable that just 2 platforms out of 13 were able to raise equity subscriptions despite not having both their own Facebook and LinkedIn profiles.

As expected, the chart highlights that platforms with highest network scores are ranked in the first positions; therefore, apart for Cofyp, it is evident that as long as the score drops, the funding performance falls too, with a network score of almost 2 that seems to be required to succeed.

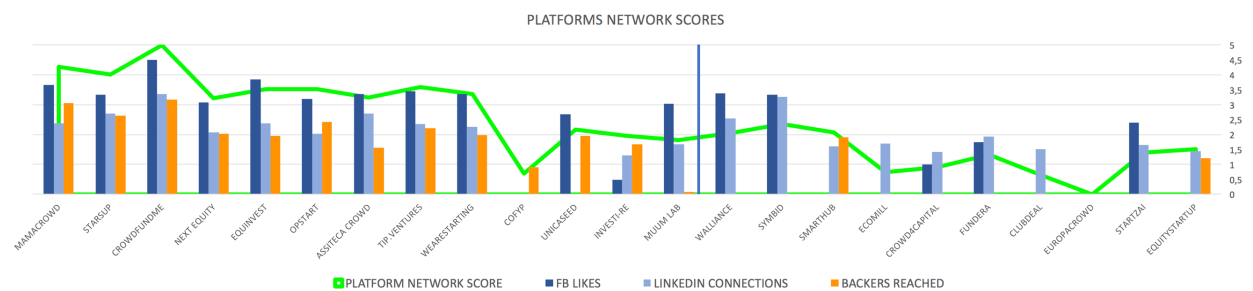


Figure 19 - Platforms' network scores ordered by total amount of equity subscribed (Author's personal elaboration)

### Information availability

The last dimension I stressed when analyzing platforms from a descriptive viewpoint regarded their transparency. To this purpose, when collecting data about each recorded deal, I measured the amount of campaign-related information disclosed by every active portal, thus transforming obtained results in a numerical value which I then used to rank platforms. As Figure 20 shows, there is a minimum set of information which is disclosed by almost all platforms; while certain other, such as details about single investors, are rarely made available. When going into details though, it turned out that best performing platforms, with respect to this feature, are exactly the same three portals which have been more active, which have raised the most subscriptions and which obtained the highest network score; namely, Mamacrowd, Starsup and Crowdfundme. As confirmed by previous analyses, they seem to form the top-performers class for what concerns Italian ECF platforms' environment.

| INFO AVAILABILITY ON ACTIVE PLATFORMS                  | MAMACROWD  | STARS UP SRL | CROWDFUNDME SRL | UNICASEED | ASSITECA CROWD | OPSTART   | TIP VENTURES | INVESTI-RE | NEXT EQUITY | COFYP     | EQUINVEST | WEARSTARTING | WALLIANCE | MIUM LAB  |
|--|--|--------------|-----------------|-----------|----------------|-----------|--------------|------------|-------------|-----------|-----------|--------------|-----------|-----------|
| CAMPAIGN NAME  |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| COMPANY APPLICANT                                      |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| COMPANY INCORPORATION TYPE                             |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| COMPANY/PROJECT WEBSITE                                |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| COMPANY/PROJECT SOCIAL NETWORKS                        |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| MINIMUM AMOUNT OF FUNDING OFFERED                      |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| MAXIMUM AMOUNT OF FUNDING OFFERED                      |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| % OF EQUITY OFFERED IF MIN AMOUNT IS REACHED           |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| % OF EQUITY OFFERED IF MAX AMOUNT IS REACHED           |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| MINIMUM ACCEPTED PLEDGE                                |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| TYPE OF SECURITIES OFFERED                             |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| CAMPAIGN DURATION                                      |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| AMOUNT COLLECTED                                       |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| OVERFUNDING  |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| NUMBER OF PLEDGES                                      |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| DETAILS OF PLEDGERS                                    |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| PROFESSIONAL INVESTOR CHECK                            |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| FINANCED/UNFINANCED                                    |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| PROJECT DESCRIPTION                                    |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| TEAM DESCRIPTION                                       |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| CVS OF TEAM MEMBER                                     |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| PROJECT PITCH/BUSINESS PLAN                            |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| TEAM CONTACTS /FAQ SECTION ABOUT PROJECT/COMMENTS/NEWS |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| OFFER INFORMATION DOCUMENTS                            |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| COMPANY REGISTRATION DETAILS - "VISURA CAMERALE"       |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| MINUTES OF THE MEETING OF STOCKHOLDERS                 |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| PRE-MONEY VALUATION                                    |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| FINANCIAL STATEMENTS                                   |  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| <b>TOTAL INFORMATIVE SCORE</b>                         | <b>102</b>   | <b>101</b>   | <b>98</b>       | <b>97</b> | <b>94</b>      | <b>91</b> | <b>89</b>    | <b>88</b>  | <b>87</b>   | <b>86</b> | <b>85</b> | <b>84</b>    | <b>82</b> | <b>77</b> |
| <b>RANK</b>  | <b>1</b>   | <b>2</b>     | <b>3</b>        | <b>4</b>  | <b>5</b>       | <b>6</b>  | <b>7</b>     | <b>8</b>   | <b>9</b>    | <b>10</b> | <b>11</b> | <b>12</b>    | <b>13</b> | <b>14</b> |
| <b>LEGEND</b>  | <b>EXPLANATION</b>   |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| <b>4</b>   | The info IS directly displayed in one of the pages of the platform website.  |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| <b>3</b>   | (Usually) The info IS NOT directly displayed in one of the pages of the platform website but IS obtained by analyzing the project related documentation.   |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| <b>2</b>   | (Usually) The info IS NOT directly displayed in one of the pages of the platform website but COULD BE obtained by analyzing the project related documentation; eventually, it COULD BE achieved through external researches. |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| <b>1</b>   | The info COULD BE displayed in one of the pages of the platform website or in the project related documentation; otherwise it IS NOT PROVIDED.   |              |                 |           |                |           |              |            |             |           |           |              |           |           |
| <b>0</b>   | The info IS NOT PROVIDED by the platform website.  |              |                 |           |                |           |              |            |             |           |           |              |           |           |

Figure 20 - Information availability in active ECF platforms (Author's personal elaboration)

### 3.2.2 STATISTICAL ANALYSIS

The following part will describe the statistical analysis of data performed with respect to Platforms Database, which pursued two main objectives: assessing the presence of a certain “geographical effect” with respect to platforms’ performances and trying to investigate if the whole ecosystem of platforms could be split in quite homogeneous groups.

While the former goal has been addressed by testing whether or not performances tend to differ when platforms’ registered office location changes, the latter has been approached by executing a Cluster analysis. Obviously, the whole analyses took into account just platforms which have already hosted at least one terminated campaign, given that for the others there were no performed activities at all.

A necessary disclaimer must be made before introducing performed researches: aiming at evaluating different platforms’ performances in terms of investors’ choices, I decided to use the amount of funds pledged instead of the amount of total subscriptions as analyzed variable. Although it did not consist in a huge difference (total collected pledges are 7% higher than subscriptions); in so doing, all the adhesions performed by the crowd have been considered, thus including in the analysis the whole campaigns recorded, even the ones from platforms that have collected pledges but did not reach the minimum amount to make the funding effective.

Variables used in performing all the analyses are reported in Table 1.

| VARIABLE NAME      | DESCRIPTION  |
|--------------------|--|
| PLAT               | Name of the platform.  |
| PLEDGED_FUNDS      | Total amount of funds pledged.   |
| SUCCESS_RATE       | Rate of success of the platform, obtained as a ratio between successfully funded and hosted campaigns.   |
| N_TOTAL_CMP        | Number of total campaigns hosted by the platform.  |
| N_PLEDGES          | Number of single pledges collected by the platform during its fundraising activities.  |
| PLAT_NETWORK_SCORE | 0 to 5 score which considers the number of Likes on the platform’s Facebook Page, the number of connections on the LinkedIn platform’s page and the number of pledges collected by the platform during its fundraising activities. |
| PLAT_LOC_AREA      | Italian area in which the platform has its registered office. The variable takes the value 1 for Northern Italy, while it takes the 0 value for Central and Southern Italy.  |

*Table 1 - Description of used variables (Author’s personal elaboration)*

## Means comparison test

With respect to the first objective introduced above, I selected certain dimensions in order to proxy platforms' performance levels and thus to assess their behavior; namely, such variables have been identified in AMOUNT OF PLEDGED FUNDS, SUCCESS RATE and NUMBER OF COLLECTED PLEDGES.

The tool I initially decided to use aiming at verifying how platforms' performances tend to vary in different geographical locations consisted in the traditional t-test. However, it is common knowledge that among its requirements, which are necessary to provide accurate outputs, there are both a large sample size and a normal distribution to be followed by observations.

With respect to the dataset, all the 15 Italian platforms which have hosted at least one concluded deal were not considered numerous enough to satisfy the first prerequisite; additionally, the three analyzed variables were characterized by observations that in some cases seemed not to follow a normal distribution. In order to control for the just mentioned assumption, I utilized the Shapiro-Wilk test; as demonstrated by the obtained report shown in Table 2, the variables PLEDGED\_FUNDS and N\_PLEDGES significantly violated the normality assumption. As for what concerned SUCCESS\_RATE, although it showed a normal distribution it has been handled as well as the other variables, because of its reduced quantity of observations.

| <i>Shapiro-Wilk W test for normal data</i> |     |         |       |        |         |
|--|-----|---------|-------|--------|---------|
| Variable                                   | Obs | W       | V     | z      | Prob>z  |
| PLEDGED_FUNDS                              | 15  | 0.82644 | 3.365 | 2.400  | 0.00820 |
| N_PLEDGES                                  | 15  | 0.61822 | 7.402 | 3.959  | 0.00004 |
| SUCCESS_RATE                               | 15  | 0.96869 | 0.607 | -0.987 | 0.83820 |

*Table 2 - Shapiro-Wilk test for amount of pledged funds, number of collected pledges and success rate (Author's personal elaboration)*

After having ascertained what exposed above, I decided to utilize a non-parametrical test, in such a way that both observations' distribution and quantity would have not affected obtained results; precisely, the used test was the Wilcoxon-Mann-Whitney U. If one hand it was able to assess variables' behaviors in case of low numerosness and non-normal distributions, on the other hand, it was not as precise as the Student t-test. Indeed, it works by ranking observations and thus focusing on the median value instead of the average one; as a consequence, it provides indications just about the existence of a difference in the median value of the two subsamples' populations. Additionally, it also provides the estimated probability for

a subsample to have a larger value for the examined variable with respect to the other, thus being suitable to be used for the study in order to approximate t-test results when the null hypothesis can be rejected with statistical significance.

### Geographical effect

In order to pursue the introduced research goal, the three above-mentioned variables have been examined by comparing platforms located in Northern Italy with platforms that have their registered office in Central and Southern Italy. This categorization has been implemented in order to have two different subsamples; however, just one platform has been incorporated in the South, being thus more suitable to be grouped with the ones located in the Centre.

The first dimension to be analyzed was the AMOUNT OF PLEDGED FUNDS; basically, I wanted to verify if platforms located in the North collect different levels of funds with respect to the other that are instead located in the Central/Southern area. In that respect, the hypothesis to be tested was:

*H1: Platforms located in the North collect different amounts of pledged funds than platforms located in the Centre/South.*

As shown by Table 3, portals located in the Centre/South seemed to have a slightly higher AMOUNT OF PLEDGED FUNDS than the other platforms.

| <i>Summary for variable:</i> |         | PLEDGED_FUNDS |    |
|------------------------------|---------|---------------|----|
| <i>by categories of:</i>     |         | PLAT_LOC_AREA |    |
| PLAT_LOC_AREA                | mean    | sd            | N  |
| 0                            | 1257116 | 1234659       | 5  |
| 1                            | 1051926 | 1311346       | 10 |
| Total                        | 1120323 | 1245407       | 15 |

*Table 3 - Observed values for average amount of pledged funds of the two analyzed groups (Author's personal elaboration)*

However, test results shown in Table 4 did not provide sufficient statistical significance (p-value = 0.5403) to reject the null hypothesis; as a consequence, the estimated probability calculated by the test could not provide any significant indication. In conclusion, data did not support the tested assumption, without allowing to assume the existence of a difference between the two groups.

| <i>Two-sample Wilcoxon rank-sum Wilcoxon<br/>(Mann-Whitney) test</i>      |     |               |          |
|---|-----|---------------|----------|
| <b>PLAT_LOC_AREA</b>  | obs | rank sum      | expected |
| 0   | 5   | 45            | 40       |
| 1   | 10  | 75            | 80       |
| combined  | 15  | 120           | 120      |
| unadjusted variance   |     | 66.67         |          |
| adjustment for ties   |     | 0.00          |          |
| adjusted variance   |     | 66.67         |          |
| Ho: PLEDGED_FUNDS(PLAT_LOC_AREA==0) =<br>PLEDGED_FUNDS(PLAT_LOC_AREA==1)  |     |               |          |
| z =   |     | 0.612         |          |
| Prob >  z  = <b>(p-value)</b> =   |     | <b>0.5403</b> |          |
| P{PLEDGED_FUNDS(PLAT_LOC_AREA==0) ><br>PLEDGED_FUNDS(PLAT_LOC_AREA==1)} = |     |               | 0.600    |

Table 4 - Wilcoxon-Mann-Whitney U test for amounts of pledged funds between the two groups of platforms (Author's personal elaboration)

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The next variable to be tested was the NUMBER OF COLLECTED PLEDGES. Precisely, I wanted to control if portal located in Northern Italy collect different quantities of pledges with respect to the ones located in Central and Southern Italy. Consequently, the hypothesis to be tested was:

*H2: Platforms located in the North collect different quantities of pledges than platforms located in the Centre/South.*

With respect to observed results reported in Table 5, North-located platforms seemed to reach a higher NUMBER OF COLLECTED PLEDGES if compared to Centre/South-located ones.

| <i>Summary for variable:</i> |       | N_PLEDGES     |    |
|------------------------------|-------|---------------|----|
| <i>by categories of:</i>     |       | PLAT_LOC_AREA |    |
| PLAT_LOC_AREA                | mean  | sd            | N  |
| 0                            | 125.8 | 172.7388      | 5  |
| 1                            | 339.1 | 518.6432      | 10 |
| Total                        | 268   | 438.4981      | 15 |

Table 5 - Observed values for the average number of collected pledges of the two analyzed groups (Author's personal elaboration)

| <i>Two-sample Wilcoxon rank-sum Wilcoxon<br/>(Mann-Whitney) test</i> |     |               |          |
|--|-----|---------------|----------|
| <b>PLAT_LOC_AREA</b>   | obs | rank sum      | expected |
| 0  | 5   | 34            | 40       |
| 1  | 10  | 86            | 80       |
| combined   | 15  | 120           | 120      |
| unadjusted variance  |     | 66.67         |          |
| adjustment for ties  |     | 0.00          |          |
| adjusted variance  |     | 66.67         |          |
| Ho: N_PLEDGES(PLAT_LOC_AREA==0) =<br>N_PLEDGES(PLAT_LOC_AREA==1)     |     |               |          |
| z =  |     | -0.735        |          |
| Prob >  z  = <b>(p-value)</b> =                                      |     | <b>0.4624</b> |          |
| P{N_PLEDGES(PLAT_LOC_AREA==0) ><br>N_PLEDGES(PLAT_LOC_AREA==1)} =    |     |               | 0.380    |

Table 6 - Wilcoxon-Mann-Whitney U test for quantities of collected pledges between the two groups of platforms (Author's personal elaboration)

Notwithstanding, even in this case the test result suggested to not reject the null hypotheses; actually, the obtained p-value of 0.4624 was not sufficient to accept the alternative one. According to results exposed in Table 6 hence, analyzed data did not support the tested proposition. Again, given the impossibility to assess the existence of a potential difference, the estimated probability for the variable to be higher in the first subsample than in the second one provided no useful insights.

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The last dimension to be tested was SUCCESS RATE. With respect to that variable, I was wondering if portals based in the North have different success rates than the others which are located both in the Centre and in the South. To this purpose, the hypothesis to be tested was:

*H3: Platforms located in the North collect different success rates than platforms located in the Centre/South.*

In this sense, Table 7 highlights the presence of a small difference in the average SUCCESS RATE with respect to the two analyzed subsamples.



| Summary for variable: |          | SUCCESS_RATE  |    |
|-----------------------|----------|---------------|----|
| by categories of:     |          | PLAT_LOC_AREA |    |
| PLAT_LOC_AREA         | mean     | sd            | N  |
| 0                     | .6091787 | .2736748      | 5  |
| 1                     | .5475916 | .3676519      | 10 |
| Total                 | .5681206 | .3304484      | 15 |

Table 7 - Observed values for the average success rate of the two analyzed groups (Author's personal elaboration)

| Two-sample Wilcoxon rank-sum Wilcoxon<br>(Mann-Whitney) test            |     |               |          |
|---|-----|---------------|----------|
| PLAT_LOC_AREA   | obs | rank sum      | expected |
| 0   | 5   | 41.5          | 40       |
| 1   | 10  | 78.5          | 80       |
| combined  | 15  | 120           | 120      |
| unadjusted variance   |     | 66.67         |          |
| adjustment for ties   |     | -0.24         |          |
| adjusted variance   |     | 66.43         |          |
| Ho: SUCCESS_RATE(PLAT_LOC_AREA==0) =<br>SUCCESS_RATE(PLAT_LOC_AREA==1)  |     |               |          |
| z =   |     | 0.184         |          |
| Prob >  z  = (p-value) =  |     | <b>0.8540</b> |          |
| P{SUCCESS_RATE(PLAT_LOC_AREA==0) ><br>SUCCESS_RATE(PLAT_LOC_AREA==1)} = |     |               | 0.530    |

Table 8 - Wilcoxon-Mann-Whitney U test for success rates between the two groups of platforms (Author's personal elaboration)

As happened with the other two variables, results obtained after having performed the test did not suggest rejecting the null hypotheses (p-value = 0.8540); as a consequence, the estimated probability resulting from the test was not significant. In conclusion, examined data did not support the tested assumption about the existence of differences in success ratios between the two subsamples of platforms.

### Obtained findings

After having performed the above-mentioned tests, a clear answer could be devised with respect to the existence of a certain “geographical effect” in the examined context; essentially, there is not enough statistical significance to assess that there exists a difference in performances of platforms which are located in the two analyzed areas of Italy.

Actually, this result could have been expected, overall by considering one of Crowdfunding pillars; namely, its online-based nature. In fact, almost all literatures agree in labelling the coming of Web 2.0 as one of the levers which has brought to the surprising rise Crowdfunding has experienced. Therefore, it is even known that such innovation allowed the birth of Crowdfunding platforms, those powerful tools able to attract and manage investors from all over the world with the sole requisite of having access to the Internet, thus being able to overcome geographical-related obstacles.

Moving from such considerations, it is finally possible to argue that the current Italian ECF Platforms ecosystem does not provide evidences of a significant effect of platforms' location area on their own performances, measured in terms of pledged funds, number of collected pledges and success rate.

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### Cluster Analysis

After the first part of the analysis related to Italian ECF platforms has been carried out, the focus then moved to the targeted objective of verifying if it was possible to group together different platforms with respect to certain selected dimensions. The chosen technique which allowed me to perform the intended research was the multivariate Cluster analysis.

Given that the just mentioned tool brings elements together by reducing distances among them, the first step consisted in identifying which set of measures could have helped in clearly distinguishing platforms each other. As shown by scatter plots displayed in Table 9, I finally ended up with a set of variables which seemed to perform well in doing this task.

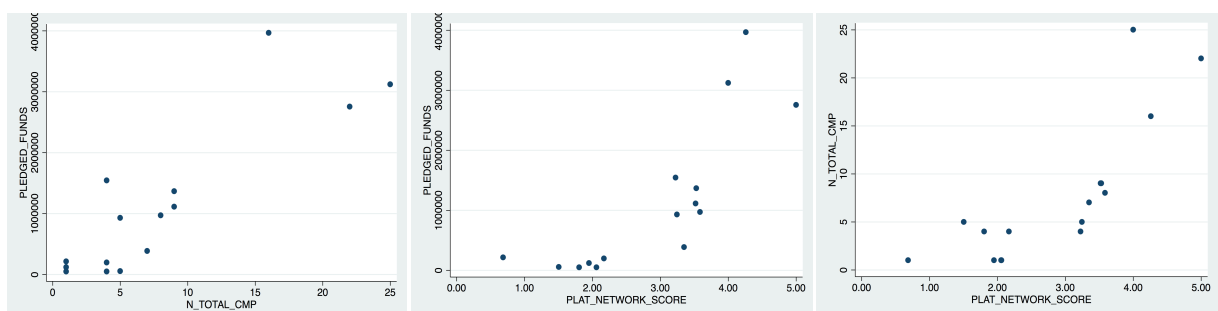


Table 9 - Scatter plots of variables selected for the Cluster analysis (Author's personal elaboration)

In this sense, I decided to choose the NUMBER OF TOTAL CAMPAIGNS, the AMOUNT OF PLEDGED FUNDS and finally the PLATFORM NETWORK SCORE as variables which the tools had to use for developing a certain measure of distance among platforms.

