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Does Organizational Design Matter? Empirical analysis of the Italian Equity Crowdfunding Market

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Abstract (English)

Equity crowdfunding is a method of raising capital commonly used by startups and early-stage companies relying on a crowd on investors offering company's securities in exchange for financing. After its introduction in Italy in 2012 its penetration keeps growing year after year, demonstrating several advantages for founders and funders.

Despite the growing literature no research has ever studied how the organizational design and the equity crowdfunding process are related, and whether there is any relationship between them. This dissertation moves the first steps into this direction, analyzing a hand collected data tracking the evolution of the organization of 200+ Italian companies which have raised capital through equity crowdfunding between 2014 and 2020.

The results show relationship among the dimensions (organization and capital raise), highlighting how companies structure themselves differently after funding, such as increasing the number of departments and accelerating on hirings, and how dimensions as the number of key management positions relates with the likelihood of attracting venture capitalists' investments. These information should be embedded into founders long term strategies to maximize their growth chances and success rate.

Abstract (Italiano)

Il *equity crowdfunding* è un metodo di raccolta di capitali comunemente utilizzato da startup e aziende in fase di avvio che si basa su una folla di investitori che offrono titoli dell'azienda in cambio di finanziamenti. Dopo l'introduzione in Italia nel 2012, la sua penetrazione continua a crescere di anno in anno, dimostrando numerosi vantaggi per fondatori e finanziatori.

Nonostante la crescente letteratura, nessuna ricerca si è mai focalizzata nell'analizzare come il design organizzativo e il processo di *equity crowdfunding* siano correlati, e se esiste una relazione tra di essi. Questa dissertazione muove i primi passi in questa direzione, analizzando dati raccolti a mano che mappano l'evoluzione dell'organizzazione di oltre 200+ aziende italiane che hanno raccolto capitali attraverso il *equity crowdfunding* tra il 2014 e il 2020.

I risultati mostrano diverse correlazioni tra le due dimensioni (organizzativa e raccolta di capitali), evidenziando come le aziende si strutturano in modo diverso dopo la raccolta di fondi, ad esempio aumentando il numero di dipartimenti e accelerando le assunzioni, e come le dimensioni come il numero di posizioni chiave della gestione sono correlate alla probabilità di attirare investimenti di *venture capitalists*. Tali informazioni dovrebbero essere incorporate dai fondatori nelle strategie di lungo termine per massimizzare le loro possibilità di crescita e di successo.

Executive Summary

Equity crowdfunding (also known as crowd-investing or investment crowdfunding) is a method of raising capital used by startups and early-stage companies which essentially offers the company's securities to a number of potential investors in exchange for financing, entitling each investor to a stake in the company proportional to their investment (Burze Yasar, 2018). Unlike conventional capital-raising methods for early-stage companies, which primarily rely on investments from a small group of professional investors, equity crowdfunding targets a broader group of investors (Mochkabadi, 2020), increasing founders' opportunities to raise capital. Since its launch in Italy in 2012 it has gained constant traction year after year, with more than 1000 placements and almost €430m raised, of which 215 placements and c.a. €150m raised in 2021.

Given its rising popularity equity crowdfunding has caught the attention of numerous researchers, who focused on understanding its dynamics. Up to date most of the publications focus on studying what influences the outcome of the campaign and how entrepreneurs can maximize their chances of success, indeed in most cases the main topic will investigate signaling theories and key success factors, or which is the role played by regulations. Other research streams will focus on the benefits of equity crowdfunding for the company, founders, and investors, on crowd behaviors, and on specific case studies. The common denominator of these researches is that in most cases their scope ends with the raise or slightly later, and none of them ties the equity crowdfunding with changes in the company and its success.

More specifically, no study up to today has ever looked into how equity crowdfunding impacts and relates to the organizational design of a company and how therefore how entrepreneurs should expect their company to change after the raise and how this can impact their future growth and success. Such knowledge would play a crucial role in defining entrepreneurs' strategy, as it would allow them to have a more holistic view of what completing an equity crowdfunding campaign means after the round. The underlying reasoning matches with all other research performed up to date, since there are some best business practices maximizing campaign success, there will be also some organizational choices that will benefit company growth and success the most and some which will not. Indeed, it could be the case that the internal structure of the company may change as a consequence of the capital raise, or that some hires for certain roles can increase chances of future follow-on investments, or that company hiring policy should change after the campaign.

Uncovering these points will therefore be helpful for both entrepreneurs, as they will be able to take more data driven choices, and investors, as they would be able to better select their investments. The overall impact on the whole ecosystem would therefore be positive, as it would further boost equity crowdfunding penetration allowing more people to reap its benefits. More specifically, studies show that equity crowdfunding companies get incremental opportunities for accessing capital, as have the possibility to tap into large networks of individual investors, increase their chances of raising funds beyond a small number of institutional investors or venture capital funds and overcome geographical limitations (Vismara, 2016) and increase diversification to reduce the risk of over-relying on a single lender or source of funding (Di Pietro F., 2021). Furthermore, it seems to facilitate the attraction of subsequent venture capital financing rounds: a successful crowdfunding campaign can signal a company's market appeal and quality, lowering information asymmetries and increasing venture capital

attractiveness (Butticè, et al., 2020) and it can often be more cost-effective compared to traditional forms of financing, as there are typically fewer fees associated with equity crowdfunding and less stringent requirements for financial reporting (Grundy at al., 2016) while allowing entrepreneurs to maintain strategic control of the company and avoid giving away large amounts of equity and control to venture capital and angel investors who are often interested in fast returns and active involvement in the company (Colombo at al., 2010). Switching perspective to the investor benefits instead, it allows for investments in impossible to reach companies through traditional channels, allowing them to create more diversified portfolios and tap into the high-growth potential of early-stage companies (Junge et al. 2021), while decreasing entry barriers with low investment minimums accessible to retail players (Löher, 2016; Burze Yasar, 2021). The possibility of picking a wide range of different companies and build a strongly diversified portfolio hence opens up to the possibility to obtain relevant returns for their investments, with possibly higher capital gains than investing in established players with limited upside potential (Junge et al. 2021). With that said, equity crowdfunding entails some risks as well. Starting with the company perspective, they should be mindful that relying on the crowd, they may miss out on the valuable guidance and expertise provided by professional investors which would have otherwise taken part in the company governance (Vulkan et al., 2016; Arena et al., 2015) if more traditional financing methods would have been chosen, or it could be the case that equity crowdfunding accentuates coordination costs, agency conflicts, and governance issues with potential follow-on investors may limiting access to follow-on capital (Butticè et al., 2020). Investors as well may face a set of limitations and risks, as they are getting onboard in typically early-stage companies which usually do not have an established track record, validated business model, and have limited capabilities to produce high-quality information, making it complex to take informed

decisions for non-professional investors (Podar et al., 2015; Burze Yasar, 2021), which combined with the high illiquidity require proper portfolio structuring (Lukkarinen, Schwienbacher, 2023). Furthermore, studies show that platform members may manipulate campaign dynamics by investing in low-quality offerings, benefiting from the successful round yet manipulating the market (and investors), further increasing the complexity of finding investment worth companies (Meoli, Vismara, 2021).