In order to obtain the best possible result and to avoid scale issues, three new variables have been generated and thus given the standardized values of the above-mentioned ones. After doing so, a hierarchical clustering algorithm have been chosen, aiming at obtaining a first graphic insight about the measures of observable distances with respect to selected variables. Such feedback has thus been given by a specific chart, named dendrogram, obtained after the implementation of the algorithm by the analysis software.

Focusing on the chart displayed in Table 10, it is useful to know that numbers on the lower side represent the 15 examined platforms, while the vertical segments indicate the distances between the grouped items.

As a consequence, it is possible to observe that all the clustering process' steps are clearly represented, and that the graph seems strongly suggesting that three main groups could be outlined with respect to the examined entries.

Another useful indication could be obtained by applying Calinski/Harabasz stopping rule, which consists in a sub-algorithm that analyzes a performed hierarchical Cluster analysis and then provides a sort of goodness measure with respect to different numbers of groups to be generated.

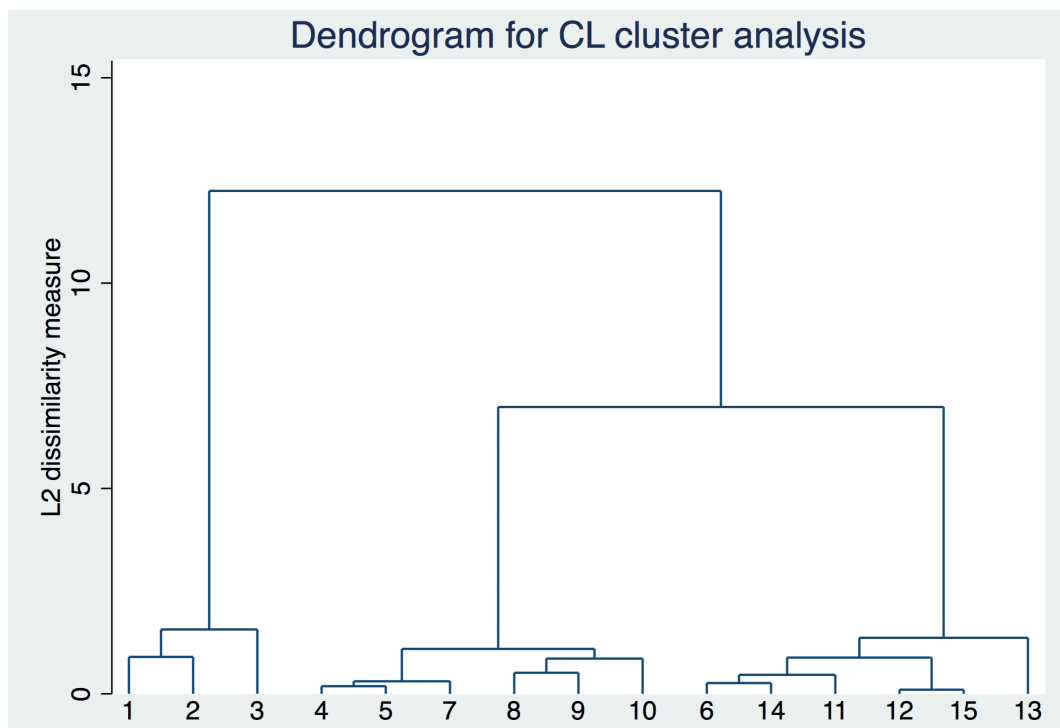


Table 10 - Cluster Analysis dendrogram (Author's personal elaboration)

As it is highlighted by Table 11, even this feedback agreed on the fact that the best choice consisted in generating three different groups.

| <i>Calinski/Harabasz Stopping Rule</i> |                            |
|--|----------------------------|
| Number of clusters                     | Calinski/Harabasz pseudo-F |
| 2                                      | 31.34                      |
| 3                                      | 56.37                      |
| 4                                      | 51.78                      |
| 5                                      | 51.00                      |
| 6                                      | 47.82                      |

*Table 11 - Calinski/Harabasz stopping rule results (Author's personal elaboration)*

At this point, the software has been asked to generate 3 different groups and to populate them by grouping platforms in such a way to reduce at best the distances among them in terms of previously-selected variables. Moreover, a new variable named CLUSTER has been created in order to be entered by the algorithm with the number of the cluster to which each item has been assigned.

A first representation of groups obtained by the whole procedure are exposed in Table 12, which basically reports mean, standard deviation and number of items for each cluster and for the total sample.

| <i>Summary for variables: PLEDGED_FUNDS, N_TOTAL_CMP, PLAT_NETWORK_SCORE</i> |      |               |             |                    |
|--|------|---------------|-------------|--------------------|
| <i>by categories of: CLUSTER</i>   |      |               |             |                    |
| CLUSTER  |      | PLEDGED_FUNDS | N_TOTAL_CMP | PLAT_NETWORK_SCORE |
| 1  | mean | 3278576       | 21          | 4.421412           |
|  | sd   | 622808.1      | 4.582576    | .517639            |
|  | N    | 3             | 3           | 3                  |
| 2  | mean | 1049070       | 7           | 3.411821           |
|  | sd   | 402637.3      | 2.097618    | .1563499           |
|  | N    | 6             | 6           | 6                  |
| 3  | mean | 112449.2      | 2.666667    | 1.695602           |
|  | sd   | 75735.52      | 1.861899    | .5469644           |
|  | N    | 6             | 6           | 6                  |
| Total  | mean | 1120323       | 8.066667    | 2.927251           |
|  | sd   | 1245407       | 7.391759    | 1.176014           |
|  | N    | 15            | 15          | 15                 |

*Table 12 - Summary statistics from obtained clusters (Author's personal elaboration)*

As it is possible to observe, the variability recorded for each variable in the original sample (see second row of values for each cluster) consistently drops when calculated inside each group. Moreover, it is also possible to know which is the size of generated clusters and what are the average values for every single variable used to perform the clustering.

In addition to what displayed by Table 12, another perspective could be adopted to deepen the produced output; on this regard, Table 13 provides a graphic representation of the values assumed by the three clustering variables with respect to their group of belonging.

From this point of view, it appears clear that on one hand the three generated clusters significantly range in different areas of the graph with respect to each other; while, on the other hand, every group is formed by observations that significantly show to behave in a similar fashion.

Essentially, by computing the required calculations with respect to selected measures of distance, the implemented technique provided a useful feedback to the intended objective.

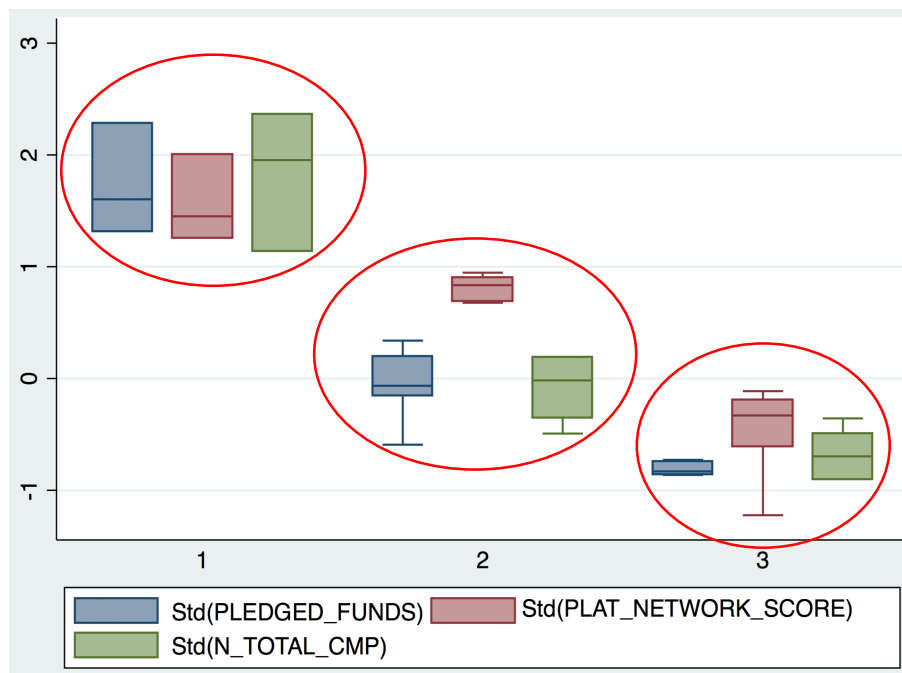


Table 13 - Box Plot of variables by obtained clusters (Author's personal elaboration)

In order to conclude the Cluster analysis assessment, it is then the moment to verify in concrete terms which are the features that characterize each cluster, and moreover which items have been either divided or grouped together by the algorithm; in this sense, by looking at Table 14 it is finally possible to know which are the platforms that occupy each group.

| <i>Cluster 1 - Composition</i> |             |                |               |                    |         |
|--------------------------------|-------------|----------------|---------------|--------------------|---------|
|                                | PLAT        | PLEGGED_ FUNDS | N_ TOTAL _CMP | PLAT_NETWORK_SCORE | CLUSTER |
| 1                              | STARSUP     | 3117033        | 25            | 4.00               | 1       |
| 2                              | CROWDFUNDME | 2752455        | 22            | 5.00               | 1       |
| 3                              | MAMACROWD   | 3966239        | 16            | 4.26               | 1       |
| Mean                           |             | 3278575.7      | 21            | 4.42               |         |

| <i>Cluster 2 - Composition</i> |                |                |               |                    |         |
|--------------------------------|----------------|----------------|---------------|--------------------|---------|
|                                | PLAT           | PLEGGED_ FUNDS | N_ TOTAL _CMP | PLAT_NETWORK_SCORE | CLUSTER |
| 1                              | NEXT EQUITY    | 1542462.9      | 4             | 3.23               | 2       |
| 2                              | OPSTART        | 1111650        | 9             | 3.52               | 2       |
| 3                              | EQUINVEST      | 1362336        | 9             | 3.53               | 2       |
| 4                              | ASSITECA CROWD | 928124         | 5             | 3.25               | 2       |
| 5                              | WEARESTARTING  | 382950         | 7             | 3.35               | 2       |
| 6                              | TIP.VENTURES   | 966900         | 8             | 3.59               | 2       |
| Mean                           |                | 1049070.5      | 7             | 3.41               |         |

| <i>Cluster 3 - Composition</i> |               |                |               |                    |         |
|--------------------------------|---------------|----------------|---------------|--------------------|---------|
|                                | PLAT          | PLEGGED_ FUNDS | N_ TOTAL _CMP | PLAT_NETWORK_SCORE | CLUSTER |
| 1                              | INVESTI-RE    | 116829         | 1             | 1.95               | 3       |
| 2                              | SMARTHUB      | 45900          | 1             | 2.06               | 3       |
| 3                              | COFYF         | 213750         | 1             | 0.68               | 3       |
| 4                              | MUUM LAB      | 50000          | 4             | 1.80               | 3       |
| 5                              | UNICASEED     | 194100         | 4             | 2.17               | 3       |
| 6                              | EQUITYSTARTUP | 54116          | 5             | 1.50               | 3       |
| Mean                           |               | 112449.17      | 2.6666667     | 1.70               |         |

*Table 14 - Clusterization of the Italian ECF platforms ecosystem (Author's personal elaboration)*

With respect to the outcomes reported in the table, a first consideration could be immediately done by assessing the means that each group recorded with respect to every examined dimension; basically, both in terms of pledged funds, numbers of hosted campaigns and network scores, the three groups assumed relevantly different values, thus suggesting the potential existence of a certain rank among them.

For the sake of completeness, the focus has then moved to the three single variables.

In terms of PLEDGED FUNDS for instance, it is clear how the average value for the first cluster is almost three times the second one, which in turn recorded an amount more than nine-times higher if compared to the third one. The NUMBER OF HOSTED CAMPAIGNS behaved in a similar fashion, recording an average of 21 for the first cluster, moving then to 7 in the second one and not even 3 in the last. With respect to the NETWORK SCORE, a congruent pattern could be denoted; the first cluster indeed scored a 1/3 higher average than the seconds' one, which in turn more than doubled the score obtained by the last group.

### **Obtained findings**

All things considered, the analysis provided a self-evident indication about the existence of three distinct clusters with respect to Italian Equity Crowdfunding platforms. In details, the first cluster hosts the most successful and attractive platforms, which seem to operate at higher levels if compared to the others; as for the second hence, it is composed by portals that have not yet reached such rates of activity but anyway showed positive values both in terms of network score and number of hosted campaigns. Actually, looking at the whole charts displayed in the descriptive section, it is blatant how Starsup, Mamacrowd and Crowdfundme currently form the top-performers group of Italian ECF platforms.

For what concerns the third cluster hence, it contains platforms that had not achieved sufficient standards which seem to be necessary in order to succeed in Equity Crowdfunding in Italy, either because of the closing of two of them or due to scarce performances recorded until the moment of the analysis. In conclusion, with respect to platforms of the third cluster that are still active player for the Italian ECF market, a crucial improvement in terms of NETWORK SCORE seems to be necessary; indeed, it seems really struggling to pursue positive bottom lines in this specific industry without having met sufficient standards for what concerns communication and online presence.

### 3.3 ECF CAMPAIGNS-RELATED FINDINGS

After having assessed trends and insights from the Italian ECF Platforms ecosystem, the whole recorded campaigns have been examined, in order to develop a comprehensive framework of analysis for the Equity Crowdfunding phenomenon in the Italian market. Accordingly, the following section aims at exposing the obtained results with respect to the Campaigns Database examination. Even for what concerns this area, both descriptive assessments and statistical analyses will be presented.

#### 3.3.1 DESCRIPTIVE ANALYSIS

The following part of the dissertation will expose the descriptive findings related to Italian Equity Crowdfunding campaigns. Specifically, volumes, sectors involved, proponent ventures' distribution and strategies, investors' voting rights and proponent teams' composition will be discussed.

#### Volumes

The first part of the research was addressed in evaluating the volumes of Italian Equity Crowdfunding; precisely, I wanted to verify if increasing attention reserved to the subject in the everyday economic chronicle was effectively linked to appreciable levels of the phenomenon.

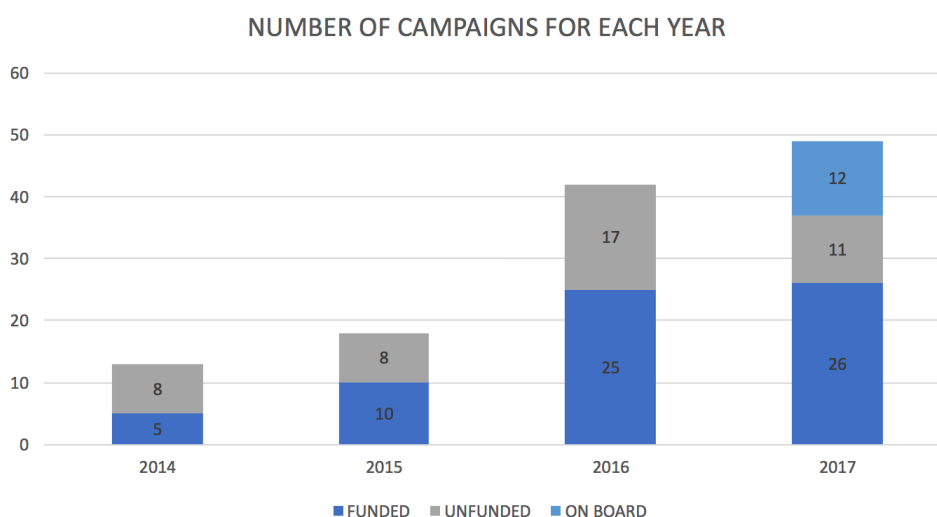


Figure 21 - Number of campaigns hosted for each year (Author's personal elaboration)

As Figure 21 shows, it is evident how the yearly activity in ECF has constantly increased since 2014, which was the first year in which campaigns applications started to be submitted.



Furthermore, a huge increase is reported between 2015 and 2016, with this last which more than doubled hosted campaigns of the previous year, probably because of the positive impact that the new version of CONSOB regulation has had on the ECF industry.

When observing the chart, it is fundamental to remind that data for 2017 is partial, given that the gathering ended in September 13; consequently, it is also possible to observe that 2017 includes even on board-campaigns. Although the limited covering of last year results, there is a clear trend which sees 2017 as having already overcome previous year's number of campaigns hosted, even with more than a trimester of activity still missing.

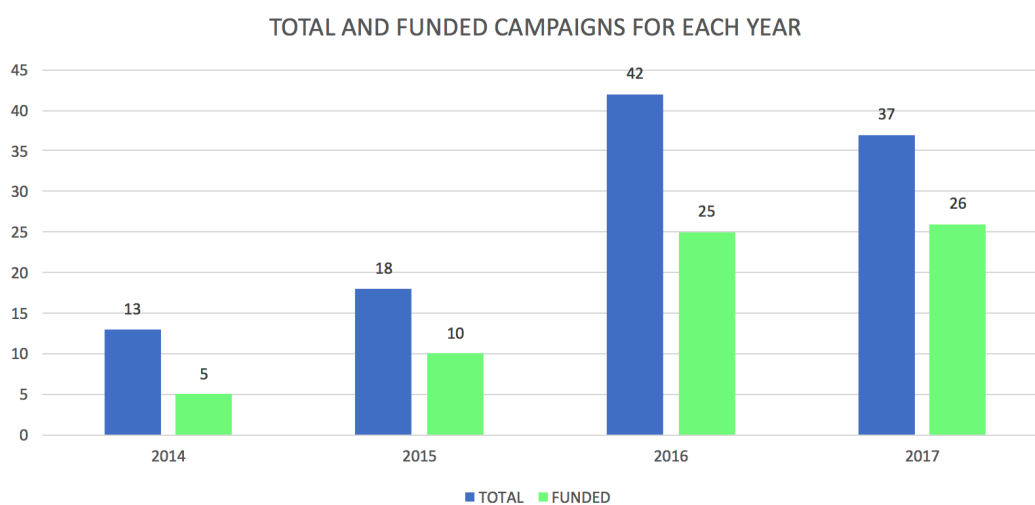


Figure 22 - Total and successful hosted campaigns for each year (Author's personal elaboration)

Another perspective which has been adopted concerns the rate of success in ECF activities recorded by each year. Figure 22 hence makes a clear representation of how Equity Crowdfunding has been always more successful in Italy, year after year.

Even if the total amount of campaigns is relevantly different if compared to leading Countries in this industry, it is observable how both Italian platforms and proponent ventures have learned how to manage this powerful tool over time, moving from a 38% of success rate in 2014 to quite a 60% in 2016. As for 2017, it will probably overtake 2016 thanks to a still greater number of successes with 12 on board campaigns and other new ones coming.

Probably, this increased success is based even on the improved selection that platforms perform on received applications; on the topic, is thus important to remind that not all proposed projects are hosted by ECF platforms. Indeed, one of the main function executed by portals consists in evaluating submitted campaigns in order to grant the best possible quality of investments proposed to their customers, namely the crowd.

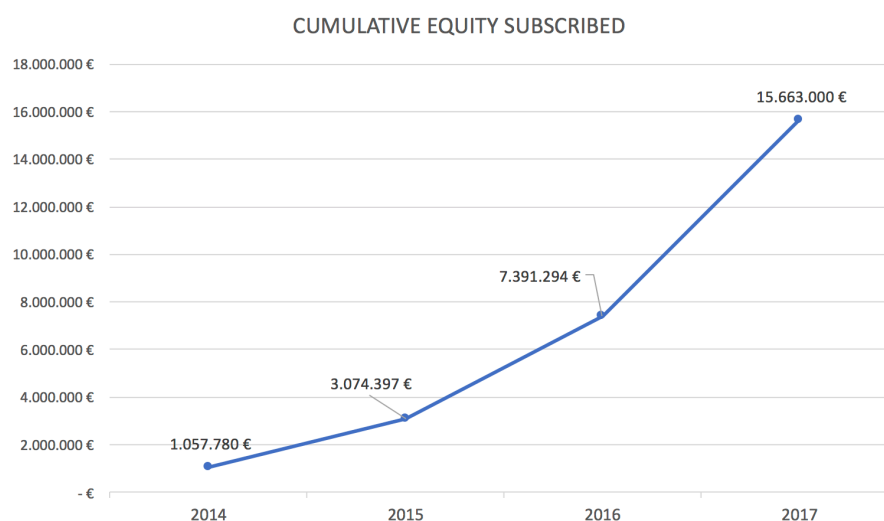


Figure 23 - Cumulative amount of equity subscribed (Author's personal elaboration)

Additional in-line insights about the momentum ECF is experiencing in Italy are provided by the equity subscribed volumes for each year. As Figure 23 shows, it is easy to denote how the amount of collected funds has at least doubled year after year, with 2017 that in mid-September has already equalized the whole amount subscribed during the previous three years, thus reaching a total subscribed equity of quite €15.7 million.

### **Geographical distribution of proponent companies**

With respect to the 119 proponent companies that set up the 122 campaigns recorded in the Database, they fall into four categories, with the Innovative Startup one which is clearly the most represented, given that it has been the only business organizational form the Italian legislator allowed to exploit Equity Crowdfunding for the most of its existing time. For the sake of completeness, the sampled ventures are 108 Innovative Startups (more than 90%), 8 Innovative SMEs, 2 Investment Vehicles and 1 SME.

A suitable approach for the purposes of the study was the geographical one; precisely, I analysed the region of provenance of the whole companies which have presented an ECF campaign, and the funding respectively raised. In accordance to Figure 24, it is possible to observe that the North is undoubtedly the most active region with 73 campaigns hosted, then the Centre, which follows with 28, and finally South and islands with 21; as seen in the Platforms analysis, noteworthy is the case of Lombardia, which is the provenance region of 49 campaigns.

Considering the amount of equity subscribed on a regional basis hence, it is expectable that most active regions are the ones which recorded the highest values; however, such pattern seems not to be followed. Accordingly, apart from the case of Lombardia, following regions in

the equity subscribed leaderboard are not the ones which hosted the highest number of campaigns; in fact, the second and the third region, namely Marche and Trentino Alto Adige, are characterized by a lower number of hosted campaigns than several other regions.

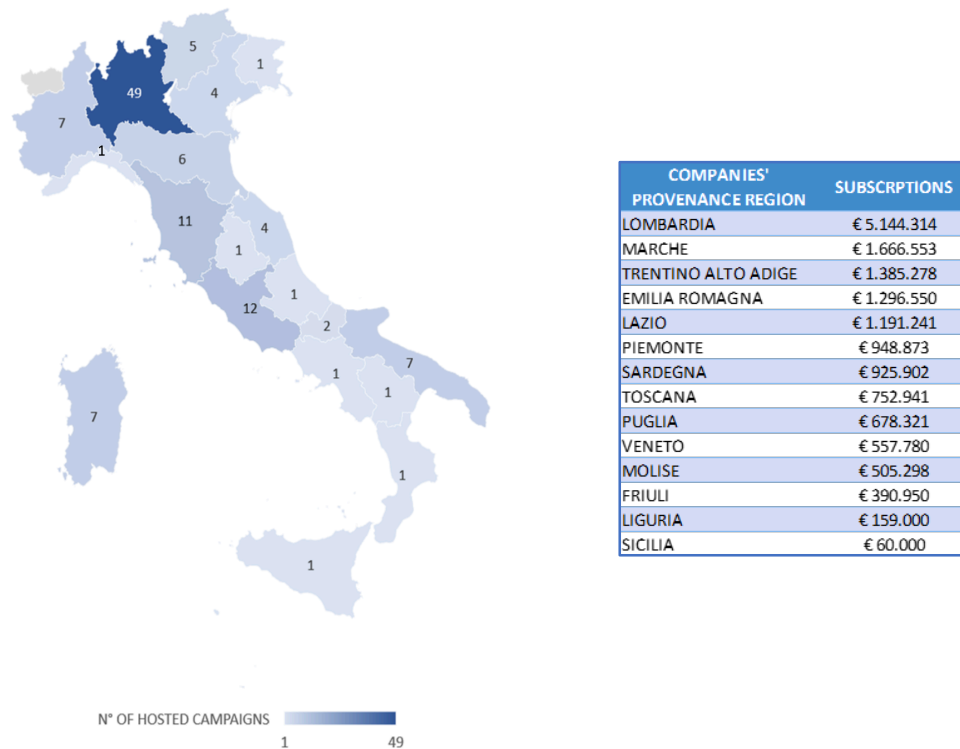


Figure 24 - Number of hosted campaigns and amount of equity subscribed by companies' provenance region (Author's personal elaboration)

## Sectors involved

Additional insights about Italian ECF campaigns have been obtained by considering the sectors to which crowdfunded projects belong.

As Figure 25 shows, ICT, Social/Sharing Services and Professional Services are the three most active sectors in Italian Equity Crowdfunding; on the other side, newest applications of ECF are represented by Real Estate, Equity CF Platforms and Investment Vehicles, that actually have a small number of hosted campaigns but are expected to increase their activities soon.

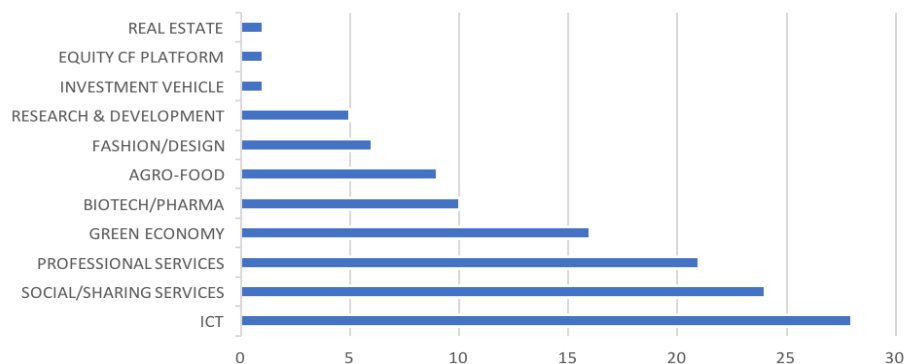


Figure 25 - Number of hosted campaigns by sector (Author's personal elaboration)

Similarly to geographical distribution, even in the sectorial one the number of hosted campaigns is not totally reflected by collected pledges. Indeed, by looking at Figure 26, it is easy to identify how Green Economy, although being the fourth sector for number of hosted campaigns, covers a prominent role in almost all years, followed as expected by ICT and the two categories of services. On a year basis, it is possible to observe how ECF involved always more sectors along its development.

In order to assess the attractiveness that each sector has towards investors, the amount of collected pledges have been considered instead of the one of the effective subscriptions, thus meaning that the amount includes even the small part of pledges which have been collected but did not turn in a real funding because the minimum amount has not been reached.

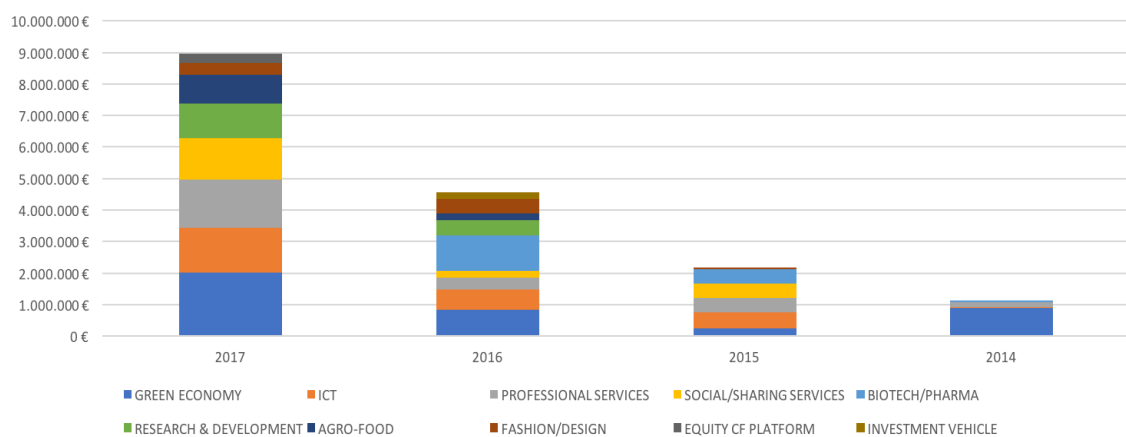


Figure 26 - Amount of funding pledged by sector (Author's personal elaboration)

As anticipated, the trend observed with the collected pledges is precisely mirrored by the total equity subscribed, which sees Green Economy as the most funded sector in Italian ECF since its birth, followed by ICT and Professional Services, with these 3 sectors covering about the 55% of the total subscriptions volume (see Figure 27).

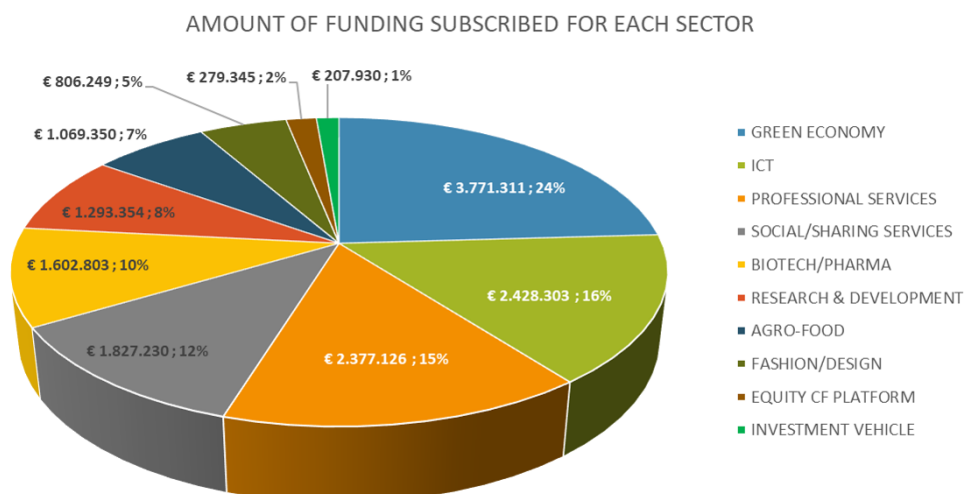


Figure 27 - Amount of funding subscribed by sector (Author's personal elaboration)

## Campaigns results

With respect to what happened until September 2017 in Italian ECF market, from a total of 122 hosted deals, 66 campaigns (60%) have been successfully funded, while 44 (40%) did not reach the minimum amount and other 12 were still on-board. Figure 28 hence lists all the 66 successful deals, ordered by amount of equity subscribed. The first two campaigns, namely Green Energy Storage and Synbiotec, were able to even double the amount collected by the third campaign, thus representing the two best performers.

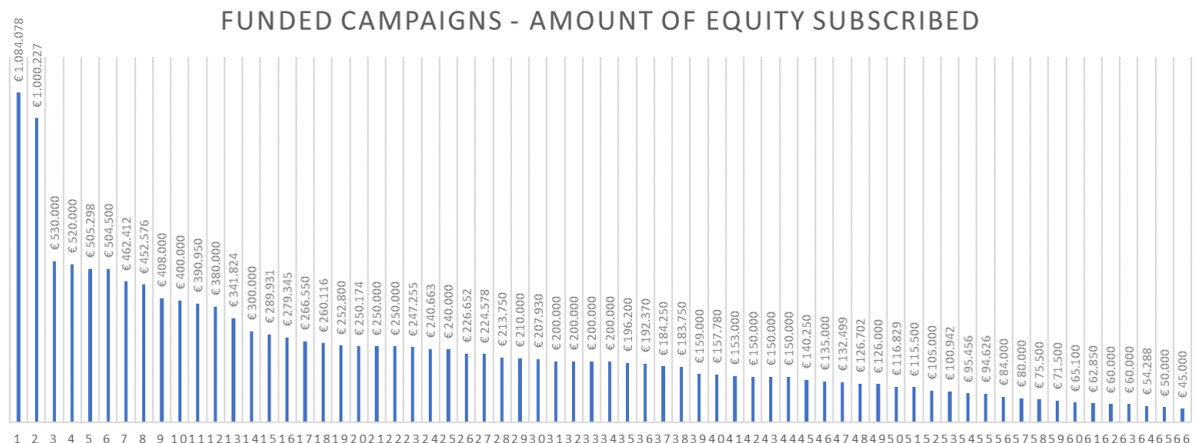


Figure 28 - Funded campaigns ordered by amount of equity subscribed (Author's personal elaboration)

According to what stated before, it is worth to mention that 2 of the top 6 (over € 500k) funded campaigns belong to the Green Economy industry, while other most funded projects encompass Biotech/Pharma, R&D, ICT and Professional Services industries. The average subscription resulted to be of almost € 237k, the median amount was € 200k, while about 21% of campaigns obtained funding for less than € 100k. From a temporal perspective hence, it is blatant how funded campaigns are more concentrated in recent periods, thus maintaining a quite delineated range of average funding which surrounds € 200k, making an obvious exception with respect to outliers (see Figure 29). All things stated, even if ECF is still in its developing phase, a certain indication about the average funding power of this instrument could be devised.

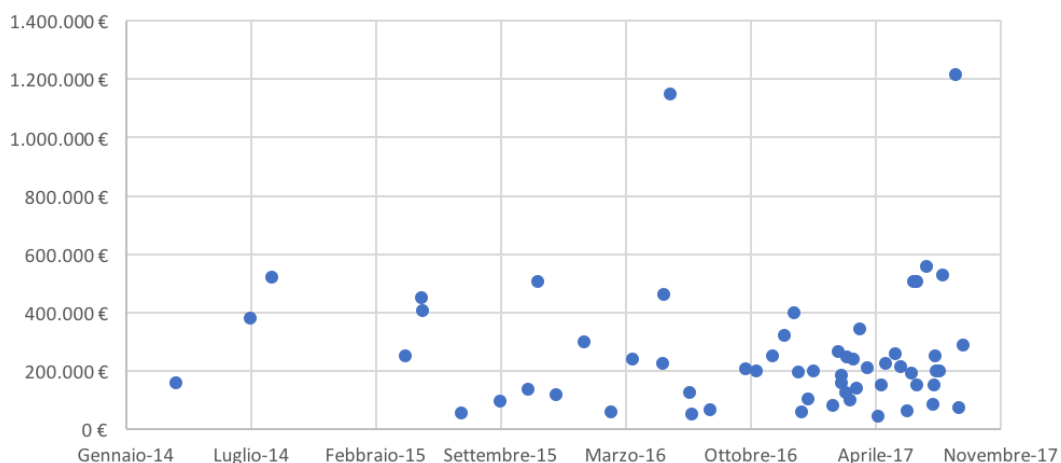


Figure 29- Funded campaigns ordered by ending date of campaigns (Author's personal elaboration)

## Main characteristics of proponent companies

Focusing on general features of sampled companies, data demonstrated that the average age of ventures when starting an ECF campaign is about 2.2 years; even if it confirms that ECF is mainly chosen by young businesses, the data is probably influenced by the fact that the biggest part of the sample is formed by Innovative Startups, due to legislative provisions which have been in force until a few months ago. Another particular insight regards the average number of shareholders at the moment of starting an Equity Crowdfunding campaign, which revealed to be 11. Finally, just the 40% of companies approached ECF with Financial Statements reporting a last-year profit, thus highlighting how ECF usually provides funds to companies which strive to be satisfied by traditional sources of risk capital.

With respect to ECF business target, a peculiar feedback is the one reported in Figure 30, which shows on a year basis the trends followed by the average pre-money valuation and by the average pre-offer capitalization of proponent companies. More in detail, it is possible to observe that, apart from 2014, businesses which have chosen ECF in Italy had different features year after year, often taking opposite directions with respect to the previous one. In other words, while in 2015 ventures which have chosen ECF for their projects were not so much capitalized (about € 50k) but had a high average pre-money valuation (average stands around € 5 million), next-year proponent businesses became much more capitalized (average is around € 200k) but with quite lower pre-money valuations (with an average around € 1.5 million). As for 2017, the trend seems to be inverted again, as if to say that Equity Crowdfunding has not yet found its perfect positioning in the Italian business environment.

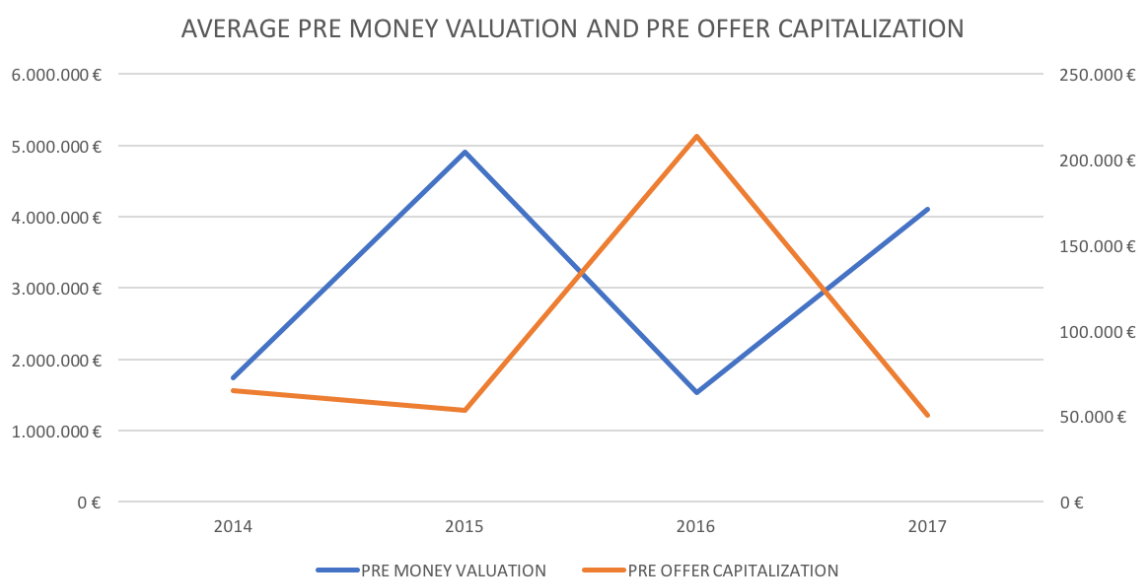


Figure 30 - Average Pre-Money valuation and Pre-Offer capitalization of companies (Author's personal elaboration)

## Proponent ventures' strategies

Focusing on values that proponent ventures set in terms of minimum, maximum and target amounts of funding offered, it is possible to assess the existence of certain common strategies, which tend to be followed by companies when establishing campaigns' financial thresholds.

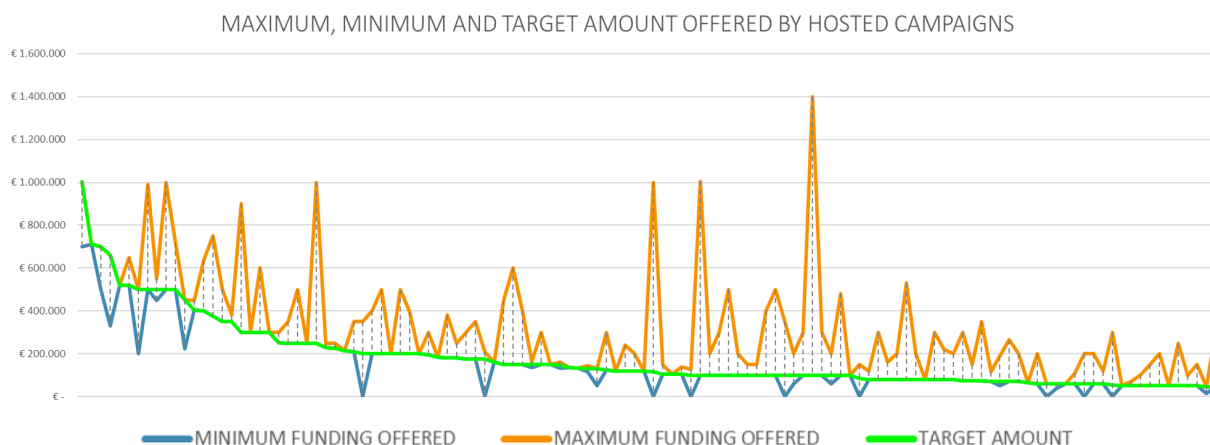


Figure 31 - Maximum, minimum and target amount offered by hosted campaigns (Author's personal elaboration)

Figure 31 reports the three above-mentioned measures ordering observations by target amount required, thus displaying in the left side data from campaigns with the highest targets. What is clearly observable is that companies tend to set minimum required amounts which are very close, often the same, of target amounts; this is probably due to the fact that without obtaining funding that are all or almost the minimum capital requested, companies loose interest in pursuing the capital injection, given that without raising such amount, the planned operation (often linked to an MVP<sup>83</sup> development) could not be implemented. As a confirmation, it is possible to consider that projects with highest targets are the same which have the highest minimum amounts of funding offered. Peculiar cases are finally the ones with no minimum amount set, which indicate that every kind of funding is beneficial for that ventures, probably depending on the fact that they are still in their very seed stage.