The other main benefit of uncovering these points would be to increase the knowledge around the role that organizational design plays in companies. Organizational design can be defined as a systematic approach in shaping the structures, systems, and processes within an organization to align them with its goals and objectives. It involves making deliberate and informed decisions about the allocation of resources, distribution of tasks and responsibilities, and flow of communication within the organization. The goal of organizational design is to create an environment that is supportive of effective decision-making, efficient resource utilization, and optimal performance, based on a deep understanding of the organization's needs and challenges, as well as a clear vision for the future (Piva et al., 2022; Arsawan et al., 2022). Effective organizational design requires a continuous and iterative approach, as organizations are constantly evolving (especially true for early-stage companies) and adapting to their changing environment (Reeves, 2011). From a managerial perspective, a proper organizational design will allow the company to operate smoothly, avoiding unwanted blockers and frictions, especially in the early stages in which founders are still involved in almost every process and lean horizontal organizations are the key to work in an agile environment (Dabić et al., 2021). Hence, relevant implications of a well-designed company structure will be to guarantee clarity of roles and accountability, avoiding misunderstandings and clearly highlighting employee responsibilities, and improve communication, stating reporting

relationships and proper stakeholders' identification (Dabić et al., 2021). Studies have identified some key traits that have been found to be relevant in allowing early-stage companies to operate in a context of rapidly changing and uncertain environments, where it is imperative to have an organizational structure that is adaptive, flexible, and capable of supporting growth (Dove, 2001; Teece, 2016). The first one is to have flat hierarchy, with few levels of management and a more horizontal structure that facilitates efficient decision-making, agility, and better alignment between organizational goals and employee actions (Reeves at al., 2011). Secondly is to operate with a lean organizational structure, focused on efficiency and cost-effectiveness, which also enables to adjust their operations in a timely manner without being bogged down by bureaucracy and unnecessary structure (Franco, Landini, 2022), plus leveraging on employees with dual roles, which allows for greater flexibility and a more entrepreneurial culture (Franco, Landini, 2022). Finally, the capability to adapt to changes in external factors, such as the regulatory environment, competition, and technological advancements, leveraging on their efficiency and innovation capabilities (Mahlagha et al., 2020). With that said, in the real world several factors impact and hinder recruiting processes in early-stage companies, which could prevent them from building an ideal organizational structure (Piva et al., 2022). In particular, startups tend to have less resources and brand recognition versus well established players, reducing their overall attractiveness to potential leads, as well as the capability of offering competitive compensation packages (Cardon & Stevens, 2004; Eisenhardt et el., 1990; Williamson et al., 2002), and they tend to inherently more uncertain and riskier than established companies, which can potentially intimidate candidates, making it difficult to attract employees who are looking for stability and security in their careers (Fort et al., 2013). Lastly startups need to (almost always) find the right employees, as a small number of individuals can make a significant impact on the success of the

company and no resources should be wasted. It becomes therefore key to take onboard individuals who share the same vision and values as the company, and who are also willing to work hard and be flexible in a rapidly changing environment, elements which clearly restrict the number of possible fits for the role (Moser et al., 2017; Tumasjan et al., 2011).

Seeing the mixed relevance of both streams, equity crowdfunding and organizational design, this dissertation wants to be the first study to move a step in such unexplored yet relevant roam. Drawing inspiration from a comparable work performed by Hellman and Puri in 2002 called "Venture Capital and the Professionalization of Start-Up Firms – Empirical" in which similar questions have been analyzed but with a different scope, Venture Capital, organizational data for over 200+ Italian companies taking part to equity crowdfunding campaigns has been collected and analyzed. More precisely, the study has been developed starting from a set of 374 distinct companies which completed a capital raise through equity crowdfunding between 2014 and 2020, mapping the evolution of their organizational chart from 2014 until 2022. The data was gathered between September 2022 and December 2022 via LinkedIn, one of the most widely used professional networking platforms, which provides a rich source of information on the evolution of organizational charts in companies. The information collected has singular employee granularity, tracking their roles, starting from most impactful ones CEO, CFO, COO, and other senior management positions to interns, entry and exit (if any) dates, resulting in more than 4000 different people tracked across all the company dataset and a proper mapping of 225 companies. Indeed, out of the 374 initial entities 132 companies (35.29% of total) did not have any LinkedIn profile making impossible to map their organizational chart (most likely the company is either too small or failed) and 19 companies (5.08% of total) reached a too big scale with hundreds of people to map, making it impossible to track.

The first step of the research has focused on studying descriptive statistics using a series of T-test aimed at finding significant statistical differences in means comparing the organizational dimensions on key equity crowdfunding metrics. The equity crowdfunding dimensions analyzed are the total amount of funds raised, turnover and if the company has or has not gone through subsequent Venture Capital funding.

Starting from the size of funds raised, the categorization is based on whether the firm raised an amount of funds higher than the median of all companies' raise. The median has been used in order to minimize distortions coming from outliers (very high or low raises). Looking at firm size and structure, results denote how companies which raised more funds tend to have a larger number of employees and a more structured organizational with wider and richer first lines. This could be due to the fact that collecting higher amounts of capital allowed them to scale faster and hire more resources, but also it could be a consequence of a more structured organization which generates positive signals to the network and contributed to build more successful rounds. The faster growth pace is also confirmed when looking at the delta year over year of people hired, companies with higher raises show greater growth speed. The second interesting difference is that the distribution of employees among different departments changes based on whether the startup raised more or less funds. Companies raising less capital tend to have a higher percentage of employees in corporate functions (i.e., few founders covering all roles), whereas the others tend to have specialized roles covering every need. It is clear that staff positions, design, operations, sales, and business development tend to grow as the company scales, and probably, as more resources arrive and allow for more investments in people. Furthermore, it seems that companies that raise more funds tend to have higher likelihood of enrolling key employees (e.g., Chief Sales Officer) in business development and sales, which again could be an interesting lever for signaling

company goodness externally as could give comfort around the capabilities of the startup to market their product and scale.

Moving on to turnover, the categorization this time was based on whether the firm had a turnover higher than the median of all companies' turnover. The median has been used in order to minimize distortions coming from outliers (very high or low turnover). Firms with higher turnover seem to tend to have a higher number of employees, which may be due to the fact that the marginal benefits of having few more employees in early stages can significantly enhance productivity and generate more volumes. Additionally, these startups tend to have a more dynamic first line with several role changes among their key employees (i.e., promotions or changes to other roles), which could be possibly due to the fact that different skills are needed as the company scales and people within adapts to these changes. Lower turnover firms tend to have a higher tendency to promote new CEOs, possibly due to the company being small and unstable hence the search for new and more fitting lead, and lastly also in this case the organization becomes more complex and balanced across all departments as it scales, developing the proper structure to handle higher volumes.

Lastly the focus is on looking at the differences between firms which completed follow-up venture capital rounds versus those who did not. In this case the whole organization size and complexity seem to show very sharp differences, first one being that the number of employees and key roles is much higher in those companies which performed, after the equity crowdfunding round, a venture capital one. This may be a result of the fact that more structured companies have higher cash burn levels and therefore need substantial cash injections, naturally turning them to VC funds as they scale and the fact that having a well-designed organization with layers, a solid first line, and clarity around roles may entice more Venture Capitals to deploy capital

effectively active as a positive signaling mean. Subsequently, there seems to be also higher turnover in key management in case that the company followed on with a VC round possibly as a result of new company needs and capabilities which may couldn't be matched by early joiners. Company composition among the different departments follows the same pattern as before, positively expanding to a wider range of departments. Lastly, even more than in previous cases and coherently with literature (Hellman, Puri, 2002), there is a very strong difference in the number of key employees belonging to Sales and Business Development departments, as companies which will proceed with VC rounds have more of them.