On the other side though, it seems clear how ventures usually set a maximum amount which is far greater than the target; this circumstance could hence depend on the fact that they want to leave rooms for an overwhelming result, but without compromising the achievement of the funding. In fact, campaigns with the highest range between the two boundaries are the ones characterized by highest maximum values. In this respect, a particular consideration must

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<sup>83</sup> The acronym stands for "Minimum Viable Product", which in terms of innovative product development represents the minimum unit of functioning product.

be done for the highest maximum amounts, which have been set both by ventures with very large targets and from ventures with average ones, thus without demonstrating a possible relation behind this choice.

After the analysis of trends followed by funding boundaries and targets, it could be challenging to observe the combined distribution of targets and subscriptions. With this purpose, Figure 32 displays target amount and equity subscribed for each one of the 66 funded ECF campaigns, ordering them for funding ratio (equity subscribed / target) and thus hosting in the left side campaigns with best performances in such terms. With respect to the right scale, which goes from 0% to 1000%, it is possible to observe that 46 campaigns overcome the 100% ratio, thus becoming overfunded.

Furthermore, subscriptions appear to be more attracted from campaigns with averaged targets than from ones with higher targets; actually, the majority of left-sided ventures in the chart have set targets under € 100k, while moving towards the right side, with the funding ratio dropping, targets tend to rise in several observations. Altogether, average funding ratio has been calculated in 177.48%; when referring to unfunded campaigns hence, the percentage of collected pledges over the target required turned out to be 9.06% with just the 11% of them supported by the presence of a professional investor.

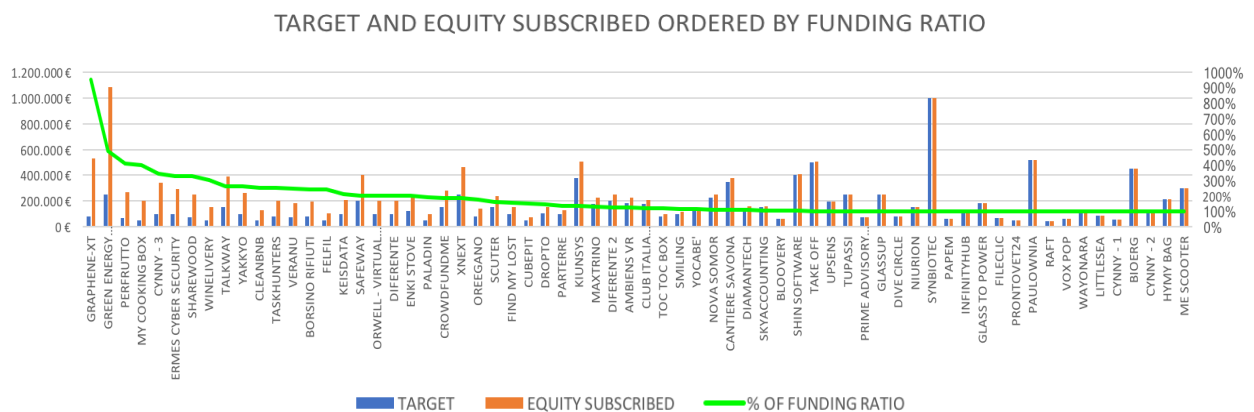


Figure 32 - Target and equity subscribed for each funded campaign by funding ratio (Author's personal elaboration)

Moving the focus on how campaigns' thresholds have changed since ECF started to exist in Italy, distinctive insights are provided by the examination of targets, equity stakes offered and minimum allowed pledges.

With respect to campaigns' average target, it is consistently decreasing since 2015 (see Figure 33); this circumstance could be linked to the fact that platforms have increased their know-hows about market preferences, thus suggesting proponent ventures to set lower target and maybe to increase the upper limit of the funding, as saw a few paragraphs above.



Additionally, it could be even the consequence of a change in motivations for which companies choose Equity Crowdfunding; being the decrease in average target, the synonym that ventures started to use ECF even for small amounts because of its encouraging records.

Anyway, this drop in the average target could be deemed as one of the reasons behind the exponential increase of success rates which Italian ECF deals have experienced during the last couple of years.

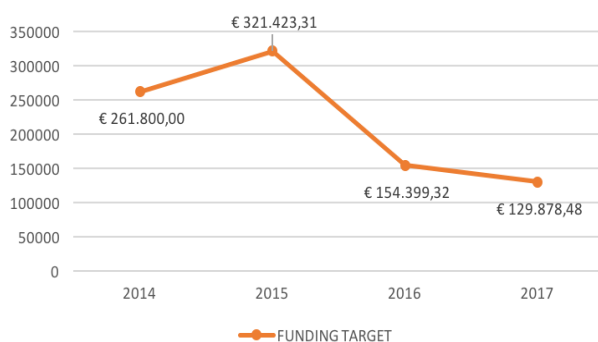


Figure 33 - Average target trend (Author's personal elaboration)

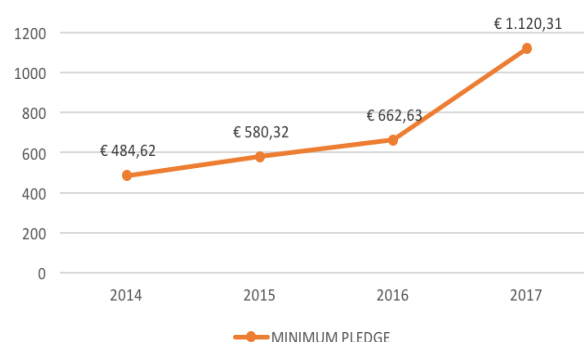


Figure 34 - Minimum accepted pledge trend (Author's personal elaboration)

An opposite consideration, with different implications, could be done for the average minimum pledge accepted, which is another key element for proponent ventures' strategy.

Actually, this value has constantly increased since 2014, arriving in 2017 at almost doubling its 2016 equivalent (see Figure 34). Although there might be several motives behind such pattern, what is sure is that companies are increasing the average level of financial commitment required to their investors, maybe driven by recent enhancement of fiscal benefits which the regulator has implemented towards investment in innovative ventures. Moving from such consideration, I decided to examine if the minimum accepted pledge could have impacted on the amount of pledges that campaigns have received.

In order to display results in the most effective way, I have chosen to remove 4 ventures (the ones with minimum pledges over € 2k) from the 98 ones which collected at least one pledge; in doing so, the chart shows a reduced scale thus becoming easily interpretable.

As it is possible to observe, Figure 35 clearly shows that pledgers have not being driven by the minimum amount of pledge when deciding how and where to invest; indeed, the two highest observations in terms of number of pledges are related to minimum pledges which are far larger than the lowest ones, thus suggesting that investors are likely to be influenced by campaigns' features other than the minimum pledge. Globally speaking, the 66 successfully funded campaigns recorded an average of quite 56 investors for each deal, while the average pledge calculated turned out to be € 8,704.

MINIMUM ACCEPTED PLEDGE AND NUMBER OF PLEDGERS

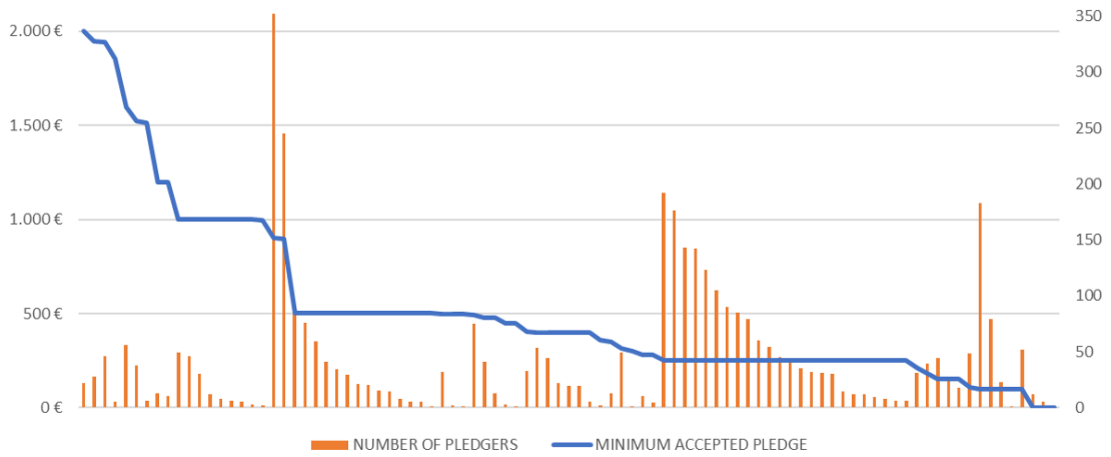


Figure 35 - Minimum accepted pledge and number of pledgers (Author's personal elaboration)

### Voting rights

One of the fundamental aspects which makes Equity Crowdfunding a peculiar tool consists in giving the investors a real ownership stake in exchange for their funds, thus making them proper shareholders of the company. What is crucial to observe is whether or not the transferred securities involve voting rights, and how proponent ventures have acted in this respect during the four-years period of Equity Crowdfunding in Italy.

On this matter, Figure 36 shows that different kinds of shares have been issued by companies looking for funding through ECF. Specifically speaking, there have been campaigns which offered no voting rights at all, others which offered voting power to the whole investors, and finally campaigns which offered the possibility to vote just to investors who have made a subscription higher than a specified amount, thus originating what the chart labels as hybrid shares deals.

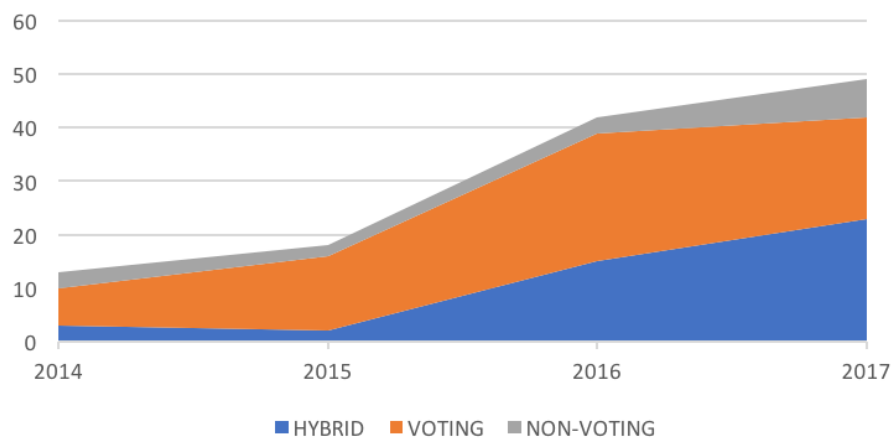


Figure 36 - Distribution of campaigns by type of shares offered (Author's personal elaboration)

In accordance with the graph, it is quite evident that the most campaigns have always involved voting rights since the starting year, either for the whole investors or for a selected part of them. What is important to underline though, is the change in the composition of the voting area with respect to the hybrid one; indeed, it is possible to observe that deals which offered the voting power just to selected investors have increasingly rose, while campaigns with just voting shares issued seems slightly diminishing. On the topic, it is likeable to assume that companies are becoming always more cautious in selecting investors to whom grant the possibility of becoming active part in the business' activities; assumption that seems to be supported even from the fact that deals with non-voting shares offered have proportionately increased too.

Another aspect that could be effectively analyzed alongside the one of voting rights consists in the trend conducted by ownership stakes which companies have offered to investors when subscribing equity in ECF deals.

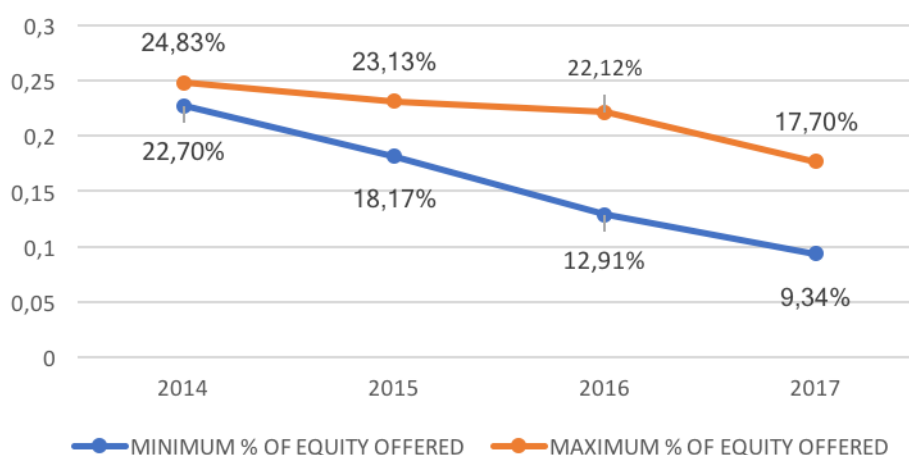


Figure 37 - Average minimum and maximum % of equity offered trends (Author's personal elaboration)

Figure 37 shows that both the average minimum and maximum percentages of equity stake offered by proponent ventures have progressively fallen during the analyzed period. Additionally, it is noteworthy that the range between minimum and maximum average values have increased, thus indicating that the lower value has decreased in a more consistent fashion with respect to the upper one. A possible interpretation of this drop, on the same line of what assessed a few lines above, could imply the fact that businesses are more and more confident about their intrinsic value, thus becoming more reluctant in diluting relevant stakes of their ownerships. However, it could have been a sort of settling-period for proponent ventures, in which they have acknowledged ECF functioning and then properly calibrated stakes to be offered. After almost four years of Equity Crowdfunding campaigns in Italy, the average stake effectively sold currently amounts at about 18%.

## Proponent teams' composition

The last area of analysis addressed from a descriptive perspective regarded the composition of campaigns' proponent teams. The first dynamic I wanted to deepen was related to the age of the 572 members that composed the teams of recorded projects. To be honest, being ECF a funding means which has been available to the sole startups for the most of its existence, I expected proponent teams as being formed by a majority of under-40 components. Conversely to what I estimated, Figure 38 highlights an extremely small presence of 18-23 members, always under 5%; additionally, under-40 ones represented in their best year quite 60% of groups components, while in 2017 their presence has been reduced to almost 50%. What is clear instead, is that members between 30 and 50 years have always formed the biggest fraction of the groups, although the last two years seem to be more heterogeneous than the previous ones. One last consideration could regard the almost 20% of over-50 components recorded in 2017; moving from the data collected after having performed more than 570 CVs screening, this age class often seemed to host wiser contributors, a highly valuable asset on which proponent teams relies on, such as experienced advisors, professors, consultants and mentors.

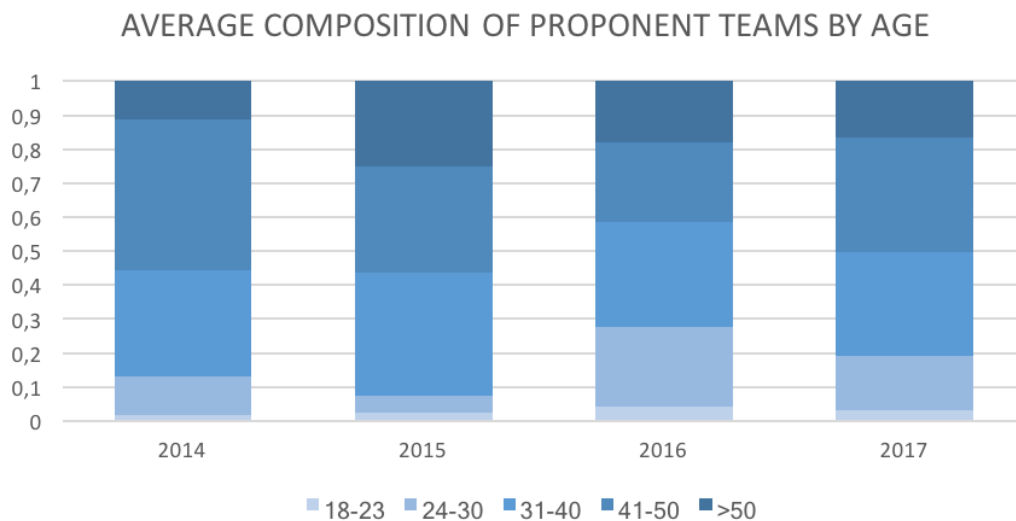


Figure 38 - Average composition of proponent teams by age classes (Author's personal elaboration)

After the analysis of members' age, the focus moved to their personal backgrounds. The first dimension to be analyzed was the educational background, leading to results showed in Figure 39. The main evidence regards the two most frequent categories, namely high school and master degree members, who cover more than 65% of the recorded individuals. As for the quite 10% of proponents recorded as having a PhD, they usually belong to teams which propose projects that involves scientific fields such as R&D, Biotech and Biopharma.

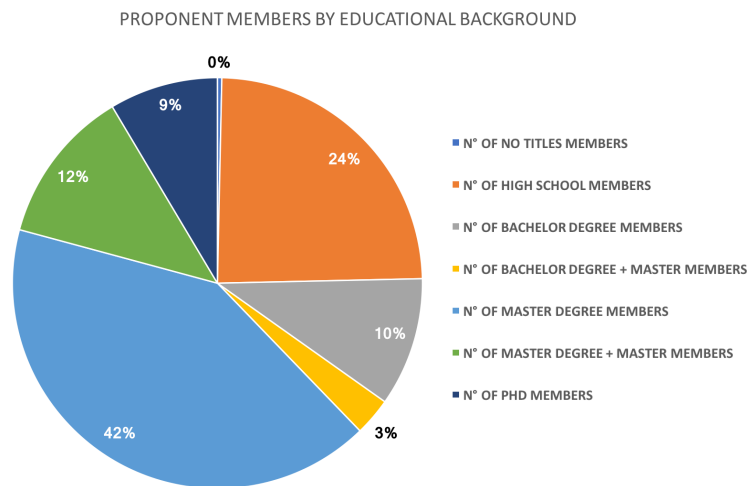


Figure 39 - Proponent members by educational background (Author's personal elaboration)

In conclusion, aiming at completing the screening of proponent teams of Italian ECF deals, the evaluation of professional and entrepreneurial backgrounds has been performed. While the first one was measured by enquiring whether individuals had previous experience in the project sector, the second has been proxied by looking for the existence of members' previous entrepreneurial experiences.

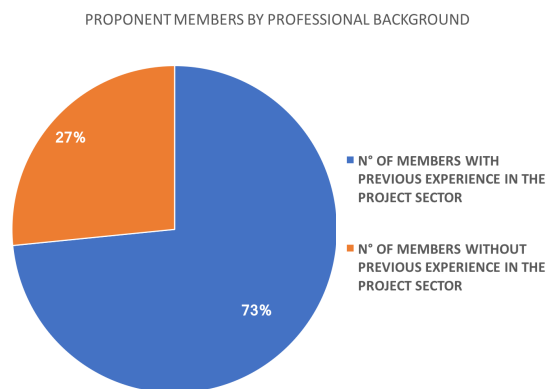


Figure 40 - Proponent members by professional background (Author's personal elaboration)

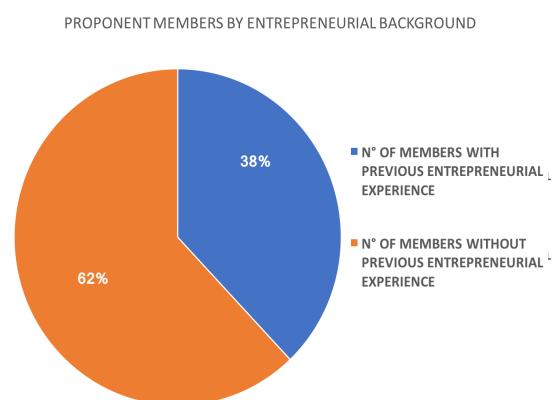


Figure 41 - Proponent members by entrepreneurial background (Author's personal elaboration)

A particular insight could be observed by comparing results exposed in Figures 40 and 41; precisely, while the first graph states that quite 75% of members are part of a team that is proposing a project in which they have a sort of know-how, the second chart clearly shows that the 62% of proponents have not had previous entrepreneurial experiences before the starting of the campaign. This fact could be read in several ways but, the most plausible seems to be that groups tend to be composed by members who could provide the ventures with competitive advantage by covering different functions, and not only by entrepreneurs.

### 3.3.2 STATISTICAL ANALYSIS

The statistical analysis of data performed with respect to Campaigns Database has been conceived with two main objectives: assessing the impact of several dimensions with respect to the amount of pledges collected, and therefore analyzing the differences in the average value of certain variables when comparing funded campaigns versus unsuccessful ones, or rather when comparing overfunded deals with not-overfunded ones.

Even in this case, a necessary disclaimer must be made before introducing performed examinations: in order to assess investors' choices and consequently the significance of campaigns' characteristics, I decided to use the amount of pledged funds instead of subscribed ones as analyzed variable; although it did not consist in a huge difference (total collected pledges are 7% higher than subscriptions), in so doing all the adhesions performed by the crowd have been considered.

Variables used in performing all the analyses are reported in Table 15.

| VARIABLE NAME      | DESCRIPTION  |
|--------------------|--|
| PLEGGED_F          | Total amount of funds pledged.   |
| FUNDING_RATE       | Percentage of funding obtained by the campaign with respect to the declared funding target.  |
| N_PLEDGERS         | Number of investors who have made a pledge for the campaign.   |
| N_PATENTS          | Number of patents the company owns at the moment of starting the campaign.   |
| PRE_OFFER_CAP      | Total equity of the company at the moment of starting the campaign.  |
| PRE_MONEY_VAL      | Valuation of the company before the starting of the campaign.  |
| MIN_FUNDING_OFF    | Minimum amount of equity offered for the funding campaign.   |
| PRESENTATION_SCORE | 0 to 10 score which considers the presence of photos, videos, updates, press material and the number of words used to describe the project.  |
| NETWORK_SCORE      | 0 to 10 score which considers the number of users indicated as company's workers on LinkedIn, the number of connections on the LinkedIn company's page, the average number of proponent team members' LinkedIn connections and the number of Likes on the company's Facebook Page. |
| HUMAN_CAP_SCORE    | 0 to 10 score which considers both educational, professional and entrepreneurial backgrounds of proponent team members.  |

|              |   |
|--------------|---|
| AVG_TEAM_AGE | Average age of the proponent team.  |
| MIN_PLEDGE   | Minimum amount of pledge accepted.  |
| FUNDED       | The variable takes the value 1 if the campaign has been successfully financed; otherwise, it takes the 0 value. |
| OVERFUNDED   | The variable takes the value 1 if the campaign has been overfunded; otherwise, it takes the 0 value.            |

Table 15 - Description of used variables (Author's personal elaboration)

With respect to the first introduced purpose, a preliminary investigation concerning the most important variables of the dataset highlighted the lack of linearity in relationships among them; hence, even obtained scatter plots suggested to avoid the utilization of a linear regression model, that would probably have been useless in explaining the phenomenon. Nonetheless, a few meaningful correlations have been observed.

### Correlation Matrix

The following correlation matrix has been designed in such a way that only correlations with a significance level of  $\alpha = 0.10$  are reported, and just the ones that are statistically significant with  $\alpha = 0.05$  are marked with an asterisk indicator.

| <i>Correlation Matrix</i> |                   |                    |                   |                   |               |                   |                   |                    |               |                 |
|---------------------------|-------------------|--------------------|-------------------|-------------------|---------------|-------------------|-------------------|--------------------|---------------|-----------------|
| Variable                  | PLEDGED_F         | FUNDING_RATE       | N_PLEDGERS        | N_PATENTS         | PRE_OFFER_CAP | PRE_MONEY_VAL     | MIN_FUNDING_OFF   | PRESENTATION_SCORE | NETWORK_SCORE | HUMAN_CAP_SCORE |
| PLEDGED_F                 | 1.0000            |                    |                   |                   |               |                   |                   |                    |               |                 |
| FUNDING_RATE              | 0.6462*<br>0.0000 | 1.0000             |                   |                   |               |                   |                   |                    |               |                 |
| N_PLEDGERS                | 0.6117*<br>0.0000 | 0.7498*<br>0.0000  | 1.0000            |                   |               |                   |                   |                    |               |                 |
| N_PATENTS                 | 0.2378*<br>0.0124 | 0.3033*<br>0.0013  | 0.3017*<br>0.0016 | 1.0000            |               |                   |                   |                    |               |                 |
| PRE_OFFER_CAP             |                   |                    | 0.2838*<br>0.0031 |                   | 1.0000        |                   |                   |                    |               |                 |
| PRE_MONEY_VAL             |                   | 0.1773<br>0.0639   | 0.3294*<br>0.0005 | 0.5203*<br>0.0000 |               | 1.0000            |                   |                    |               |                 |
| MIN_FUNDING_OFF           | 0.2896*<br>0.0021 | -0.2304*<br>0.0154 | -0.1771<br>0.0679 |                   |               |                   | 1.0000            |                    |               |                 |
| PRESENTATION_SCORE        | 0.1876<br>0.0530  | 0.3795*<br>0.0001  | 0.3136*<br>0.0011 |                   |               |                   |                   | 1.0000             |               |                 |
| NETWORK_SCORE             |                   | 0.2022*<br>0.0342  | 0.2131*<br>0.0275 |                   |               | 0.2939*<br>0.0010 | -0.1552<br>0.0879 |                    | 1.0000        |                 |
| HUMAN_CAP_SCORE           | 0.1664<br>0.0824  |                    |                   |                   |               |                   |                   |                    |               | 1.0000          |

Table 16 - Correlation Matrix (Author's personal elaboration)

By observing Table 16, it is possible to denote both obvious correlations and more interesting ones; for instance, the fact that the amount of PLEDGED FUNDS moves jointly with the FUNDING RATE, and that both of them tend to vary with the NUMBER OF PLEDGERS, did not provide nothing new. Looking at the MINIMUM FUNDING amount hence, it appears to be positively correlated with the amount of PLEDGED FUNDS (0.29) and negatively correlated with the FUNDING RATE (-0.23). While the first correlation could be explained by hypothesizing that a higher minimum amount set for a campaign tends to push pledges to increase in order to make the funding possible, the second circumstance is probably due to the fact that higher minimum amounts tend to correspond to higher targets, thus making it harder to reach high funding ratios.

Furthermore, it is remarkable that the NUMBER OF PATENTS a venture holds shows a significant positive correlation towards both the NUMBER OF PLEDGERS, the amount of PLEDGED FUNDS and the RATE OF SUCCESS; obtained results thus seem to be in-line with the ones of Ahlers et al. (2015), and hence on the other side with respect to what found by Meoli et al. (2017).

Another interesting insight is provided by correlations regarding the NUMBER OF PLEDGERS: actually, it looks that it moves in the same direction of the values of both PRE-OFFER CAPITALIZATION (0.28) and PRE-MONEY VALUATION (0.33); therefore, this could suggest that investors tend to be attracted by investing in solid and high-value businesses. For what concerns PRE-MONEY VALUATION, it is positively correlated with the ventures' NUMBER OF PATENTS (0.52), with a very high statistical significance as expectable (p-value = 0.001).

In conclusion, both PRESENTATION SCORE and NETWORK SCORE seem to vary in the same direction as the amount of PLEDGED FUNDS and NUMBER OF PLEDGERS, at a significance level of  $\alpha = 0.05$ , thus appearing to be on the same direction as previous findings from Mollick (2014). As for HUMAN CAPITAL hence, it tends to move jointly with PLEDGED FUNDS, even if the matrix does not provide high significance about this circumstance.

### **Means comparison test**

After having discussed the main evidences provided by the correlation matrix, the analysis moved to the second objective, which consisted in assessing the different levels assumed by a set of certain variables, when analyzing two different subsamples. In details, the aspects I wanted to analyze were related to dimensions which could works towards investors as signals of ventures' quality for fundraising campaigns; namely, they are the AVERAGE



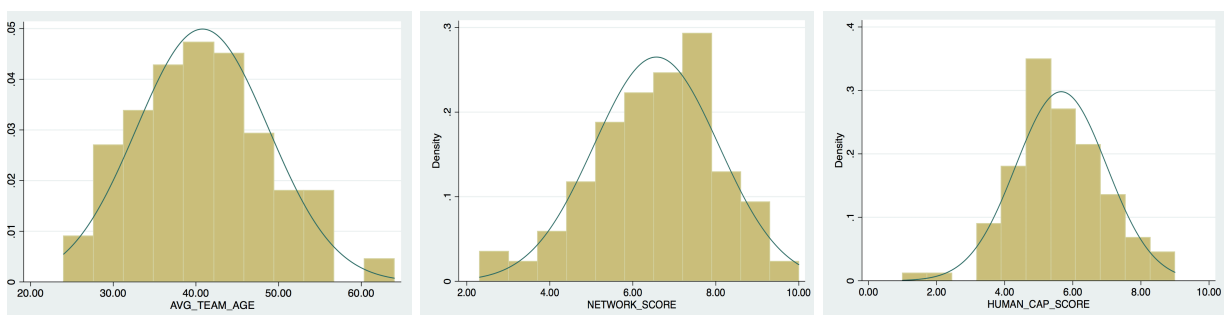
AGE OF PROPONENT TEAM and its HUMAN CAPITAL SCORE, the PRESENTATION and NETWORK SCORES of the campaign, and finally the MINIMUM PLEDGE ACCEPTED and the PRE-MONEY VALUATION.

Aiming at performing the mentioned analysis, the most suitable tool has been identified in the traditional t-test; however, as anticipated before, one of its prerequisites consists in having a normal distribution for the examined observations, requirement which was not always fulfilled by collected data. In such circumstances, as happened when analyzing Platforms Database, I decided to utilize a non-parametrical test, in such a way that the observations' distribution would have not affected obtained results. Precisely, the utilized test was the Wilcoxon-Mann-Whitney U; with respect to its functioning, main aspects and features, they have already been introduced in the platforms' statistical analysis dedicated section.

At this point, in order to control for the assumption of normality, I used the Shapiro-Wilk test as before. As reported by Table 17, for what concerned AVG\_TEAM\_AGE, NETWORK\_SCORE and HUMAN\_CAPITAL\_SCORE there was not enough statistical significance to reject the null hypotheses of a normal distribution, as confirmed by plots shown in Table 18.

| <i>Shapiro-Wilk W test for normal data</i> |     |         |       |       |         |
|--|-----|---------|-------|-------|---------|
| Variable                                   | Obs | W       | V     | z     | Prob>z  |
| AVG_TEAM_AGE                               | 122 | 0.98937 | 1.037 | 0.082 | 0.46743 |
| NETWORK_SCORE                              | 122 | 0.98356 | 1.604 | 1.059 | 0.14475 |
| HUMAN_CAP_SCORE                            | 122 | 0.98595 | 1.371 | 0.707 | 0.23968 |

*Table 17 - Shapiro-Wilk test for average team age, network score and human capital score (Author's personal elaboration)*



*Table 18 - Distribution of average team age, network score and human capital score (Author's personal elaboration)*

As for PRESENTATION\_SCORE, MINIMUM\_PLEDGE and PRE\_MONEY\_VAL, they turned out to violate the normality assumption, as confirmed by the Shapiro-Wilk test which strongly suggest refusing the null hypotheses about their normality (see Table 19).

| <i>Shapiro-Wilk W test for normal data</i> |     |         |        |       |         |
|--|-----|---------|--------|-------|---------|
| Variable                                   | Obs | W       | V      | z     | Prob>z  |
| PRESENTATION_SCORE                         | 119 | 0.88096 | 11.374 | 5.445 | 0.00000 |
| MINIMUN_PLEDGE                             | 122 | 0.29260 | 69.029 | 9.495 | 0.00000 |
| PRE_MONEY_VAL                              | 122 | 0.23921 | 74.240 | 9.659 | 0.00000 |

*Table 19 - Shapiro-Wilk test for campaign's presentation score, minimum accepted pledge and pre-money valuation (Author's personal elaboration)*

### **Funded vs. Unfunded campaigns**

After the assessment of variables' distributions, the first comparison which has been performed was the one between FUNDED and UNFUNDED campaigns.

The dimension I investigated as first was the AVERAGE TEAM AGE, in order to verify whether successful campaigns are both proposed and supported by teams with different average age. In that regard, the hypothesis to be verified was:

*H1: Funded campaigns are proposed by teams with different average age with respect to unfunded ones.*

In looking at the values assumed by the AVERAGE TEAM AGE on the dataset observations, it seemed to exist a little difference between the two subsamples (see Table 20).

| <i>Summary for variable:</i> |          | AVG_TEAM_AGE |     |
|------------------------------|----------|--------------|-----|
| <i>by categories of:</i>     |          | FUNDED       |     |
| FUNDED                       | mean     | sd           | N   |
| 0                            | 41.07374 | 7.886973     | 44  |
| 1                            | 40.72229 | 8.347534     | 66  |
| Total                        | 40.86287 | 8.131564     | 110 |

*Table 20 - Observed values for the average team age of the two analyzed groups (Author's personal elaboration)*

| <i>Two-sample t test with equal variances</i> |     |                               |           |                           |                      |          |
|---|-----|-------------------------------|-----------|---------------------------|----------------------|----------|
| Group   | Obs | Mean                          | Std. Err. | Std. Dev.                 | [95% Conf. Interval] |          |
| 0   | 44  | 41.07374                      | 1.189006  | 7.886973                  | 38.67588             | 43.4716  |
| 1   | 66  | 40.72229                      | 1.02751   | 8.347534                  | 38.67021             | 42.77437 |
| combined                                      | 110 | 40.86287                      | .7753142  | 8.131564                  | 39.32623             | 42.39952 |
| diff  |     | .3514487                      | 1.589554  |                           | -2.799323            | 3.50222  |
| diff = mean(0) - mean(1)                      |     |                               |           | t = 0.2211                |                      |          |
| Ho: diff = 0                                  |     |                               |           | degrees of freedom = 108  |                      |          |
| Ha: diff < 0                                  |     | Ha: diff != 0                 |           | Ha: diff > 0              |                      |          |
| Pr(T < t) = <b>0.5873</b>                     |     | Pr( T  >  t ) = <b>0.8254</b> |           | Pr(T > t) = <b>0.4127</b> |                      |          |

Table 21 - t-test for the average team age between funded and unfunded campaigns (Author's personal elaboration)

However, with respect to the obtained result, there was not sufficient significance to reject the null hypothesis about the equality of the AVERAGE TEAM AGE (p-value = 0.8254); therefore, the tested proposition has not been supported (see Table 21). Practically speaking, it is not possible to argue that successful campaigns' proponent teams have different average age than unsuccessful ones.

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As anticipated, the second variable to be examined was the HUMAN CAPITAL SCORE. The objective was to check whether or not successful deals are proposed by teams with higher scores than unsuccessful ones. Therefore, the hypothesis to be verified was:

*H2: Funded campaigns are proposed by teams with higher human capital scores with respect to unfunded ones.*

| <i>Summary for variable:</i> |          | HUMAN_CAP_SCORE |     |
|------------------------------|----------|-----------------|-----|
| <i>by categories of:</i>     |          | FUNDED          |     |
| FUNDED                       | mean     | sd              | N   |
| 0                            | 5.463501 | 1.499703        | 44  |
| 1                            | 5.924741 | 1.233872        | 66  |
| Total                        | 5.740245 | 1.358921        | 110 |

Table 22 - Observed values for the average human capital score of the two analyzed groups (Author's personal elaboration)

Considering that the score ranges from 0 to 10, Table 22 denotes the existence of a slight difference between the average values obtained from the HUMAN CAPITAL SCORES of the two groups.

| <i>Two-sample t test with equal variances</i> |     |                               |           |                           |                      |          |
|---|-----|-------------------------------|-----------|---------------------------|----------------------|----------|
| <b>Group</b>                                  | Obs | Mean                          | Std. Err. | Std. Dev.                 | [95% Conf. Interval] |          |
| 0   | 44  | 5.463501                      | .2260887  | 1.499703                  | 5.00755              | 5.919452 |
| 1   | 66  | 5.924741                      | .1518791  | 1.233872                  | 5.621418             | 6.228065 |
| combined                                      | 110 | 5.740245                      | .129568   | 1.358921                  | 5.483446             | 5.997045 |
| diff  |     | -.4612404                     | .2619682  |                           | -.9805068            | .058026  |
| diff = mean(0) - mean(1)                      |     |                               |           | t =                       | -1.7607              |          |
| Ho: diff = 0                                  |     |                               |           | degrees of freedom =      | 108                  |          |
| Ha: diff < 0                                  |     | Ha: diff != 0                 |           | Ha: diff > 0              |                      |          |
| Pr(T < t) = <b>0.0406</b>                     |     | Pr( T  >  t ) = <b>0.0811</b> |           | Pr(T > t) = <b>0.9594</b> |                      |          |

*Table 23 - t-test for the average human capital score between funded and unfunded campaigns (Author's personal elaboration)*

Contrarily to what happened before, the test suggested that at a significance level of  $\alpha = 0.05$  it was possible to reject the null hypothesis in support of the alternative one, which states that the difference between the means was less than 0 (see Table 23). Therefore, in addition to observed values' indications, even obtained results support the verified assumption and allow to argue that funded deals are proposed by teams with higher HUMAN CAPITAL SCORES than unfunded ones.

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The third dimension I tested was then the NETWORK SCORE, in order to verify if successful deals are characterized by higher network scores with respect to unsuccessful ones. To this purpose, the hypothesis to be verified was:

*H3: Funded campaigns are characterized by higher network scores with respect to unfunded ones.*

With respect to collected network scores, again ranging from 0 to 10, Table 24 shows a consistent difference between the average values observed for the two subsamples.

| Summary for variable: |          | NETWORK_SCORE |     |
|-----------------------|----------|---------------|-----|
| by categories of:     |          | FUNDED        |     |
| FUNDED                | mean     | sd            | N   |
| 0                     | 6.091335 | 1.486836      | 44  |
| 1                     | 6.839194 | 1.473007      | 66  |
| Total                 | 6.54005  | 1.517054      | 110 |

Table 24 - Observed values for the average network score of the two analyzed groups (Author's personal elaboration)

| Two-sample t test with equal variances |     |                               |           |                           |                      |           |
|--|-----|-------------------------------|-----------|---------------------------|----------------------|-----------|
| Group                                  | Obs | Mean                          | Std. Err. | Std. Dev.                 | [95% Conf. Interval] |           |
| 0                                      | 44  | 6.091335                      | .224149   | 1.486836                  | 5.639295             | 6.543374  |
| 1                                      | 66  | 6.839194                      | .1813147  | 1.473007                  | 6.477083             | 7.201304  |
| combined                               | 110 | 6.54005                       | .1446455  | 1.517054                  | 6.253368             | 6.826733  |
| diff                                   |     | -.7478591                     | .2877583  |                           | -1.318246            | -.1774723 |
| diff = mean(0) - mean(1)               |     |                               |           | t = -2.5989               |                      |           |
| Ho: diff = 0                           |     |                               |           | degrees of freedom = 108  |                      |           |
| Ha: diff < 0                           |     | Ha: diff != 0                 |           | Ha: diff > 0              |                      |           |
| Pr(T < t) = <b>0.0053</b>              |     | Pr( T  >  t ) = <b>0.0107</b> |           | Pr(T > t) = <b>0.9947</b> |                      |           |

Table 25 - t-test for the average network score between funded and unfunded campaigns (Author's personal elaboration)

Even in this case, the test suggested that at a significance level of  $\alpha = 0.01$  it is possible to strongly reject the null hypothesis in favor of the alternative one, which stated that the average value for the second subsample tends to be higher than the first's one (see Table 25). Hence, results support the verified proposition and indicate that successful campaigns are likely to have higher NETWORK SCORES than unsuccessful ones, as already indicated by examined observations.