Following this introductory analysis of the dataset the research expanded the topic leveraging some regression models, specifically Fixed Effect regression and Poisson regression (see Chapter 3.3 for full detail) to take a step further the data understanding. Key organizational dimensions, namely the organization size, the number of key management positions and the delta of people in the company year after year have been regressed over some relevant crowdfunding metrics, total amount raised and future venture capital rounds. The resulting outputs demonstrate in both cases a positive correlation between the selected organizational dimensions with the funds raised and following venture capital rounds. Therefore, starting from the raised funds the results show that companies which have a higher number of employees and more structured organizations tend to successfully complete bigger rounds of equity crowdfunding. Reading this with a positive correlation with the delta YoY of employees it would seem that equity crowdfunding rewards more companies with growth record and allows them to keep on accelerating and investing into their company growing the total number of headcounts in the years to come. Similar are the results on the impact of venture capital rounds, companies seem to be rewarded based

on their organizational structure and growth over time is enhanced thanks to larger capitals available.

Reading behind the lines of the results coming from the regression models and the review of the data distributions, many relevant insights can be drawn already. The organizational structure seems to have an impact on company's funding over time, hence company's success, as early-stage companies really suffer capital availability lack as not collecting on target amounts of money can easily mean default. The organization can affect the size of the round, bigger companies have more chances to raise more capital, but simultaneously impact the future of the company growth, since it would seem that raising this capital boosts upcoming growth as well. With that said, entrepreneurs should learn how to structure their company coherently to the round they want to do, balancing the maximization of the positive effect of having the right number of employees but also a strong first management line capable of comforting investors on next developments. With the completion of the raise, they should follow on stabilizing their key employees while scaling the company and introducing more structure with different departments. This whole initial process should move along with a longer-term plan that aims at successfully banking in the crowdfunding and preparing the company for being venture capitalist attractive. This should mean that proper key management should be selected, matching capabilities and background with VC expectations (i.e., hiring strong Chief Business and Sales Officers), grow the company (and its employees) to interesting sizes to properly engage with them. If these requirements should come into place the positive signaling power of a completed equity crowdfunding round plus a well-balanced organizational design seem to increase companies' chances to keep raising funds and scaling.

Despite conclusions confirm findings and go in the same direction of previous studies it could be argued that unseen variables and relationships are providing misleading results, meaning that there is a degree of endogeneity between the variables rather than causality. This point has been addressed yet without clear answers, therefore should be explored further in future research, as well with more precise databases to work on (see Chapter 5.2 for in-depth explanation).

To conclude, the goal of the research is to be the turning point in literature, opening up to a series of future studies analyzing the relationships between organizational and equity crowdfunding dimensions. Results show that both are connected, with deriving impacts on funds raised, chances to land future venture capital rounds and enrichment in the company organizations, hence that is key for entrepreneurs, founders, and funders to be aware of them to better plan their growth and capital collection strategies, as well as for investors to make more rational investment choices.

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1. Introduction

1.1 Equity Crowdfunding – General Overview

Equity crowdfunding (also known as crowd-investing or investment crowdfunding) is a method of raising capital used by startups and early-stage companies which essentially offers the company's securities to a number of potential investors in exchange for financing, entitling each investor to a stake in the company proportional to their investment (Burze Yasar, 2018). Unlike conventional capital-raising methods for early-stage companies, which primarily rely on investments from a small group of professional investors, equity crowdfunding targets a broader group of investors (Mochkabadi, 2020). Indeed, the main idea behind this process is to raise the required capital by obtaining small contributions from a large number of investors.

Equity crowdfunding is present in the Italy since 2012 providing innovative startups, later on innovative also SMEs, vehicles and funds that invest mainly in these companies, "tourism startups," and since 2017, all SMEs, the opportunity to raise venture capital through web platforms authorized so far by Consob, in derogation of the regulations governing public offerings.

Since its birth, capital attraction and number of listings has been always growing year over year ever totaling until June 30th, 2022, 1,055 placements, of which 799 were successfully closed, 209 were closed without reaching the minimum target (therefore with no funds raised), and 47 were still ongoing (many of which had already reached the minimum threshold for success).

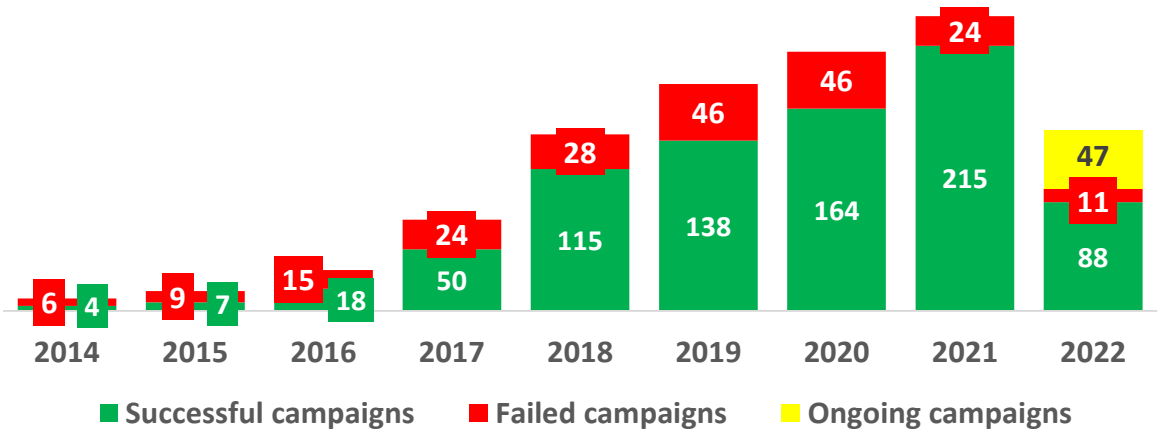

Figure 1.1-1: All 1055 Italia equity crowdfunding campaigns per closing date

However, the first half of 2022 did not perform as well as the same period in 2021 with lower companies successfully completing their campaigns. The explanation can be found in the situation of uncertainty in financial markets, the rising trend of interest rates, and the increase in energy and raw material costs, which have put some economic activities under pressure.

The most successful equity crowdfunding portals in Italy are CrowdFundMe, in first place with 192 campaigns, followed by Mamacrowd (164 campaigns) and BacktoWork with 160. These three platforms have originated practically half of the campaigns and their dominance keeps being confirmed year after year. Founders will carefully choose their reference platform, as they do present some differences - one of the main

distinctive traits which influence the platform decision are fees, which usually come in a combination of transaction, platform, administrations, and others, ranging from c.a. 5% to c.a. 20% of the raised amount (Osservatori Entrepreneurship Finance & Innovation, 2022).

Crowdfunding has several different nuances, as it is possible to launch lending, reward, royalty, donation, and equity crowdfunding campaigns. Going in order, in lending campaigns are comparable to raising debt, as the company owes that amount to the lenders and pays interests as normal debt (Stefanelli et al., 2022), in reward campaigns investors receive non-monetary rewards as payback for their investment, such as early access to a product or service (Leone at. Al, 2023), in royalty model the reward is of monetary nature, consisting in profit or revenues sharing which will be generated from the project, without any ownership on the venture or capital gain (Burze Yasar, 2021). Lastly the equity crowdfunding model, the focus of this research, works involving investors receiving equity in the business in exchange for their investment (Burze Yasar, 2021), a somewhat similar process to traditional venture capital, in which professional investors deploy capital in exchange for ownership in a company. However, in equity crowdfunding, investors take on higher risks and expect a financial return in exchange for their investment, differently from the reward-based model. In addition to seeking monetary returns, there are three key differences between equity and reward-based crowdfunding: (1) higher pledged amounts, (2) larger average campaign goals, and (3) pre-funded project valuation (Vulkan et al., 2016).