-----

After the network score, it was the turn of the PRESENTATION SCORE, ranging from 0 to 10 as the others, to be examined. In details, I wanted to verify if successful campaigns are characterized by different presentation scores than the ones of campaigns which did not succeed. In that respect, the hypothesis to be tested was:

*H4: Funded campaigns are characterized by different presentation scores with respect to unfunded ones.*

As shown by Table 26, successful campaigns seemed to have a slightly higher average PRESENTATION SCORE than unsuccessful ones.

| <i>Summary for variable:</i> |          | PRESENTATION_ SCORE |     |
|------------------------------|----------|---------------------|-----|
| <i>by categories of:</i>     |          | FUNDED              |     |
| <b>FUNDED</b>                | mean     | sd                  | N   |
| 0                            | 3.478933 | 1.075803            | 41  |
| 1                            | 4.061404 | 1.40403             | 66  |
| Total                        | 3.838214 | 1.313971            | 107 |

Table 26 - Observed values for the average presentation score of the two analyzed groups (Author's personal elaboration)

| <i>Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test</i>   |     |               |          |
|--|-----|---------------|----------|
| <b>FUNDED</b>  | obs | rank sum      | expected |
| 0  | 41  | 1863          | 2214     |
| 1  | 66  | 3915          | 3564     |
| combined   | 107 | 5778          | 5778     |
| unadjusted variance  |     | 24354.00      |          |
| adjustment for ties  |     | 0.00          |          |
| adjusted variance  |     | 24354.00      |          |
| Ho: PRESENTATION_SCORE(FUNDED==0) = PRESENTATION_SCORE(FUNDED==1)  |     |               |          |
| z =  |     | -2.249        |          |
| Prob >  z  = (p-value) =   |     | <b>0.0245</b> |          |
| P{PRESENTATION_SCORE(FUNDED==0) > PRESENTATION_SCORE(FUNDED==1)} = |     |               | 0.370    |

Table 27 - Wilcoxon-Mann-Whitney U test for presentation scores between funded and unfunded campaigns (Author's personal elaboration)

Actually, the test results shown in Table 27 provided statistical significance (p-value = 0.0245) to reject the null hypothesis and thus to support the stated assumption, by which successful campaigns tend to have different PRESENTATION SCORES than the others. Considering also the estimated probability calculated by the test and the previously observed values, it is possible to argue that funded deals are likely to have higher presentation scores than unfunded ones ( $P = 1 - 0.37 = 0.63$ ).

The next variable to be tested was the MINIMUM ACCEPTED PLEDGE. Precisely, I wanted to control if successful campaigns tend to be linked with different minimum pledges than the ones of campaigns which are not financed. Consequently, the hypothesis to be tested was:

*H5: Funded campaigns are characterized by different minimum pledges with respect to unfunded ones.*

With respect to observed results reported in Table 28, successful campaigns seem to have an average MINIMUM ACCEPTED PLEDGE which is relevantly higher than the one of unsuccessful deals.

| Summary for variable: |          | MIN_PLEDGE |     |
|-----------------------|----------|------------|-----|
| by categories of:     |          | FUNDED     |     |
| FUNDED                | mean     | sd         | N   |
| 0                     | 493.6405 | 398.5699   | 44  |
| 1                     | 1086.275 | 2635.824   | 66  |
| Total                 | 849.2211 | 2071.42    | 110 |

Table 28 - Observed values for the average minimum accepted pledge of the two analyzed groups (Author's personal elaboration)

| Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test |     |               |          |
|---|-----|---------------|----------|
| FUNDED  | obs | rank sum      | expected |
| 0   | 44  | 2336          | 2442     |
| 1   | 66  | 3769          | 3663     |
| combined  | 110 | 6105          | 6105     |
| unadjusted variance                                       |     | 26862.00      |          |
| adjustment for ties                                       |     | -439.72       |          |
| adjusted variance   |     | 26422.28      |          |
| Ho: MIN_PLEDGE(FUNDED==0) = MIN_PLEDGE(FUNDED==1)         |     |               |          |
| z =   |     | -0.652        |          |
| Prob >  z  = (p-value) =                                  |     | <b>0.5143</b> |          |
| P{MIN_PLEDGE(FUNDED==0) > MIN_PLEDGE(FUNDED==1)} =        |     |               | 0.463    |

Table 29 - Wilcoxon-Mann-Whitney U test for minimum accepted pledges between funded and unfunded campaigns (Author's personal elaboration)

However, according to results exposed in Table 29, there was no statistical significance to reject the null hypotheses; consequently, analyzed data did not support the tested assumption. Therefore, the estimated probability for the minimum accepted pledge to be higher in the first subsample than in the second one did not provide any useful indication.

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The last dimension to be tested was the PRE-MONEY VALUATION. With respect to this variable, I was wondering if financed campaigns tend to have different pre-money valuations than the ones characterizing unfunded projects. Consequently, the hypothesis to be tested was:

*H6: Funded campaigns are characterized by different pre-money valuations with respect to unfunded ones.*

Accordingly, Table 30 highlights a consistent difference in the average PRE-MONEY VALUATION with respect to the two analyzed subsamples.

| <i>Summary for variable:</i> |                | PRE_MONEY_VAL   |            |
|------------------------------|----------------|-----------------|------------|
| <i>by categories of:</i>     |                | FUNDED          |            |
| <b>FUNDED</b>                | mean           | sd              | N          |
| 0                            | 1500114        | 1895039         | 44         |
| 1                            | 4153089        | 1.33e+07        | 66         |
| <b>Total</b>                 | <b>3091899</b> | <b>1.04e+07</b> | <b>110</b> |

*Table 30 - Observed values for the average pre-money valuation of the two analyzed groups (Author's personal elaboration)*

Notwithstanding, as displayed in Table 31, results obtained after performing the test did not suggest rejecting the null hypotheses (p-value = 0.1726); as a consequence, the estimated probability turned out to be useless again.

In conclusion, examined data did not support the tested assumption about the existence of different PRE-MONEY VALUATIONS between funded and unfunded groups, even if the averages obtained from the observations seemed to indicate an opposite result.



| <i>Two-sample Wilcoxon rank-sum Wilcoxon<br/>(Mann-Whitney) test</i> |     |               |          |
|--|-----|---------------|----------|
| <b>FUNDED</b>  | obs | rank sum      | expected |
| 0  | 44  | 2218.5        | 2442     |
| 1  | 66  | 3886.5        | 3663     |
| combined   | 110 | 6105          | 6105     |
| unadjusted variance  |     | 26862.00      |          |
| adjustment for ties  |     | -5.33         |          |
| adjusted variance  |     | 26856.67      |          |
| Ho: PRE_MONEY_VAL(FUNDED==0) =<br>PRE_MONEY_VAL(FUNDED==1)           |     |               |          |
| z =  |     | -1.364        |          |
| Prob >  z  = <b>(p-value)</b> =                                      |     | <b>0.1726</b> |          |
| P{PRE_MONEY_VAL(FUNDED==0) ><br>PRE_MONEY_VAL(FUNDED==1)} =          |     |               | 0.423    |

Table 31 - Wilcoxon-Mann-Whitney U test for pre-money valuations between funded and unfunded campaigns (Author's personal elaboration)

### Overfunded vs. Non-Overfunded campaigns

With the aim of deepening the behavior of examined variables in a comprehensive fashion, I slightly moved the research objective to a more restrictive circumstance; essentially, instead of comparing funded and unfunded campaigns, the following analysis assessed results obtained by making a comparison between overfunded campaigns and non-overfunded ones.

The followed research pattern was the same as the above-described one; thus, the first dimension that have been investigated was the AVERAGE TEAM AGE, in order to verify whether overfunded deals are both proposed and supported by teams with different average age. In that regard, the hypothesis to be verified was:

*H7: Overfunded campaigns are proposed by teams with different average age with respect to non-overfunded ones.*

In looking at the values assumed by the AVERAGE TEAM AGE on the dataset observations, it was possible to denote a little difference between the two groups (see Table 32).

| Summary for variable: |          | AVG_TEAM_AGE |     |
|-----------------------|----------|--------------|-----|
| by categories of:     |          | OVERFUNDED   |     |
| OVER-FUNDED           | mean     | sd           | N   |
| 0                     | 41.36245 | 7.598828     | 64  |
| 1                     | 40.16781 | 8.858617     | 46  |
| Total                 | 40.86287 | 8.131564     | 110 |

Table 32 - Observed values for the average team age of the two analyzed groups (Author's personal elaboration)

| Two-sample t test with equal variances |     |                               |           |                           |                      |          |
|--|-----|-------------------------------|-----------|---------------------------|----------------------|----------|
| Group                                  | Obs | Mean                          | Std. Err. | Std. Dev.                 | [95% Conf. Interval] |          |
| 0                                      | 64  | 41.36245                      | .9498535  | 7.598828                  | 39.46432             | 43.26059 |
| 1                                      | 46  | 40.16781                      | 1.306132  | 8.858617                  | 37.53712             | 42.79849 |
| combined                               | 110 | 40.86287                      | .7753142  | 8.131564                  | 39.32623             | 42.39952 |
| diff                                   |     | 1.194649                      | 1.574886  |                           | -1.927048            | 4.316345 |
| diff = mean(0) - mean(1)               |     |                               |           | t = 0.7586                |                      |          |
| Ho: diff = 0                           |     |                               |           | degrees of freedom = 108  |                      |          |
| Ha: diff < 0                           |     | Ha: diff != 0                 |           | Ha: diff > 0              |                      |          |
| Pr(T < t) = <b>0.7751</b>              |     | Pr( T  >  t ) = <b>0.4498</b> |           | Pr(T > t) = <b>0.2249</b> |                      |          |

Table 33 - t-test for the average team age between overfunded and non-overfunded deals (Author's personal elaboration)

However, with respect to the obtained results, there was not sufficient significance to reject the null hypothesis about the equality of the AVERAGE TEAM AGE (p-value = 0.4498); therefore, the tested proposition has not been supported (see Table 33). Basically, according to what found with the previous test about teams' age, it is not possible to argue that overfunded campaigns' proponent teams have a significantly different age than others.

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The second variable that have been examined was, as happened before, the HUMAN CAPITAL SCORE. The objective was to check whether or not overfunded deals are proposed by teams with higher scores than non-overfunded ones. Therefore, the hypothesis to be verified was:

*H8: Overfunded campaigns are proposed by teams with higher human capital scores with respect to non-overfunded ones.*

In examining the values obtained by sample observations, Table 34 denotes the existence of a tiny difference between the average scores obtained from the two subsamples.

| Summary for variable: |          | HUMAN_CAP_SCORE |     |
|-----------------------|----------|-----------------|-----|
| by categories of:     |          | OVERFUNDED      |     |
| OVER-FUNDED           | mean     | sd              | N   |
| 0                     | 5.631653 | 1.484829        | 64  |
| 1                     | 5.89133  | 1.160314        | 46  |
| Total                 | 5.740245 | 1.358921        | 110 |

Table 34 - Observed values for the average human capital score of the two analyzed groups (Author's personal elaboration)

| Two-sample t test with equal variances |     |                               |           |                           |                      |          |
|--|-----|-------------------------------|-----------|---------------------------|----------------------|----------|
| Group                                  | Obs | Mean                          | Std. Err. | Std. Dev.                 | [95% Conf. Interval] |          |
| 0                                      | 64  | 5.631653                      | .1856036  | 1.484829                  | 5.260754             | 6.002552 |
| 1                                      | 46  | 5.89133                       | .1710789  | 1.160314                  | 5.54676              | 6.235901 |
| combined                               | 110 | 5.740245                      | .129568   | 1.358921                  | 5.483446             | 5.997045 |
| diff                                   |     | -.2596772                     | .2627044  |                           | -.7804029            | .2610485 |
| diff = mean(0) - mean(1)               |     |                               |           | t = -0.9885               |                      |          |
| Ho: diff = 0                           |     |                               |           | degrees of freedom = 108  |                      |          |
| Ha: diff < 0                           |     | Ha: diff != 0                 |           | Ha: diff > 0              |                      |          |
| Pr(T < t) = <b>0.1626</b>              |     | Pr( T  >  t ) = <b>0.3251</b> |           | Pr(T > t) = <b>0.8374</b> |                      |          |

Table 35 - t-test for the average human capital score between overfunded and non-overfunded deals (Author's personal elaboration)

On the same line of what happened before, results suggested that with a significance level of  $\alpha = 0.05$  it was not possible to reject the null hypothesis in support of the alternative one (see Table 35). In the end, contrarily to what has been found with respect to the first comparison, obtained results do not confirm the tested assumption, and thus do not allow to argue that overfunded campaigns are proposed by teams with higher HUMAN CAPITAL SCORES than the other campaigns' teams.

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The third dimension I tested was represented by the NETWORK SCORE, aiming at assessing if overwhelmingly successful deals are characterized by higher network scores with respect to the others. To this purpose, the hypothesis that has been tested was:

*H9: Overfunded campaigns are characterized by higher network scores with respect to non-overfunded ones.*

As displayed by Table 36, an appreciable differential seemed to exist between the average values observed for the two different groups of campaigns.

| Summary for variable: |          | NETWORK_SCORE |     |
|-----------------------|----------|---------------|-----|
| by categories of:     |          | OVERFUNDED    |     |
| OVER-FUNDED           | mean     | sd            | N   |
| 0                     | 6.278605 | 1.624977      | 64  |
| 1                     | 6.9038   | 1.28273       | 46  |
| Total                 | 6.54005  | 1.517054      | 110 |

Table 36 - Observed values for the average network score of the two analyzed groups (Author's personal elaboration)

| Two-sample t test with equal variances |     |                               |           |                           |                      |          |
|--|-----|-------------------------------|-----------|---------------------------|----------------------|----------|
| Group                                  | Obs | Mean                          | Std. Err. | Std. Dev.                 | [95% Conf. Interval] |          |
| 0                                      | 64  | 6.278605                      | .2031221  | 1.624977                  | 5.872698             | 6.684512 |
| 1                                      | 46  | 6.9038                        | .1891282  | 1.28273                   | 6.522876             | 7.284723 |
| combined                               | 110 | 6.54005                       | .1446455  | 1.517054                  | 6.253368             | 6.826733 |
| diff                                   |     | -.6251943                     | .2883902  |                           | -1.196834            | -.053555 |
| diff = mean(0) - mean(1)               |     |                               |           | t = -2.1679               |                      |          |
| Ho: diff = 0                           |     |                               |           | degrees of freedom = 108  |                      |          |
| Ha: diff < 0                           |     | Ha: diff != 0                 |           | Ha: diff > 0              |                      |          |
| Pr(T < t) = <b>0.0162</b>              |     | Pr( T  >  t ) = <b>0.0324</b> |           | Pr(T > t) = <b>0.9838</b> |                      |          |

Table 37 - t-test for the average network score between overfunded and non-overfunded deals (Author's personal elaboration)

In this circumstance, the test suggested that at a significance level of  $\alpha = 0.05$  it is possible to steadily reject the null hypothesis in favor of the alternative one, thus implying that the average value for the second subsample tends to be higher than the first's one (see Table 37). Hence, exactly as before, results support the verified proposition and indicate that overfunded campaigns are likely to have higher NETWORK SCORES than the others, confirming what has been anticipated by the observations.

At this point of the study, it was the turn of the PRESENTATION SCORE to be examined. Again, I wanted to verify if overfunded campaigns are characterized by different presentation scores than the ones of campaigns which do not reach the overfunded status. In that respect, the hypothesis to be tested was:

*H10: Overfunded campaigns are characterized by different presentation scores with respect to non-overfunded ones.*

As demonstrated by results displayed in Table 38, overfunded campaigns appeared to have a relevantly higher average PRESENTATION SCORE than the other deals.

| Summary for variable: |          | PRESENTATION_SCORE |     |
|-----------------------|----------|--------------------|-----|
| by categories of:     |          | OVERFUNDED         |     |
| OVER-FUNDED           | mean     | sd                 | N   |
| 0                     | 3.432898 | .9519525           | 61  |
| 1                     | 4.375699 | 1.52991            | 46  |
| Total                 | 3.838214 | 1.313971           | 107 |

Table 38 - Observed values for the average presentation score of the two analyzed groups (Author's personal elaboration)

| Two-sample Wilcoxon rank-sum Wilcoxon (Mann-Whitney) test                  |     |               |          |
|--|-----|---------------|----------|
| OVERFUNDED   | obs | rank sum      | expected |
| 0  | 61  | 2699          | 3294     |
| 1  | 46  | 3079          | 2484     |
| combined   | 107 | 5778          | 5778     |
| unadjusted variance  |     | 25254.00      |          |
| adjustment for ties  |     | 0.00          |          |
| adjusted variance  |     | 25254.00      |          |
| Ho: PRESENTATION_SCORE(OVERFUNDED==0) = PRESENTATION_SCORE(OVERFUNDED==1)  |     |               |          |
| z =  |     | -3.744        |          |
| Prob >  z  = (p-value) =   |     | <b>0.0002</b> |          |
| P{PRESENTATION_SCORE(OVERFUNDED==0) > PRESENTATION_SCORE(OVERFUNDED==1)} = |     |               | 0.288    |

Table 39 - Wilcoxon-Mann-Whitney U test for presentation scores between overfunded and non-overfunded deals (Author's personal elaboration)

In accordance, test results shown in Table 39 provided high statistical significance (p-value = 0.0002) to reject the null hypothesis and thus to support the stated assumption by which overfunded campaigns tend to have different PRESENTATION SCORES if compared to the rest. Considering also the estimated probability calculated by the test, it is possible to argue that overfunded deals are likely to have higher presentation scores than non-overfunded ones ( $P = 1 - 0.288 = 0.712$ ). Obtained outcomes are thus in-line with the ones previously observed.

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Next to the presentation score, the MINIMUM ACCEPTED PLEDGE has been analyzed again. Essentially, I wanted to control if high-successful campaigns tend to be linked with different minimum pledges than the ones of campaigns which do not reach the overfunding. Pursuant to what stated, the hypothesis to be assessed was:

*H11: Overfunded campaigns are characterized by different minimum pledges with respect to non-overfunded ones.*

With respect to observed results reported in Table 40, overfunded campaigns seemed to have an average MINIMUM ACCEPTED PLEDGE which is relevantly higher than the one of deals which do not raise more than the fixed target amount.

| <i>Summary for variable:</i> |          | MIN_PLEDGE |     |
|------------------------------|----------|------------|-----|
| <i>by categories of:</i>     |          | OVERFUNDED |     |
| OVER-FUNDED                  | mean     | sd         | N   |
| 0                            | 630.3489 | 896.1514   | 64  |
| 1                            | 1153.739 | 3017.611   | 46  |
| Total                        | 849.2211 | 2071.42    | 110 |

*Table 40 - Observed values for the average minimum accepted pledge of the two analyzed groups (Author's personal elaboration)*

Nonetheless, according to results exposed in Table 41, there was no statistical significance to reject the null hypotheses (p-value = 0.2149); consequently, analyzed data does not support the proposed assumption. As happened before, given the acceptance of the null hypothesis, the probability estimated by the test turned out to be useless. Even in this case hence, obtained results confirm what have been found when comparing funded and unfunded deals.

| <i>Two-sample Wilcoxon rank-sum Wilcoxon<br/>(Mann-Whitney) test</i> |     |               |          |
|--|-----|---------------|----------|
| <b>OVERFUNDED</b>  | obs | rank sum      | expected |
| 0  | 64  | 3349          | 3552     |
| 1  | 46  | 2756          | 2553     |
| combined   | 110 | 6105          | 6105     |
| unadjusted variance  |     | 27232.00      |          |
| adjustment for ties  |     | -445.77       |          |
| adjusted variance  |     | 26786.23      |          |
| Ho: MIN_PLEDGE(OVERFUNDED==0) =<br>MIN_PLEDGE(OVERFUNDED==1)         |     |               |          |
| z =  |     | -1.240        |          |
| Prob >  z  = <b>(p-value)</b> =                                      |     | <b>0.2149</b> |          |
| P{MIN_PLEDGE(OVERFUNDED==0) ><br>MIN_PLEDGE(OVERFUNDED==1)} =        |     |               | 0.431    |

Table 41 - Wilcoxon-Mann-Whitney U test for minimum accepted pledges between overfunded and non-overfunded deals  
(Author's personal elaboration)

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The last dimension I tested was hence the PRE-MONEY VALUATION. With respect to this variable, I was wondering if overfunded deals tend to have different pre-money valuations than the ones characterizing other campaigns. Aiming at assessing this fact, the hypothesis I tested was:

*H12: Overfunded campaigns are characterized by different pre-money valuations with respect to non-overfunded ones.*

As happened before, Table 42 highlights a relevant difference in the average PRE-MONEY VALUATION, which is however reduced with respect to the one obtained in the first comparison (Funded vs. Unfunded).

| <i>Summary for<br/>variable:</i> |         | PRE_MONEY_VAL |     |
|----------------------------------|---------|---------------|-----|
| <i>by categories of:</i>         |         | OVERFUNDED    |     |
| <b>OVER-FUNDED</b>               | mean    | sd            | N   |
| 0                                | 2376464 | 5850993       | 64  |
| 1                                | 4087287 | 1.46e+07      | 46  |
| Total                            | 3091899 | 1.04e+07      | 110 |

Table 42 - Observed values for the average pre-money valuation of the two analyzed groups (Author's personal elaboration)

| <i>Two-sample Wilcoxon rank-sum Wilcoxon<br/>(Mann-Whitney) test</i> |     |               |          |
|--|-----|---------------|----------|
| <b>OVERFUNDED</b>  | obs | rank sum      | expected |
| 0  | 64  | 3249.5        | 3552     |
| 1  | 46  | 2855.5        | 2553     |
| combined   | 110 | 6105          | 6105     |
| unadjusted variance  |     | 27232.00      |          |
| adjustment for ties  |     | -5.40         |          |
| adjusted variance  |     | 27226.60      |          |
| Ho: PRE_MONEY_VAL(OVERFUNDED==0) =<br>PRE_MONEY_VAL(OVERFUNDED==1)   |     |               |          |
| z =  |     | -1.833        |          |
| Prob >  z  = <b>(p-value)</b> =                                      |     | <b>0.0668</b> |          |
| P{PRE_MONEY_VAL(OVERFUNDED==0) ><br>PRE_MONEY_VAL(OVERFUNDED==1)} =  |     |               | 0.397    |

Table 43 - Wilcoxon-Mann-Whitney U test for pre-money valuations between overfunded and non-overfunded campaigns  
(Author's personal elaboration)

Consistently to what expected, in this circumstance results obtained from the test seemed to moderately support the tested assumption. Indeed, as displayed in Table 43, the test outcomes allowed to reject the null hypotheses at a significance level of  $\alpha = 0.10$  (p-value = 0.0668). In conclusion this last analysis, jointly with the probability estimated by the test ( $P = 1 - 0.397 = 0.603$ ), leaves rooms to assess that overfunded campaigns are likely to have higher pre-money valuations than non-overfunded ones.