Via equity crowdfunding both companies and investors can reap a multitude of benefits that go well beyond just the capital raise or the investment return.

Through equity crowdfunding companies get incremental opportunities for accessing capital, as have the possibility to tap into large networks of individual investors, increase their chances of raising funds beyond a small number of institutional investors or venture capital funds and overcome geographical limitations (Vismara, 2016) and increase diversification to reduce the risk of over-relying on a single lender or source of funding (Di Pietro F., 2021). Another positive aspect of equity crowdfunding is its ability to facilitate the attraction of subsequent venture capital financing rounds: a successful crowdfunding campaign can signal a company's market appeal and quality, lowering information asymmetries and increasing venture capital attractiveness (Butticè, et al., 2020). Lastly, equity crowdfunding can often be more cost-effective for startups and small businesses compared to traditional forms of financing, as there are typically fewer fees associated with equity crowdfunding and less stringent requirements for financial reporting (Grundy at al., 2016), plus it allows entrepreneurs to maintain strategic control of the company and avoid giving away large amounts of equity and control to venture capital and angel investors who are often interested in fast returns and active involvement in the company (Colombo at al., 2010).

Investor benefits instead come from the possibility to invest in startups that may not be accessible through traditional channels, allowing them to create more diversified portfolios and tap into the high-growth potential of early-stage companies (Junge et al. 2021). It also decreases barriers to entry as it typically requires lower investment minimums, allowing retail investors to be more active and invest in companies without significant financial resources (Löher, 2016; Burze Yasar, 2021). They also have the potential to obtain consistent returns for their investments, due to the higher intrinsic risk of investing in early-stage companies, possibly resulting in significantly

higher capital gains than investing in established players with limited upside potential (Junge et al. 2021).

However, there are also possible downsides and risks that companies should be mindful of. Relying on the crowd, companies may miss out on the valuable guidance and expertise provided by professional investors which would have otherwise taken part in the company governance (Vulkan et al., 2016; Arena et al., 2015), or it could be the case that equity crowdfunding accentuates coordination costs, agency conflicts, and governance issues with potential follow-on investors may limiting access to follow-on capital (Butticè et al., 2020).

Investors as well may face a set of limitations and risks. Early-stage companies usually do not have an established track record and validated business model and limited capabilities to produce high-quality information, making it complex to take informed decisions for non-professional investors (Podar et al., 2015; Burze Yasar, 2021). Investors need to carefully consider the high intrinsic risk and the illiquidity of such companies and build their portfolios accordingly (Lukkarinen, Schwienbacher, 2023). Furthermore, studies show that platform members may manipulate campaign dynamics by investing in low-quality offerings, increasing the number of subsequent bids and withdrawing their investments right before campaign success, benefiting from the successful round yet manipulating the market (and investors), further increasing the complexity of finding investment worth companies (Meoli, Vismara, 2021).

1.2 Organizational Design

Organizational design can be defined as a systematic approach in shaping the structures, systems, and processes within an organization to align them with its goals and objectives. It involves making deliberate and informed decisions about the allocation of resources, distribution of tasks and responsibilities, and flow of communication within the organization. The goal of organizational design is to create an environment that is supportive of effective decision-making, efficient resource utilization, and optimal performance, based on a deep understanding of the organization's needs and challenges, as well as a clear vision for the future (Piva et al., 2022; Arsawan et al., 2022). Effective organizational design requires a continuous and iterative approach, as organizations are constantly evolving (especially true for early-stage companies) and adapting to their changing environment (Reeves, 2011).

On a managerial side, a proper organizational design will allow the company to operate smoothly, avoiding unwanted blockers and frictions, especially in the early stages in which founders are still involved in almost every process and lean horizontal organizations are the key to work in an agile environment (Dabić et al., 2021). Hence, relevant implications of a well-designed company structure will be to guarantee clarity of roles and accountability, avoiding misunderstandings and clearly highlighting employee responsibilities, and improve communication, stating reporting relationships and proper stakeholders' identification (Dabić et al., 2021).

Several factors impact and hinder recruiting processes in early-stage companies, which could prevent them from building an ideal organizational structure (Piva et al., 2022). In particular they have to be mindful that they will have less resources and brand recognition versus well established players, hence their overall attractiveness to

potential leads will be lower, as well as the capability of offering competitive compensation packages (Cardon & Stevens, 2004; Eisenhardt et el., 1990; Williamson et al., 2002). Furthermore, startups are inherently more uncertain and riskier than established companies, which can potentially intimidate candidates, make it difficult to attract employees who are looking for stability and security in their careers (Fort et al., 2013). Lastly startups need to (almost always) find the right employees, as a small number of individuals can make a significant impact on the success of the company and no resources should be wasted. It becomes therefore key to take onboard individuals who share the same vision and values as the company, and who are also willing to work hard and be flexible in a rapidly changing environment, elements which clearly restrict the number of possible fits for the role (Moser et al., 2017; Tumasjan et al., 2011).

1.3 Research Questions

It is clear that equity crowdfunding has become an established alternative to raise capital, capable of delivering to companies and investors a wide array of benefits. On the other hand, it is crucial for early-stage companies to properly structure their organization, developing the proper balance between size and speed, to capitalize in the most on their innovations.

What stands out is that no study, as of today, has ever analyzed if there is any relationship among equity crowdfunding dimensions, such as funds raised or the company turnover, with organizational dimensions.

Since being properly structured can make the difference for startups between failure and success, it becomes relevant to entrepreneurs to understand if there are relevant upsides in performing equity crowdfunding campaigns and how they could capitalize on them to increase their chances of success.

This study has the goal of being the first ever to take a step into this roam, studying if and how equity crowdfunding impacts the organizational design of a company and how it can help entrepreneurs to take advantage of this knowledge.

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2. Literature Review & Purpose of the Study

The purpose of this chapter is to provide a comprehensive overview of the current state of knowledge about equity crowdfunding and organizational theories, reviewing existing literature on the topic, detail the purpose of the study, and the questions that will guide the investigation.

The focus will be on understanding why entrepreneurs and investors choose to pursue an equity crowdfunding campaign, which are its pros and cons, and what we know about what happens to the company after the raise. Concluded such introduction, there will be a deep dive into organizational theories, looking at how the company structure can influence the company's results, which factors (internal and external) can model the organizational chart.

2.1 Equity Crowdfunding

Equity crowdfunding (also known as crowd-investing or investment crowdfunding) is a method of raising capital used by startups and early-stage companies which

essentially offers the company's securities to a number of potential investors in exchange for financing, entitling each investor to a stake in the company proportional to their investment (Burze Yasar, 2018). Unlike conventional capital-raising methods for early-stage companies, which primarily rely on investments from a small group of professional investors, equity crowdfunding targets a broader group of investors (Mochkabadi, 2020). Indeed, the main idea behind this process is to raise the required capital by obtaining small contributions from a large number of investors.

Thanks to its peculiarities, over the last 10 years equity crowdfunding has become an established source of financing (Hornuf et al., 2018), positively impacting entrepreneurs' capabilities to raise capital, allowing them to bypass traditional financing methods, such as loans or venture capital, and directly connect with a global network of investors (Burze Yasar, 2021; Di Pietro F., 2021).

Actually, crowdfunding campaigns can be classified in different categories, which are reward-, donation-, royalty-, and securities-based model (Burze Yasar, 2021), with the main difference lying between in what the investors receive in exchange for their investment.

In the rewards-based model, investors receive non-monetary rewards as payback for their investment, such as early access to a product or service. This model is similar to traditional crowdfunding, in which individuals invest in a project or idea and receive rewards in exchange. In the rewards-based equity crowdfunding model, investors are essentially pre-ordering a product or service, receiving it once the campaign is completed and production started. Such a model is especially popular among startups in the technology and creative industries, as it allows them to raise capital while also building buzz and generating demand for their product. (Leone at. Al, 2023)

In the donation-based crowdfunding, as the name suggests, there is no specific reward to the amounts raised. Such a model is typically used for solidarity, cultural, patronage, volunteering, and sport events. (Zhang et al., 2020)

In the royalty model the reward is of a monetary nature, consisting in profit or revenues sharing which will be generated from the project, yet without any ownership on the venture or capital gain. Hence, through such model founders aim at keeping full ownership of their company, sacrificing part of their profits. Since it adds another line of costs is typically used by high margins businesses. (Burze Yasar, 2021)

Lastly, the securities-based crowdfunding can be split into two subcases: equity and lending. Equity crowdfunding model, the focus of this research, involves investors receiving equity in the business in exchange for their investment (Burze Yasar, 2021). This model is closer to traditional venture capital, in which professional investors deploy capital in exchange for ownership in a company. In equity crowdfunding, investors take on higher risks and expect a financial return in exchange for their investment, differently from the reward-based model. In addition to seeking monetary returns, there are three key differences between equity and reward-based crowdfunding: (1) higher pledged amounts, (2) larger average campaign goals, and (3) pre-funded project valuation (Vulkan et al., 2016). Because of these factors, equity crowdfunding is subject to stricter regulations compared to reward-based crowdfunding, where founders must comply with specific disclosure requirements and rules and are restricted in the information they can share with the public (Vulkan et al., 2016). The case of lending crowdfunding instead can be compared to raising debt: the company owes that amount to the lenders and pays interests as normal debt (Stefanelli et al., 2022).

Equity crowdfunding campaigns take place on dedicated platforms, such as Indiegogo, GoFundMe, KickStarter, and Mamacrowd, which essentially are two-sided markets matching founders and funders.

Founders will carefully choose their reference platform, as they do present some differences. One of the main distinctive traits which influence the platform decision are fees, which usually come in a combination of transaction, platform, administrations, and others, ranging from c.a. 5% to c.a. 20% of the raised amount (Osservatori Entrepreneurship Finance & Innovation, 2022). Another very relevant aspect is the target audience to whom the company wants to refer and whether it is a coherent target with the chosen platform: different platforms attract different types of investors and companies. Furthermore, being equity crowdfunding based on the concept of small donations from masses of people, being listed on well-known platforms can increase campaign success likelihood, yet it also comes with higher competition for the same capital (Belleflamme et al., 2015).

Equity crowdfunding campaigns, once all approvals are received and the fundraising goes live, are based on straight forward processes with standardized procedures. Typically, campaigns have a duration of 30-60 days, predetermined at launch, and they'll close at the stated deadline, or earlier, in case the funding objective is achieved (Osservatori Entrepreneurship Finance & Innovation, 2022). In the event that more funds are provided than the initial target, specifically in case of an oversubscribed round, potential investors may be put on a waiting list. Founders have the discretion of selecting those investors whom they think will more value to their venture, thanks to their networks, knowledge, and experiences, but usually the process relies on a first-come first-served process (Burze Yasar, 2021).

2.2 Why Equity Crowdfunding

The growing phenomenon of equity crowdfunding and its success derive from a series of advantages that founders and investors can reap out of it, differently from traditional financing processes such as debt financing or Venture Capital. The objective of this chapter is to go through the main drivers and drawbacks for companies and investors in pursuing equity crowdfunding, to have a clear understanding of the impact that this model has on entrepreneurialism.

2.2.1Companies' Benefits

Analyzing company' drivers that lead them to rely on equity crowdfunding, the first main reason can be identified with the incremental opportunities of accessing capital. Equity crowdfunding provides to the company the possibility of easily tapping into large networks of individual investors and increasing chances of raising the funds that need, going beyond a small number of large institutional investors or venture capital funds (Vismara, 2016). Not only it increases the number of possible investors, but it allows to easily overcome barriers dictated by geographical limitations, opening possibilities to connect with international funders regardless of their location. A larger base of possible investors clearly increases possibilities to secure funding, particularly for those companies that are located in regions where traditional financing methods may be less accessible (Vismara, 2016). Lastly, leveraging on a larger pool of investors will increase their diversification, bringing down the risk of ending up over relying on a single lender or source of funding, which may end up deeply affecting the cap table and company governance (Di Pietro F., 2021).

The capability to reach wide audiences (clearly depending also on the platform in which its run) presented above, provides the possibility to companies to simultaneously raise funds but also showcase their products and services, build brand awareness, hence connect not only with investors but with potential customers (Saul et. al., 2018). This can be especially valuable for companies that are just starting out and looking to build a strong brand and customer base. In contrast, traditional financing options exclude this duality, as interactions will happen between the firm and the institutional investor and be focused on the raise, without any possible other upside (Saul et. al., 2018).

Another positive lever is the capability of equity crowdfunding to facilitate the attraction of subsequent VC financing rounds. Oftentimes companies who go through a crowdfunding campaign do not raise all the funds needed to bring the company to breakeven, hence the need to follow on investments. A successful raise through a nominee shareholder structure signals entrepreneurs' quality and firms' market appeal, lowering information asymmetries and increases VC attractiveness (Butticè, et al., 2020).

Lastly, equity crowdfunding compared to traditional forms of financing can often be more cost-effective for startups and small businesses. There are typically fewer fees associated with equity crowdfunding and less stringent requirements for financial reporting and disclosure, which are all elements which can be very impactful for an early-stage company with limited resources and capabilities (Grundy at al., 2016). Furthermore, it does not only help in reducing costs, but also allows entrepreneurs to maintain strategic control of the company. VC and angel investors oftentimes require large amounts of equity and active involvement in the firm post raise (Colombo at al., 2010), via a seat in the board for example, plus are usually interested in fast returns.

Therefore, founders see equity crowdfunding as an alternative to protect their governance and private benefits, so may prefer to rely on large community of people passionate about the business rather than professional investors (Di Pietro F., 2021).

2.2.2Investors' Benefits

Upsides are not only available to the company but are also present for the investors. Equity crowdfunding offers the possibility to invest in startups which may not be accessible through traditional channels, allowing investors to create more diversified portfolios and tap into the high-growth potential of early-stage companies (Junge et al. 2021). Additionally, it decreases barriers to entry, as it typically requires investment minimums that are lower in respect to traditional financing, with platforms listing minimum investment at only 5$. This allows also retail investors to be more active and invest in companies without the need of significant financial resources (Löher, 2016; Burze Yasar, 2021).

Another advantage of equity crowdfunding is to offer investors the potential for obtaining high returns for their investments. Due to the higher intrinsic risk of investing in early-stage companies the possible positive return on the investment can be significantly higher than investing in established (and less risky) players with limited upside potential (Junge et al. 2021).