### **Obtained findings**

The analysis performed in this last section was aimed, as anticipated, at examining different values assumed by certain variables when comparing specific subsets of the ECF campaigns sample. Precisely, the first comparison has been made between funded and unfunded deals, whilst the second concerned overfunded and non-overfunded campaigns.

With respect to obtained results, two variables, namely the age of proponent team and the minimum accepted pledge, did not show significantly different behaviors in none of the two comparisons.

On the other side though, presentation and network scores seemed to lie on relevantly different levels when comparing both funded deals whit unfunded ones and overfunded campaigns with non-overfunded ones; with the presentation score being estimated as relevantly



greater for highly successful ones. This last variable takes into account dimensions which demonstrated to be essential in pursuing funding through ECF, such as photos, videos, campaigns' updates, project descriptions and presence of press material; obtained results are hence in line with the ones proposed by Block et al. (2016) and Courtney et al. (2017), which argued the importance of such elements in the Crowdfunding industry.

As for the last two analyzed dimensions, they provided even more particular insights; while the human capital score seemed to assume higher values only when comparing funded and unfunded campaigns, pre-money valuations have shown to largely differ when comparing overfunded campaigns with respect to the others.

In conclusion, conducted researches seem suggesting that funded campaigns tend to be characterized by higher scores in terms of human capital, network and campaign presentation; with these last two dimensions that demonstrated to be pivotal aspects to care about if aiming to succeed in Equity Crowdfunding. As for overfunded campaigns hence, apart for the maintained significance of differences in network and presentation scores, human capital score did not appear to assume greater values as expected, while instead, pre-money valuation appeared to be higher with respect to the one of non-overfunded deals.



## CONCLUSIONS

Despite being the first European country to implement a legislative framework for the equity-based Crowdfunding, Italy seems still struggling in exploiting this powerful tool at best. Although encouraging figures have been recorded in the last few years, a small number of platforms is currently operating in the Italian Equity Crowdfunding (ECF) industry, thus suggesting that there is still a lot of work to be done if aiming at stimulating Italian ventures to offer their ownership stakes in exchange for individuals' equity subscriptions. In this respect, several improvements appear to be necessary, and even if the phenomenon seems ready to take-off, several advices proposed by the main ECF industry players over the last few years have not been implemented yet. It is the case, for instance, of the reduction of the role played by financial institutions in the funding mechanism, which still seems to represent a barrier rather than a protection for the investor, and of the introduction of new payment methods aimed at allowing individuals to easily perform the desired investment (Miglietta, Parisi 2015).

Although this dissertation tries to analyse Italian Equity Crowdfunding at best, there is still the necessity to observe that proposed results could depend on certain limitations. First of all, both platforms and campaigns data showed that the most interesting relationships to be examined were non-linear ones, thus foreclosing the utilization of a linear regression model. In this sense, further studies based on non-linear regression models might be performed, with the objective of valuating the influence of specific dimensions on the amount of funding collected and on the rate of success obtained. Additionally, Italian ECF market is characterized by a small quantity of campaigns and an even more reduced number of active platforms; in this respect, results must be intended as influenced by this low numerosness which currently characterizes the analysed environment.

All things considered, this thesis aims at providing a valuable contribution in the field of Italian Equity Crowdfunding, which is currently experiencing its most successful period and consequently is being characterized by continuous updates in recorded volumes; symptomatically, the amount of equity subscribed in the first nine months of 2017 has already overcome the whole subscriptions obtained since the first deal has been hosted in 2014. The main research areas that have been covered consist in the platforms' ecosystem and the whole Italian ECF campaigns launched until September 2017; for both of them descriptive and statistical analyses have been conducted, aiming at representing in the most effective way the current status of play.

For what concerns Italian ECF platforms, the data highlighted that the majority of them is located in Northern Italy, which actually represents the area with the highest contribution in terms of total amount of funding subscribed. As for the enrolments in the dedicated Register of CONSOB, 2014 and 2015 were the years in which the highest number of applications has been performed, namely 17 portals out of 23. With respect to the amount of hosted campaigns hence, the most platforms showed to have proposed the highest number of deals in 2017, which in some cases accounted for even more than the 50% of the total activities performed since platforms started operating. Even if the number of successful deals for each portal tends to follow the quantity of campaigns hosted, it is not the same for the amount of funds subscribed; in fact, results have shown how some platforms which raised considerable amounts of funding were not among the ones with the highest number of hosted deals. An additional point of view hence, regarded the sectors each platform has dealt with; on the point, certain industries such as ICT, Green Economy and Social/Sharing services seemed to be covered by quite all the examined platforms.

Being Equity Crowdfunding an online-based phenomenon, another part of the analysis regarded the assessment of the network on which platforms could rely on, in order to attract the highest possible fraction of potential investors. Even if the examinations on the quality of the disclosure about campaigns details provided positive insights for quite all the portals, when considering the social network presence, several of them showed the lack of sufficient standards which seem to be necessary if willing to succeed in this specific funding market.

In conclusion, quite all results obtained from the conducted descriptive researches turned out to highlight that there exists a group of platforms which operate at higher levels with respect to the others in terms of campaigns hosted, sectors involved, raised funds and networks dimension. In this respect, a Cluster analysis has been performed, with the aim of ascertaining if the Italian platforms' ecosystem could be clearly segmented in distinct groups. The analysis provided a positive answer, thus outlining a top-performer cluster of platforms which is formed, as expected, by Mamacrowd, Starsup and Crowdfundme.

The last question which has been addressed with respect to Italian ECF platforms regarded the possibility that their performances could have been different if grouping portals for their provenance area, thus implying the existence of a certain "geographical effect". To this purpose, platforms have been grouped in North and Centre/South located, and then their amounts of pledged funds, quantities of collected pledges and success rates have been tested. The whole obtained results agreed in strongly rejecting the possibility of the existence of significant performance differences based on platforms' location areas. Actually, according to the existing literature, platforms represent a real innovative tool because they are suitable to

exploit their online-based nature to overcome geography-related obstacles, thus allowing individuals from all over the world to make a contribution just having access to the Internet.

After having deepened platforms' environment, the research has then moved to Italian Equity Crowdfunding campaigns. Even in this case some descriptive insights have been observed, with the most evident trend which was represented by the consistent growth in launched campaigns and raised funds for 2017. The examined campaigns were 122, 66 of which have been successfully financed (46 even overfunded), while 44 did not reach the funding and other 12 were still on-board at the ending of the data collection process. Observed insights showed how the amount of successful deals for each year has risen more than proportionately than proposed ones, suggesting that both Italian platforms and proponent ventures have learned how to manage this powerful tool over time, moving from a 38% of success rate in 2014 to quite a 60% in 2016, with 2017 that is going to overtake the previous year given its still greater number of successes.

The total amount of equity subscribed in the Italian ECF market amounts at more than € 15.6 millions, with each one of the last three years that has doubled its predecessor. The geographical distribution of ventures which have launched their own campaign clearly showed how even in this circumstance the Northern area of the country is represented by a higher amount of deals (73), followed by the Centre (28) and finally by South and islands (21). With respect to collected subscriptions hence, what was happened with platforms did not occur in this circumstance; indeed, regions in which the most proponent ventures are located did not rank in the first positions of subscriptions leaderboard. As for the previous research area, a sectorial assessment has been conducted, providing that the most funded sectors involve ICT, Professional and Social/Sharing Services and Green Economy, which is first for collected funds (24%) even if it ranks just fourth for hosted campaigns.

Sliding to more financial insights, the average campaign subscription turned out to be € 273k, while the median value was found in € 200k. With respect to proponent companies' choices hence, they seemed to agree in setting funding targets that lie on similar levels of minimum offered amounts, and in fixing far larger maximum boundaries; in such a way, rooms for consistent overfunding are left but without compromising the reaching of campaign's success. Indeed, the trend followed by funding targets showed that they have relevantly decreased over the last three years, jointly with the stake of equity offered, whilst the minimum accepted pledge is quite doubled over the last 12 months, reaching an average value of € 1,120. In this regard, companies seem increasing the level of financial effort required to investors,

which anyway showed to be driven by ventures' attributes other than the minimum required investment.

Focusing on ventures which have approached ECF in Italy, a peculiar insight was provided by trends followed by their pre-money valuations and pre-offer capitalizations; indeed, it was possible to observe that while in 2015 ventures which have chosen ECF for their projects were not so much capitalized (average of € 50k) but had a high average pre-money valuation (around € 5 millions), proponent businesses for 2016 became instead much more capitalized (average was about € 200k) but with quite lower pre-money valuations (average was around € 1.5 millions), with the current year trend that seems to be inverted again.

Moreover, proponent teams' composition showed that they are formed by a huge fraction of 30-50 years old members, with these last that account for quite 20%; most of the teams' components own a Master Degree (54%) while quite the 10% has achieved a PhD. For what concerns their professional and entrepreneurial backgrounds, 73% of members is part of a team that supports a project belonging to a sector in which he has previous experience, while just the 38% of teams' components has gained previous entrepreneurial expertise.

For what concerns the statistical analysis, I decided to make a comparison between funded and unfunded deals in order to evaluate if they significantly differ with respect to a selected set of variables that could represent potential signals to investors. After the first comparison, I repeated the examination comparing overfunded campaigns with non-overfunded ones, thus enquiring if previous results still hold and if any different feedback was provided.

Obtained outcomes showed that the minimum accepted pledge and the average age of proponent teams are not significantly different in any of the two scenarios, thus suggesting that investors probably tend to value other signals provided by ventures. As for what concerns the increasing relevance of campaigns' presentation and the power of their networks, they turned out to be pivotal in differentiating both funded and overfunded campaigns from the other. In conclusion, particular findings regarded teams' human capital and ventures' pre-money valuation; while the former proved to be higher just when comparing successful campaigns with the others, the latter seems to be relevantly different in the case of overfunded deals, thus suggesting that individuals tend to heavily invest in ventures characterized by high valuations.

All things considered, Italian Equity Crowdfunding has shown to be on the right path for what concerns the high growth of recorded performances, even if it seems necessary to raise awareness among companies, above all medium-sized ones, about the great potential of this financing tool. Moreover, platforms and regulators must continue in shaping a proper environment in which the crowd could continue in playing its pivotal role in an always easier way.

## APPENDIX

### APPENDIX 1 – ITALIAN ECF PLATFORMS

The data about examined platforms comes from the dedicated CONSOB Register, accessible at <http://www.consob.it/web/area-pubblica/sezione-ordinaria>, that has been accessed for the last time on September 13, 2017.

| Platform       | Platform Incorporation Name          | Website Address   | Registered Office                                      | CONSOB Registration Act | N° of Enrolment | Section of Consob Register |
|----------------|--------------------------------------|---|--|-------------------------|-----------------|----------------------------|
| STARSUP        | STARS UP SRL                         | <a href="http://www.starsup.it/">http://www.starsup.it/</a>                           | Via G. Marradi, 14 - Livorno                           | n. 18681 del 18/10/2013 | 1               | Ordinary Section           |
| ASSITECA CROWD | ASSITECA CROWD SRL                   | <a href="http://www.assitecacrowd.com/crowd/">http://www.assitecacrowd.com/crowd/</a> | Via Luigi Majno, 18 - Milano                           | n. 18809 del 26/02/2014 | 2               | Ordinary Section           |
| SMARTHUB       | SMARTHUB                             | <a href="http://www.smarthub.eu/">http://www.smarthub.eu/</a>                         | Via Ciovassino, 3A - Milano                            | n. 18854 del 09/04/2014 | 3               | Closed Platform            |
| TIP.VENTURES   | THE ING PROJECT S.R.L.               | <a href="http://www.equity.tip.ventures/">http://www.equity.tip.ventures/</a>         | Borgo Pietro Wuhrer, 123 - Brescia                     | n. 18946 del 18/06/2014 | 4               | Ordinary Section           |
| NEXT EQUITY    | NEXT EQUITY CROWDFUNDING MARCHE SRL  | <a href="http://www.nextequity.it/">http://www.nextequity.it/</a>                     | Via Silvio Pellico, 8 - Civitanova Marche              | n. 18977 del 16/07/2014 | 5               | Ordinary Section           |
| CROWDFUNDME    | CROWDFUNDME SRL                      | <a href="http://www.crowdfundme.it/">http://www.crowdfundme.it/</a>                   | Via Legnano, 28 - Milano                               | n. 18995 del 30/07/2014 | 6               | Ordinary Section           |
| MUUM LAB       | MUUM LAB S.R.L.                      | <a href="http://www.muumlab.com/">http://www.muumlab.com/</a>                         | Via Patrioti Molfettesi Del Risorgimento, 8 - Molfetta | n. 19003 del 06/08/2014 | 7               | Ordinary Section           |
| MAMACROWD      | SIAMO SOCI SRL                       | <a href="http://www.mamacrowd.com/">http://www.mamacrowd.com/</a>                     | Via Timavo, 34 - Milano                                | n. 19002 del 06/08/2014 | 8               | Ordinary Section           |
| FUNDERA        | FUNDERA SRL                          | <a href="http://www.fundera.it/">http://www.fundera.it/</a>                           | Via Ugo Bassi, 7 - Milano                              | n. 19021 del 10/09/2014 | 9               | Ordinary Section           |
| ECOMILL        | ECOMILL SRL                          | <a href="http://www.ecomill.it/">http://www.ecomill.it/</a>                           | Via Stradivari, 3 - Milano                             | n. 19059 del 29/10/2014 | 10              | Ordinary Section           |
| WEARESTARTING  | WEARESTARTING SRL                    | <a href="http://www.wearestarting.it/">http://www.wearestarting.it/</a>               | Via Giorgio E Guido Paglia, 21/B - Bergamo             | n. 19082 del 16/12/2014 | 11              | Ordinary Section           |
| EQUINVEST      | EQUINVEST SRL                        | <a href="http://www.equinvest.it/">http://www.equinvest.it/</a>                       | Piazza Del Popolo, 3 - Roma                            | n. 19102 del 14/01/2015 | 12              | Ordinary Section           |
| INVESTI-RE     | BALDI FINANCE S.P.A.                 | <a href="http://www.investi-re.it/">http://www.investi-re.it/</a>                     | Via San Damiano, 9 - Milano                            | n. 19112 del 28/01/2015 | 13              | Ordinary Section           |
| STARTZAI       | STARTZAI                             | <a href="http://www.startzai.com/">http://www.startzai.com/</a>                       | Via Primo Maggio, 156 - Ancona                         | n. 19117 del 25/02/2015 | 14              | Closed Platform            |
| SYMBID         | SYMBID ITALIA                        | <a href="https://www.symbid.com/">https://www.symbid.com/</a>                         | Via Copernico, 38 - Milano                             | n. 19275 del 29/07/2015 | 15              | Closed Platform            |
| EQUITYSTARTUP  | EQUITYSTARTUP                        | <a href="http://equitystartup.it/">http://equitystartup.it/</a>                       | Via Massena, 20 - Torino                               | n. 19321 del 26/08/2015 | 16              | Closed Platform            |
| CROWD4CAPITAL  | ROMA VENTURE CONSULTING SRL          | <a href="http://www.crowd4capital.it/">http://www.crowd4capital.it/</a>               | Via Parigi, 11 - Roma                                  | n. 19403 del 08/10/2015 | 17              | Ordinary Section           |
| OPSTART        | OPSTART SRL                          | <a href="http://www.opstart.it/">http://www.opstart.it/</a>                           | Via Divisione Julia, 5 - Bergamo                       | n. 19441 del 11/11/2015 | 18              | Ordinary Section           |
| COFYP          | COFYP SRL                            | <a href="http://www.cofyp.com/">http://www.cofyp.com/</a>                             | Via Ghino Valenti, 51 - Macerata                       | n. 19565 del 14/04/2016 | 19              | Ordinary Section           |
| CLUBDEAL       | CLUBDEAL SRL                         | <a href="http://www.clubdealonline.com/">http://www.clubdealonline.com/</a>           | Via Vittor Pisani, 19 - Milano                         | n. 19906 del 08/03/2017 | 20              | Ordinary Section           |
| WALLIANCE      | WALLIANCE SRL                        | <a href="http://www.walliance.eu/">http://www.walliance.eu/</a>                       | Viale Della Costituzione, 16 -                         | n. 19939 del 30/03/2017 | 21              | Ordinary Section           |
| EUROPACROWD    | EUROPA HD SRL                        | <a href="http://www.europacrowd.it/">http://www.europacrowd.it/</a>                   | Vicolo Di Prima Porta, 1 - Roma                        | n. 20026 del 07/06/2017 | 22              | Ordinary Section           |
| UNICASEED      | UNICASIM SOCIETA' DI INTERMEDIAZIONE | <a href="http://www.unicaseed.it/">http://www.unicaseed.it/</a>                       | Via Bartolomeo Bosco, 15 - Genova                      | n. 12703 del 08/08/2000 | 182             | Special Section            |

## APPENDIX 2 – ITALIAN ECF CAMPAIGNS

The data about examined campaigns comes from platforms' websites, that have been accessed for the last time on September 13, 2017.