2.2.3Companies' Risks

With that said, it is important to note that equity crowdfunding carries a certain level of risk as well. Businesses that receive funding through equity crowdfunding are typically early-stage companies that have not yet established a track record of successes, which may still need a validated business model and are searching for the

product-market fit. As such, failure risk is consistent and much higher than the one of an established company, increasing chances that investors may not see any return from the investment (Burze Yasar, 2021).

Also, companies themselves may face a list of drawbacks for choosing equity crowdfunding as well. Firstly, whenever a company raises funds via venture capitalists (or other professional investors, such as business angels) not only are increasing their liquidity but they are also taking onboard professionals who can help them grow, provide guidance, expertise, and a valuable network. Equity crowdfunding investors may not have the same level of capabilities, which can increase difficulty for companies to receive valuable feedback and advice on how to scale the business (Vulkan et al., 2016; Arena et al., 2015). Even though, as mentioned before, receiving funding via crowdfunding has a positive signaling value, in cases of direct shareholders structures it may also accentuate coordination costs, agency conflicts and governance issues with potential follow-on investors, potentially limiting access to follow-on capital (Butticè et al., 2020).

2.2.4Investors' Risks

Investors as well suffer a series of limitations when investing through equity crowdfunding. As previously mentioned, equity crowdfunding is typically used by early-stage companies which do not have a solid track record and solid experience, which translates into risky investments with high chances of company default (Burze Yasar, 2021).

Furthermore, such investments are very illiquid, meaning that the investor will be in for the long run and will be able to sell its shares only after some time. Liquidity presents as strong lever for the founders, as research shows how fundraising

campaigns explicitly committing to a post-campaign secondary market listing are more successful, attracting more investors and investors choosing to invest larger sum (Lukkarinen, Schwienbacher, 2023). Despite that, investors necessarily need to carefully build portfolios, considering the high intrinsic risk and the illiquidity of such companies.

Lastly, early-stage and small companies oftentimes also have limited capabilities to produce high quality information, limiting the capabilities of investors to make informed investment decisions and proper risk assessment (Lukkarinen, Schwienbacher, 2023). To that, it should be added that a part of equity crowdfunding investors may not have the same level of professionalism and due diligence capabilities as venture capital firms (or other professional investors), hence risk of committing wrong choices or being deceived by unethical companies increases, making more difficult for investors to protect their interests and make proper investments (Podar et al., 2015). On this topic M. Meoli & S. Vismara (2021), starting off previous research showing that early bids attract later investors and trigger information cascades, enhancing the chances of success of the offerings, demonstrate that in several cases platform members rely on that concept to stir campaign success. What happens is that they usually invest in low-quality offerings and influence the campaign dynamics (increasing the number of subsequent bids), withdrawing their investments right before campaign success, benefitting from the successful round yet manipulating the market (and investors).

2.3 Organizational Design

Screening through literature on equity crowdfunding it is clear that the effects and implications of company organizational design are still an unexplored roam. Most of available literature focuses on the financing process (analyzing signaling theories, success factors, how equity crowdfunding can be of help to founders, impacts of gender balance, etc.), market analysis, regulation impact and behavioral finance, lacking a proper deep dive on what happens post-raise to the internal organization of the company and if this is somehow related to the company's performances.

One of the few similar studies available (Hellman, Puri, 2002), focuses on the impact of venture capital activities on the development of new firms. The research, performed on Silicon Valley start-ups, demonstrates how VC is related to a variety of professionalism measures. In particular the results obtained show that several organizational milestones happen post-raise, such as the formulation of human resource policies, the adoption of stock option plans, the hiring of a VP of sales and marketing, and also that these firms are more likely and faster to replace the founder with an outsider in the position of the CEO. Such results are proving evidence that even though literature has tended to focus on large, public companies, relevant insights can be found within early-stage companies, further highlighting the need of deepening this knowledge also on companies going through equity crowdfunding.

To properly understand why the company structure is a key topic and has major impacts on the firm future and results the next paragraphs present a proper deep dive on the topic.

Organizational design can be defined as a systematic approach in shaping the structures, systems, and processes within an organization to align them with its goals

and objectives. It involves making deliberate and informed decisions about the allocation of resources, distribution of tasks and responsibilities, and flow of communication within the organization. The goal of organizational design is to create an environment that is supportive of effective decision-making, efficient resource utilization, and optimal performance, based on a deep understanding of the organization's needs and challenges, as well as a clear vision for the future (Piva et al., 2022; Arsawan et al., 2022). Effective organizational design requires a continuous and iterative approach, as organizations are constantly evolving (especially true for early-stage companies) and adapting to their changing environment (Reeves, 2011).

On a managerial side, a proper organizational design will allow the company to operate smoothly, avoiding unwanted blockers and frictions, especially in the early stages in which founders are still involved in almost every process and lean horizontal organizations are the key to work in an agile environment (Dabić et al., 2021). Hence, relevant implications of a well-designed company structure will be to guarantee clarity of roles and accountability, avoiding misunderstandings and clearly highlighting employee responsibilities, and improve communication, stating reporting relationships and proper stakeholders' identification (Dabić et al., 2021).

However, a company's organizational structure is not only determined by internal factors (i.e., company needs) but is also influenced by external factors such as the competitive environment, the regulatory framework, and the availability of talent and resources (Cardon et al., 2004). The competitive environment and availability of talents and resources can have a significant impact on a company's organizational chart, since it will affect the capability of recruiting ideal candidates, which may in turn force companies to change structure to answer to key positions vacancies or may induce the need to reorganize to respond to changing market conditions or take advantage of new

opportunities (Darvishmotevali et al., 2020). The regulatory framework is another strongly impacting element since companies must consider any requirements or restrictions that may impact their organizational structure (Reeves, 2011; Dove, 2001). For example, certain industries may be subject to regulations that dictate the number of executives or the structure of the board of directors.

On the opposite side, an inadequate or poorly designed organizational structure can have significant negative impacts on a company's performance (Teece et al., 1997). Too cumbersome structures can easily lead to big inefficiencies, due to slow operations and complex decision-making processes. Such events can directly translate into delays and loss of productivity, negatively impacting the overall performance of the company (Sull, D.N., 1999). Directly connected there is the risk of lacking accountability, in an organizational structure with unclear lines of authority and decision-making power, it can be difficult to determine who is responsible for specific tasks and decisions leading, putting at risk company leadership and projects. The other major drawbacks are conflicts and miscommunication, as ineffective organizational structure can lead to confusion and misunderstandings between employees and departments. This can lead to a lack of collaboration and cooperation within the company, which can again negatively impact its performance (Sull, D.N., 1999). Lastly there can be strong resistance to change, as rigid organizational structure can make it difficult to adapt to changes in the market or industry, leading to resistance to innovation and progress, possibly negatively impacting the company's competitiveness and ability to stay relevant in a rapidly changing environment (Hamel et al., 2003).

2.4 Organizational Structure in Early-Stage Companies

The organizational structure of early-stage companies has been receiving more interest in recent years from researchers, yet there is still lacking research around its relationship with equity crowdfunding. Despite that, most of the teachings learnt with startups perfectly apply also to very early-stage companies, since they overlap and both operate in a context of rapidly changing and uncertain environments, where it is imperative to have an organizational structure that is adaptive, flexible, and capable of supporting growth (Dove, 2001; Teece, 2016).