| Campaign                   | Brief   | Company Name                                 | Company/Project Website   |
|----------------------------|---|--|---|
| ABILE                      | Integrated platform for logistic implementations                        | Umuve S.R.L.                                 | <a href="http://www.abile.it">http://www.abile.it</a>   |
| AMBIENS VR                 | Virtual reality platform for architectural design on smartphones        | Ambiens VR S.R.L.                            | <a href="http://www.ambiensvr.com">www.ambiensvr.com</a>  |
| ANDERSWINST                | Offer of digital tools to improve kids learning                         | Anderswinst Italia S.R.L.                    | <a href="http://anderswinst.com/">http://anderswinst.com/</a>                                     |
| BABAIOLA                   | Social platform for LGBT travellers                                     | Babaiola S.R.L.                              | <a href="https://babaiola.com/it">https://babaiola.com/it</a>                                     |
| BIO FATTORIE TOSCANE       | Innovative bio-foods production   | Società Agricola Bio Fattorie Toscane S.R.L. | <a href="http://www.biofattorietoscane.it/">http://www.biofattorietoscane.it/</a>                 |
| BIOENUTRA                  | Plant development for obtaining polyphenols from olives and derivatives | Bioenutra S.R.L.                             | <a href="http://www.bioenutra.com/it/">http://www.bioenutra.com/it/</a>                           |
| BIOERG                     | New low-cost way to produce Dextran                                     | BIO-E.R.G. S.R.L.                            | <a href="http://www.bioerg.it/">http://www.bioerg.it/</a>   |
| BLOOVERY                   | Service for sending flowers and messages                                | Blooverly S.R.L.                             | <a href="http://www.blooverly.com">www.blooverly.com</a>  |
| BORSINO RIFIUTI            | Marketplace for earning fom garbage disposal                            | Taebioenergy S.R.L.                          | <a href="http://www.borsinorifiuti.com">www.borsinorifiuti.com</a>                                |
| CANTIERE SAVONA            | Design and production of thermo-solar boats                             | Cantiere Savona S.R.L.                       | <a href="http://www.cantieresavona.it/">http://www.cantieresavona.it/</a>                         |
| CARTINA                    | Paper made shoes production   | Cartina S.R.L.                               | <a href="http://www.cartinapaperidea.com/">http://www.cartinapaperidea.com/</a>                   |
| CLEANBNB                   | Platform that provide help to AIRBNB renters with the main issues       | Cleanbnb S.R.L.                              | <a href="http://www.cleanbnb.net/">http://www.cleanbnb.net/</a>                                   |
| CLUB ITALIA INVESTIMENTI 2 | Startups Investment Vehicle   | Club Italia Investimenti 2 S.P.A.            | <a href="http://www.cii2.com">www.cii2.com</a>  |
| CROWDBOOKS                 | Platform for crowdfunding the production of photobooks                  | N2O S.R.L.                                   | <a href="https://crowdbooks.com/">https://crowdbooks.com/</a>                                     |
| CROWDFUNDME                | Equity Crowdfunding platform  | Corwdfundme S.R.L.                           | <a href="https://www.crowdfundme.it/">https://www.crowdfundme.it/</a>                             |
| CUBEPIT                    | Sharing platform for 3D design contents                                 | Cubepit S.R.L.                               | <a href="http://www.cubepit.com/">http://www.cubepit.com/</a>                                     |
| CYNNY - 1                  | App for video sharing and related professional services                 | Cynny S.P.A.                                 | <a href="https://www.cynny.com/">https://www.cynny.com/</a>                                       |
| CYNNY - 2                  | App for video sharing and related professional services                 | Cynny S.P.A.                                 | <a href="https://www.cynny.com/">https://www.cynny.com/</a>                                       |
| CYNNY - 3                  | App for video sharing and related professional services                 | Cynny S.P.A.                                 | <a href="https://www.cynny.com/">https://www.cynny.com/</a>                                       |
| DIAMANTECH                 | Management solution for investment firms                                | Diaman Tech S.R.L.                           | <a href="http://diamantech.net/">http://diamantech.net/</a>                                       |
| DIFERENTE                  | Production system for non alcoholic beverages                           | Nano S.R.L.                                  | <a href="http://zeroalcoholdrinks.com/">http://zeroalcoholdrinks.com/</a>                         |
| DIFERENTE - 2              | Production system for non alcoholic beverages                           | Nano S.R.L.                                  | <a href="http://zeroalcoholdrinks.com/">http://zeroalcoholdrinks.com/</a>                         |
| DIVE CIRCLE                | Online travel agency for snorkelers' community                          | Divecircle S.R.L.                            | <a href="http://divecircle.com/it/">http://divecircle.com/it/</a>                                 |
| DROPTO                     | Sharing network for geolocalized augmented reality contents             | Dropto S.R.L.                                | <a href="https://www.dropapp.it/index_desktop.html">https://www.dropapp.it/index_desktop.html</a> |
| EASYCALL                   | Management system for call centers                                      | Watson S.R.L.                                | <a href="http://www.easycallcloud.com/it/">http://www.easycallcloud.com/it/</a>                   |
| EGO                        | Innovative device for file storage and protection                       | Ego S.R.L.                                   | <a href="http://www.egoemotion.com/">http://www.egoemotion.com/</a>                               |
| ENKI STOVE                 | Systems for pyrolysis biomass combustion                                | Enki Stove S.R.L.                            | <a href="http://www.enkistove.com">www.enkistove.com</a>  |
| ERMES CYBER SECURITY       | Anti Web-trackers service   | Ermes Cyber Security S.R.L.                  | <a href="https://www.ermessecurity.com">https://www.ermessecurity.com</a>                         |
| FACE4JOB                   | Online platform for job market  | Face4job S.R.L.                              | <a href="http://www.face4job.com">www.face4job.com</a>  |
| FANNABEE                   | Web platform for music fans and collectors                              | Fannabee S.R.L.                              | <a href="https://www.fannabee.com/">https://www.fannabee.com/</a>                                 |
| FELFIL                     | Extruder for making accessible 3D printing                              | Felfil S.R.L.                                | <a href="http://felfil.com/it/">felfil.com/it/</a>  |
| FIGHT EAT CLUB             | Online portal for cooking challenges between users with a dedicated App | BORASS S.R.L.                                | <a href="https://www.fighteatclub.com/">https://www.fighteatclub.com/</a>                         |
| FILECLIC                   | Innovative file search engine   | Nexapp S.R.L.                                | <a href="http://www.nexapp.it/">http://www.nexapp.it/</a>   |
| FIND MY LOST               | Platform that permits to find your lost object wherever you are         | Findmylost S.R.L.                            | <a href="https://www.findmylost.it/">https://www.findmylost.it/</a>                               |
| FOREVER BAMBU 8            | Agricultural firm that realizes bamboo forests                          | Forever Bambù 8 Società Agricola S.R.L.      | <a href="http://www.foreverbambu.it/">http://www.foreverbambu.it/</a>                             |
| GLASS TO POWER             | Photovoltaic transparent windows production                             | Glass To Power S.R.L.                        | <a href="http://www.glasstopower.com/g2p/">http://www.glasstopower.com/g2p/</a>                   |
| GLASSUP                    | Augmented reality glasses   | Glassup S.R.L.                               | <a href="http://www.glassup.com/it/company/">http://www.glassup.com/it/company/</a>               |
| GOBIMBO                    | Social platform dedicated to children activities and families           | Gobimbo S.R.L.                               | <a href="http://www.gobimbo.it/">http://www.gobimbo.it/</a>                                       |
| GRAPHENE-XT                | Nanotechnologies for graphene production                                | Graphene-XT S.R.L.                           | <a href="http://www.graphene-xt.com">www.graphene-xt.com</a>                                      |
| GREEN ENERGY STORAGE       | Innovative system for renewable energy creation                         | Green Energy Storage S.R.L.                  | <a href="http://www.greenenergystorage.eu/">http://www.greenenergystorage.eu/</a>                 |



|                          |  |                                   |   |
|--------------------------|--|-----------------------------------|---|
| GROMIA                   | Property management service for renters  | Gromia S.R.L.                     | <a href="https://www.gromia.com/it">https://www.gromia.com/it</a>                               |
| HOME 3D                  | Cloud platform for managing interactive 3D projects  | 3Dsign.Band S.R.L.                | <a href="http://planimetrie3d.com">http://planimetrie3d.com</a>                                 |
| HMY BAG                  | Production and retail system for bags and accessories  | Hymy Group S.R.L.                 | <a href="http://www.hymybag.com">www.hymybag.com</a>  |
| HYRO                     | Geolocalization system for goods and people  | Hyro S.R.L.                       | <a href="http://www.hyrosrl.it">www.hyrosrl.it</a>  |
| ICAREMANAGER             | Management software for "Hair and Beauty" shops  | Rendewu S.R.L.                    | <a href="http://www.rendewu.it/">http://www.rendewu.it/</a>                                     |
| INDEX                    | Local to global marketplace for video contents and TV programs production                              | Impact Emedia S.R.L.              | <a href="http://www.impact-edia.com">www.impact-edia.com</a>                                    |
| INDIGENIO                | Trip planning platform   | Indigenio S.R.L.                  | <a href="http://www.indigenio.com">http://www.indigenio.com</a>                                 |
| INFINITYHUB              | Managerial, financial and commercial accelerator for cleantech businesses                              | Infinityhyb S.P.A.                | <a href="http://www.infinityhub.it/">http://www.infinityhub.it/</a>                             |
| INOXSAIL                 | New fin concept for innovative boats   | Inoxsail S.R.L.                   | <a href="http://www.inoxsail.com">www.inoxsail.com</a>  |
| INSONO                   | Near Infra-Red medical devices   | Insono S.R.L.                     | <a href="http://www.insono.it/">http://www.insono.it/</a>                                       |
| IT-TIDY                  | XML software for improving Excel data management   | IT-Change S.R.L.                  | <a href="http://www.it-tidy.com/">http://www.it-tidy.com/</a>                                   |
| KEISDATA                 | Corporate risk management software   | Keisdata S.R.L.                   | <a href="http://www.keisdata.it/">http://www.keisdata.it/</a>                                   |
| KID PASS                 | Family-friendly services platform  | Kid Pass S.R.L.                   | <a href="http://www.kidpass.it/">http://www.kidpass.it/</a>                                     |
| KIUNSYS                  | Smart systems for urban mobility   | Kiunsys S.R.L.                    | <a href="http://www.kiunsys.com">www.kiunsys.com</a>  |
| KJARO                    | Anti-drops cover for umbrellas   | Kjaro S.R.L.                      | <a href="http://www.kjaro.it/">http://www.kjaro.it/</a>   |
| LEAN WIRE                | Online service to develop home electric plants   | Lean Wire S.R.L.                  | <a href="https://www.leanwire.net/">https://www.leanwire.net/</a>                               |
| LIBEROS                  | Network for book-culture diffusion   | Isterre S.R.L.                    | <a href="http://www.isterre.it/">http://www.isterre.it/</a>                                     |
| LINFA CROWD 2.0          | Marketplace for cultural projects  | Linfa Crowd 2.0 S.R.L.            | <a href="http://www.linfacrowd.com">http://www.linfacrowd.com</a>                               |
| LITTLESEA                | Technology that automatically creates videos from non structured data                                  | Little Sea S.R.L.                 | <a href="https://www.littleseavideo.com/">https://www.littleseavideo.com/</a>                   |
| MAXTRINO                 | Software for automated billing recording   | Maxtrino S.R.L.                   | <a href="http://www.maxtrino.com">www.maxtrino.com</a>  |
| ME SCOOTER               | Electric moto-vehicle  | Me Group S.R.L.                   | <a href="https://scooterelettrico.me/">https://scooterelettrico.me/</a>                         |
| MELIXA                   | Monitoring system for apiculture   | Melixa S.R.L.                     | <a href="http://www.melixa.eu">www.melixa.eu</a>  |
| MENOO                    | App for ordering foods from a network of restaurants   | Digikom S.R.L.                    | <a href="https://www.menoo.it/">https://www.menoo.it/</a>                                       |
| MESSI B                  | Monitoring system for professional athletes players performances                                       | Spaceexe S.R.L.                   | <a href="http://www.spaceexe.com/">http://www.spaceexe.com/</a>                                 |
| MY COOKING BOX           | Service that permits to get a box with all the ingredients necessary to cook an Italian meal           | Ricetta Italiana S.R.L.           | <a href="http://www.mycookingbox.it">www.mycookingbox.it</a>                                    |
| MYCHEFFY                 | App for booking chef working at your own home  | Mycheffy S.R.L.                   | <a href="http://www.mycheffy.com">www.mycheffy.com</a>  |
| NANOSILICAL              | Nanomed devices for specific medical treatments  | Nanosilical Devices S.R.L.        | <a href="http://www.nanosilicaldevices.com/">http://www.nanosilicaldevices.com/</a>             |
| NIURION                  | Innovative device for rehabilitation   | P2R S.R.L.                        | <a href="http://www.playto rehab.com/">http://www.playto rehab.com/</a>                         |
| NOVA SOMOR               | Solar energy powered gardening pump  | Nova Somor S.R.L.                 | <a href="http://www.novasomor.it/">http://www.novasomor.it/</a>                                 |
| NOXAMET                  | New kind of pharma-production  | Noxamet S.R.L.                    | <a href="http://http://www.noxamet.com/it/">http://http://www.noxamet.com/it/</a>               |
| OREEGANO                 | Food-related social network  | Oreegano S.R.L.                   | <a href="https://www.oreegano.com/">https://www.oreegano.com/</a>                               |
| ORWELL - VIRTUAL REALITY | Development of virtual and mixed reality applications  | Orwell S.R.L.                     | <a href="http://www.orwell-vr.com/">http://www.orwell-vr.com/</a>                               |
| PALADIN                  | Mobile app for rent and borrow objects in your town  | Paladin True S.R.L.               | <a href="https://paladintrue.com/it/">https://paladintrue.com/it/</a>                           |
| PAPEM                    | Fashion purchases discounts app  | Papem S.R.L.                      | <a href="https://www.papem.it/">https://www.papem.it/</a>                                       |
| PARTERRE                 | Services for audience relationship management through mobile apps.                                     | Parterre S.R.L.                   | <a href="http://parterre.eu/">http://parterre.eu/</a>   |
| PAULOWNIA                | Plantation for wood plants   | Paulownia Social Project S.R.L.   | <a href="http://www.paulowniasocialproject.it/">www.paulowniasocialproject.it/</a>              |
| PERFRUTTO                | Forecasting system for fruit harvests  | KK-Horticultural Knowledge S.R.L. | <a href="http://www.hkconsulting.it">www.hkconsulting.it</a>                                    |
| PETALO                   | Bottles recycling system based on social platform  | Petalo S.R.L.                     | <a href="http://www.puntipetalo.it">www.puntipetalo.it</a>                                      |
| PHARMAGO                 | Production of anti-cancer drugs  | Pharmago S.R.L.                   | <a href="http://www.pharma-go.it">www.pharma-go.it</a>  |
| PRICEBOX                 | C2B marketplace that allows customers to make a purchase binding proposal that the seller could accept | Pricebox S.R.L.                   | <a href="https://pricebox.it/">https://pricebox.it/</a>   |
| PRIME ADVISORY NETWORK   | Professional network for legal and financial advisors  | Primary System Research S.P.A.    | <a href="https://www.primeadvisorynetwork.com/it/">https://www.primeadvisorynetwork.com/it/</a> |
| PRONTOVET24              | Door-to-door veterinary service  | Brainseeding S.R.L.               | <a href="http://www.prontovet24.com/">http://www.prontovet24.com/</a>                           |

|                        |  |                           |   |
|------------------------|--|---------------------------|---|
| PROVITA - BIOGENERA    | Research and development for anti-cancer pharma  | Provita S.R.L.            | <a href="http://www.biogenera.com/?lang=it">http://www.biogenera.com/?lang=it</a>   |
| QAPLA'                 | System for shipping management of businesses, even post-shipment                                     | Qaplà S.R.L.              | <a href="https://www.qapla.it/">https://www.qapla.it/</a>                           |
| RAFT                   | Platform that allows tennis players to create tournaments and challenge themselves                   | RAFT S.R.L.               | <a href="http://www.raftennis.it/">http://www.raftennis.it/</a>                     |
| RE-MONEY               | Customer fidelization system   | QUBI R&D S.R.L.           | <a href="http://www.qubired.com/">http://www.qubired.com/</a>                       |
| REVOLUCE               | Innovative system of rechargeable electric energy  | Stantup S.R.L.            | <a href="http://www.revoluce.it">www.revoluce.it</a>                                |
| SAFEWAY                | Innovative helmet  | Safeway Helmets S.R.L.    | <a href="http://www.safeway-helmets.com/">http://www.safeway-helmets.com/</a>       |
| SALTACASSA             | Smartphone app that allows to pay online and to skip the queue                                       | Fullover S.R.L.           | <a href="http://www.fullover.com">www.fullover.com</a>                              |
| SCUTER                 | Electric moto-vehicle for urban trips  | Scuter S.R.L.             | <a href="http://www.scuter.co">scuter.co</a>  |
| SHARE!                 | Content sharing platform   | Gdverse S.R.L.            | <a href="http://share.gdverse.com/">http://share.gdverse.com/</a>                   |
| SHAREWOOD              | Marketplace for sport equipment sharing  | Sharewood S.R.L.          | <a href="http://www.sharewood.io/">http://www.sharewood.io/</a>                     |
| SHIBUSE                | Multishop dedicated to eco-sustainable weddings  | Shibuse S.R.L.            | <a href="http://www.shibuse.it">www.shibuse.it</a>                                  |
| SHIN SOFTWARE          | Interactive platform for creating 3D renderings  | Shin Software S.R.L.      | <a href="http://www.shinsoftware.com">www.shinsoftware.com</a>                      |
| SKYACCOUNTING          | Cloud sharing software by which accountants and the client could share documentation and other items | Skymeeeting S.P.A.        | <a href="http://www.skyaccounting.net/">http://www.skyaccounting.net/</a>           |
| SMILING                | Web platform for video news sharing  | Smiling S.R.L.            | <a href="http://www.smiling.video/">http://www.smiling.video/</a>                   |
| SOLOSALE               | Dietistic integrator against diabetes  | Solosale S.R.L.           | <a href="http://www.solosale.it/">http://www.solosale.it/</a>                       |
| SOUND OF THINGS        | Social network with innovative sound communication tools   | Soundofthings S.R.L.      | <a href="http://www.soundsofthings.com/">http://www.soundsofthings.com/</a>         |
| SWEETHIVE              | Cloud platform for sharing documents and messages and to improve communication inside organizations  | Werea S.R.L.              | <a href="https://sweethive.com/it/">https://sweethive.com/it/</a>                   |
| SYNBIOTEC              | Research and development of probiotics   | Synbiotec S.R.L.          | <a href="http://www.synbiotec.com/">http://www.synbiotec.com/</a>                   |
| TAKE OFF               | Startup accelerator  | Take Off S.R.L.           | <a href="http://www.takeoffstartup.com">www.takeoffstartup.com</a>                  |
| TALKWAY                | Professional Push-to-Talk solution for businesses  | Alea S.R.L.               | <a href="http://www.talkway.it/">http://www.talkway.it/</a>                         |
| TASKHUNTERS            | Platform for university students looking for small tasks abroad                                      | Taskhunters S.R.L.        | <a href="http://www.taskhunters.it/">http://www.taskhunters.it/</a>                 |
| THE DIGITAL BOX        | Innovative integrated system for marketing solutions   | The Digital Box S.P.A.    | <a href="http://www.thedigitalbox.net">www.thedigitalbox.net</a>                    |
| TNOTICE                | Online certified system for registered mails   | Inposte.it S.R.L.         | <a href="http://www.tnotice.com/">http://www.tnotice.com/</a>                       |
| TOC TOC BOX            | Social platform for parcel delivery network  | Opentail S.R.L.           | <a href="http://www.tococbox.com/">http://www.tococbox.com/</a>                     |
| TRAPEZITA              | Financial consultancy platform   | Trapezita S.R.L.          | <a href="http://www.trapezita.it/">http://www.trapezita.it/</a>                     |
| TRENTO - VIA BARBACOVI | Development and building of a residential complex  | Mak Capital S.R.L.        | <a href="http://www.makcostruzioni.it/">http://www.makcostruzioni.it/</a>           |
| TRITON                 | Technology for producing energy from sea waves   | Kiew S.R.L.               | <a href="http://www.kiewit.it/index.php/it/">http://www.kiewit.it/index.php/it/</a> |
| TUPASSI                | Tool for planning appointment and skip queues.   | Miropass S.R.L.           | <a href="https://www.tupassi.it/">https://www.tupassi.it/</a>                       |
| UPSENS                 | Sensors that detect air quality and electromagnetic smog presence                                    | Upsens S.R.L.             | <a href="http://www.upsens.com/">http://www.upsens.com/</a>                         |
| VERANU                 | Innovative tile equipped with an energy-saving system  | Luche S.R.L.              | <a href="http://www.veranu.eu/it/">http://www.veranu.eu/it/</a>                     |
| VERSO                  | Wearable device shaped as a ring that interacts with smartphones and pcs                             | Verso Technologies S.R.L. | <a href="http://getverso.co/">getverso.co/</a>                                      |
| VESTA                  | Innovative stoves production   | Vesta S.R.L.              | <a href="http://www.vestagroup.it/">http://www.vestagroup.it/</a>                   |
| VOX POP                | Platform that allows journalists to remotely interview their community                               | Media Vox Pop S.R.L.      | <a href="http://www.mediavoxpop.com">www.mediavoxpop.com</a>                        |
| WATCHY TALKY           | Social-dating app  | Appside Italy S.R.L.      | <a href="http://www.watchytalky.net/">http://www.watchytalky.net/</a>               |
| WAYONARA               | Travel social commerce platform  | Nextop Italia S.R.L.      | <a href="https://www.wayonara.com/">https://www.wayonara.com/</a>                   |
| WINELIVERY             | E-commerce for wines   | Winelivery S.R.L.         | <a href="http://new.winelivery.com/">http://new.winelivery.com/</a>                 |
| XNEXT                  | X-ray exploitation technology for micro detection  | Xnext S.R.L.              | <a href="http://www.x-next.com/">http://www.x-next.com/</a>                         |
| YAKKYO                 | Service to easify purchases from China for businesses  | Yakkyo S.R.L.             | <a href="https://yakkyo.com/">https://yakkyo.com/</a>                               |
| YOCABE'                | Shops network for fashion brands   | Yocabe' S.R.L.            | <a href="https://www.yocabe.it/">https://www.yocabe.it/</a>                         |
| YOODROOP               | Platform that allows to sell online without warehouses   | Youdroop S.R.L.           | <a href="http://www.youdroop.com">www.youdroop.com</a>                              |

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