Even though every company is differently organized, there are a series of characteristic traits that most early-stage companies share and that help them to thrive during the first years:

- Flat Hierarchy: one of the most notable features of the organizational structure in startups (in respect to established companies) is their flat hierarchy, with few levels of management and a more horizontal structure. Such structure allows for more efficient decision-making, greater agility, and better alignment between the organizational goals and the actions of its employees. The flat hierarchy also fosters a more collaborative and communicative culture within the organization, as employees are able to have direct access to senior management (Reeves at al., 2011).
- Lean Operations: startups typically operate with a lean organizational structure, focused on efficiency and cost-effectiveness. This often means that the structure is designed to minimize overhead and support rapid growth, by streamlining processes, clarifying ownership, and reducing bureaucracy. The lean structure also enables startups to respond quickly to changes in the market,

as they are able to adjust their operations in a timely manner without being bogged down by bureaucracy and unnecessary structure (Franco, Landini, 2022).

- Dual Roles: tied to the previous point, early-stage companies often have employees capable of performing several different tasks within the organization holding dual roles. This allows for greater flexibility, as employees are able to respond quickly to changing needs and the company structure can better adapt to rapid changes, while fostering entrepreneurial culture, as employees are empowered to take ownership of their work and contribute to the success of the organization (Franco, Landini, 2022).
- External Factors: lastly, true for all companies but especially for small businesses, the organizational design is not only influenced by internal factors, such as the size and maturity of the organization, but also by external factors, such as the regulatory environment, competition, and technological advancements, which may dictate the types of organizational structures that startups can adopt or induce the need for greater efficiency and innovation (Mahlagha et al., 2020).

All the above underlines how crucial is for early-stage companies to create a flexible and agile organization, which is able to properly handle the uncertainty and dynamic context that they face during the first phases of their life. Such characteristics, combined with general theories on organizational design discussed in the previous paragraph, clearly highlight how a proper organizational design can help startups to thrive in during their initial stages and how it can have a great impact on the company performance (Piva et al., 2022).

2.5 Key Company Positions

Withing the organization there are some key roles who hold greater responsibilities in shaping the company's strategy, growth, and future. Usually defined as C-level executives, or similar, these individuals are responsible for overseeing various aspects of the business, from strategy and finance to operations and human resources. In this section is provided an explanation of who are the most common C-level executives and key roles in a startup, and how they impact the growth of the company (Fang-Yi Lo, Pao-Hung Fu, 2016; Buyl et al., 2011).

The most impactful of all is the Chief Executive Officer (CEO), who is in charge of designing the overall strategy and vision for the company, while ensuring that the organization is aligned with its goals and objectives. All critical decisions of the company have to pass though and be approved by him, making the CEO the center of company strategy. Oftentimes, in early-stage companies the CEO role is taken on by the founder, which allows him to have all the levers to deliver his vision and reach his objectives (Investopedia).

Directly reporting to the CEO then there is a list of C-level executives who have ownership over specific branches, or divisions, of the company. To name some of the most common titles, it is possible to have a Chief Financial Officer (CFO), who is responsible for overseeing the financial operations of the company, including financial planning, budgeting, and reporting, working closely with the CEO to ensure that the company has the resources it needs to grow and succeed. Other typical C-level is the Chief Operating Officer (COO), who has ownership on overseeing the operational aspects of the business, including supply chain management, production, and logistics, ensuring that the company is operating efficiently and effectively, while

meeting its goals and objectives. Another common role, especially with tech companies, is the Chief Technology Officer (CTO), who is responsible for overseeing the technology strategy of the company driving innovation, including the development of new products and services, the implementation of technology solutions, and ensuring that the company is staying ahead of the curve in terms of technology (Investopedia).

The above-mentioned C-level job titles are just a fraction of the actual roles that can be found in companies (e.g., Chief Marketing Officer, Chief Product Officer, …), and in all cases the importance and impact that they have on the company is very relevant. Additionally, to the C-level executives, there are several key roles within a startup that play a critical role in the success and growth of the company, whose only difference may be a different job title. Under this umbrella it is possible to find Vice Presidents (VP) and Directors, such as VP of Sales or Director of Communications (Investopedia).

While it is hard to have a comprehensive list of the most impactful roles in companies, since all organizations reflect the individuality of each business and develop peculiarities and unique job-titles, it is clear that structuring a proper leadership team, with the right knowledge and at the right time is key. Especially in early-stage phases they are critical to the success and growth of the organization, as they provide the strategic leadership, technical expertise, and operational efficiencies that are necessary for the company to succeed (Colbert et al., 2014; Buyl et al., 2011). Understanding the role and impact of these individuals is important for both academic researchers and practitioners, as it provides insight into how startups can be better positioned for success.

2.6 Recruiting Complexities in Startups

Since the goal of the research gravitates around the company organization and its structure, it is essential to be aware of all the limitations that may impact the capabilities of early-stage companies to properly staff. Indeed, it is possible that company plans did not realize due to the impossibility of finding the proper candidates to cover key roles, or the incapability of taking them onboard (Piva et al., 2022)

Some of the main challenges that startups find in recruiting individuals that make it a challenging process are (Piva et al., 2022):

- Limited resources: early-stage companies usually have the need to balance hirings with limited budgets, making it difficult to attract top talent. Indeed, this can limit the company's ability to offer competitive compensation packages and employee benefits (Cardon & Stevens, 2004).
- Lack of brand recognition: after their initial launch small businesses are often unknown entities, and therefore, lack the brand recognition and prestige of established companies. When in competition with more established players which have also solid track records, this hinders the capability of startups to attract and retain employees who may be more attracted by other options (Eisenhardt et el., 1990; Williamson et al., 2002).
- Uncertainty and risk: Startups are inherently more uncertain and riskier than established companies, which can make it difficult to attract employees who are looking for stability and security in their careers. Additionally, it is common to have restructurings and strategic changes to adapt to the market context,

potentially intimidating potential employees who may prefer a more stable and predictable work environment (Fort et al., 2013).

- Hiring for multiple skills: especially in the early stages, having onboard round employees who are able to effectively combine technical and business skills is crucial, as it allows for leaner organization and faster operations. However, such requirements can narrow down the pool of potential candidates, as they may have a strong background in one area but lack the necessary skills in the other (Moser et al., 2017; Tumasjan et al., 2011).
- Attraction of the "right" employees: since startups have limited organization size (way smaller than established players) finding the right employees is crucial, as a small number of individuals can make a significant impact on the success of the company. It is therefore key to take onboard individuals who share the same vision and values as the company, and who are also willing to work hard and be flexible in a rapidly changing environment, elements which clearly restrict the number of possible fits for the role (Moser et al., 2017; Tumasjan et al., 2011).

Summing up, early-stage companies face numerous challenges in attracting and retaining its employees, as they often lack competitiveness in respect to established players and the ideal candidate profile should have certain capabilities, both hard and soft skills, and qualities (capability to adapt, strong vision, and be aligned with company culture) that shrink the pool of potential leads, therefore potentially impacting the organization of the company.

2.7 Purpose of the Study

Concluding a general introduction on what equity crowdfunding is and the importance of proper organizational design, the missing linkage among the two is a whether there is some kind of direct relationship connecting company growth and success to its organization structure.

It is now clear how, if properly handled, equity crowdfunding can be a relevant lever for founders as an alternative to traditional funding, not only increasing chances to find investments but with multiple other pros, such as possible lower costs and higher speed. On the other hand, it has been clarified how powerful and crucial a proper organizational design is for companies. Especially when looking to early-stage companies, building a lean and agile organization which is able to work smoothly and deliver rapidly is key, and can be a strong determinant to the final success of the entrepreneurial venture.

Despite that, as of today, most of the research work has been conducted on established companies or startups which completed Venture Capital rounds (Hellman, Puri, 2002), leaving aside the equity crowdfunding world. At the same time, literature on equity crowdfunding mainly focuses on how a company can improve its chances to successfully raise funds and general overviews of the space, not deepening in what happens post-raise. Therefore, I have decided to deepen into this topic.

The major objective and novelty of this research is to be the first one to study what happens to the organizational design of a company which starts and completes an equity crowdfunding raise, researching most relevant impacts and improvements, trying to uncover unknown connections and generate valuable insights for entrepreneurs and funders.

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3. Chapter one: Methodology & Data Gathering

The purpose of this section of the thesis is to give context about the Equity Crowdfunding market in Italy and describe the methodology and data gathering process used.

The study has been developed on a set of 374 distinct companies which completed a capital raise through equity crowdfunding between 2014 and 2020, mapping the evolution of their organizational chart from 2014 until 2022.

The data was gathered between September 2022 and December 2022 via LinkedIn, one of the most widely used professional networking platforms, which provides a rich source of information on the evolution of organizational charts in companies. To properly map the organization of every company the data granularity needed was at singular employee level, and LinkedIn platform perfectly matched such need. Information available do not only limits key positions in the companies, including CEO, CFO, COO, and other senior management positions, but is comprehensive of every single employee level.

Further on in this section, the data gathering process will be described in detail, including the raw data structure, data transformations, and data limitations. Subsequently the theoretical models used to perform the data analysis will be explained too.

3.1 Italian Equity Crowdfunding Landscape

In this chapter[1], the research focuses on the Italian equity crowdfunding industry, which provided since 2012 innovative startups, later on innovative also SMEs, vehicles and funds that invest mainly in these companies, "tourism startups," and since 2017, all SMEs, the opportunity to raise venture capital through web platforms authorized so far by Consob, in derogation of the regulations governing public offerings.

3.1.1Offering of risk capital shares

Figure 3.1-1 shows the total number of campaigns for raising risk capital shares submitted by authorized online platforms from the enactment of the regulation until June 30th, 2022. Since then, there had been 1,055 placements, of which 799 were successfully closed, 209 were closed without reaching the minimum target (therefore

[1] Most information come from: 7° REPORT ITALIANO SUL CROWDINVESTING (2022) Politecnico di Milano – Dipartimento di Ingegneria Gestionale

with no funds raised), and 47 were still ongoing (many of which had already reached the minimum threshold for success).

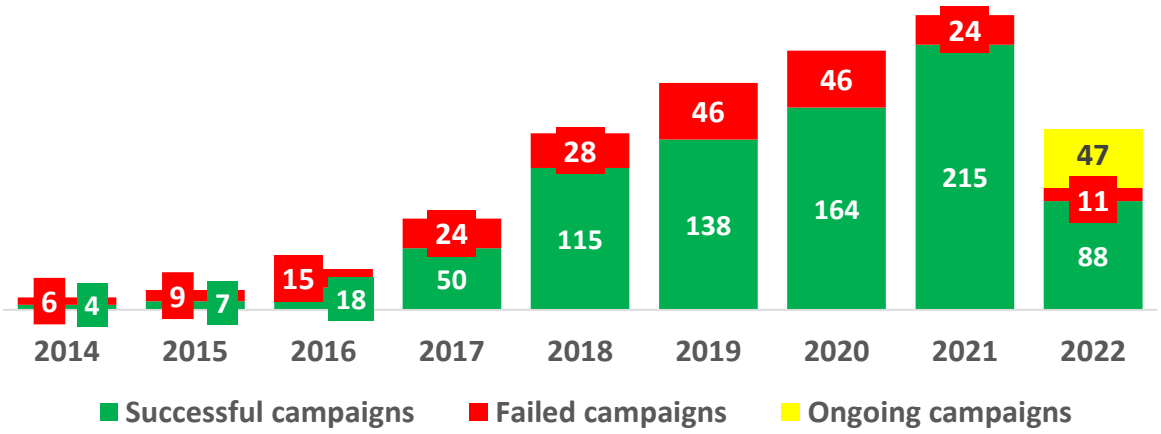

Figure 3.1-1: All 1055 Italia equity crowdfunding campaigns per closing date

In 2021, a new record was set with 239 closed projects (+13.8% compared to 2020). However, the first half of 2022 did not perform as well as the same period in 2021 - in particular, we recorded 88 successfully closed campaigns compared to 93 from a year ago, as well as 11 unsuccessful closures (which increased compared to the 9 from the first half of 2021). The situation of uncertainty in financial markets, the rising trend of interest rates, and the increase in energy and raw material costs, which have put some economic activities under pressure, probably did not help. In addition, 2021 may have benefited from an additional flow due to operations that were postponed in 2020 due to the Covid-19 pandemic.

The historical success rate, measured only on closed campaigns, has further increased (79.3%) and is stabilizing around 90% as a trend data. This data confirms that crowdfunding platforms have become both more selective in accepting campaigns

where a good degree of adherence is expected and more capable of leveraging the volume of contacts and customers they have accumulated over time.

Changing perspective and looking at historical data per authorized portal (see Appendix for full list of authorized portals), it is possible to find CrowdFundMe in first place with 192 campaigns, followed by Mamacrowd (164 campaigns) and BacktoWork with 160. These three platforms have originated practically half of the campaigns. Looking only at the past 12 months, Mamacrowd (51 placements), BacktoWork (50), and CrowdFundMe (44) are on the podium. The market continues to be decidedly concentrated despite the arrival of new authorized platforms: 73% of the new offers since July 2021 have been originated by only 5 platforms.

The share of capital offered in exchange for the raised funds averages at 8.65% with high variability and the median value is 5.24%. It should be noted that the fraction of the capital actually transferred in case of a successful operation may vary compared to what is reported by statistics, depending on the capital actually raised, which depending on the case may be lower or higher than the target.

Share of capital offered (%)	Mean	Median	Minimum	Maximum
All	8.65	5.24	0.04	99.56
2014-2016	19.86	15.72	0.95	86.67
2017	11.33	8.56	0.2	99.00
2018	7.94	5.24	0.17	98.77
2019	7.36	4.76	0.5	99.00
2020	8.16	4.19	0.05	99.56
2021	7.62	4.54	0.04	83.33
2022 (H1)	5.83	4.49	0.08	44.44

Table 3.1-1: Bid statistics of equity crowdfunding: share of capital offered. Campaigns of investment vehicles without significant assets before the offer and real estate campaigns are excluded.

The average value for offers in the first half of 2022 shows a new historical low (5.83%) while the median value is consistently below 5%. The trend of proposers to maintain control over the company's activities, retaining an absolute majority of voting and property rights, is confirmed.

Regarding the type of capital offered, the practice of offering securities with similar or differentiated rights compared to those of the founders, depending on the amount invested, is further consolidated. Figure 3.1-2 shows that in 17% of the total sample, the offer only concerned ordinary shares (with property and voting rights identical to those of the founding members) or only full voting securities, while 14% of the cases involved only non-voting shares and a substantial 67% of cases involved non-voting shares for those investing small amounts and voting shares for those investing more. In other cases, it is possible to have more specific situations such as the offer of voting securities, but with different characteristics than ordinary ones, such as limited voting rights or with special privileges, or partially reserved for particular categories of subjects.

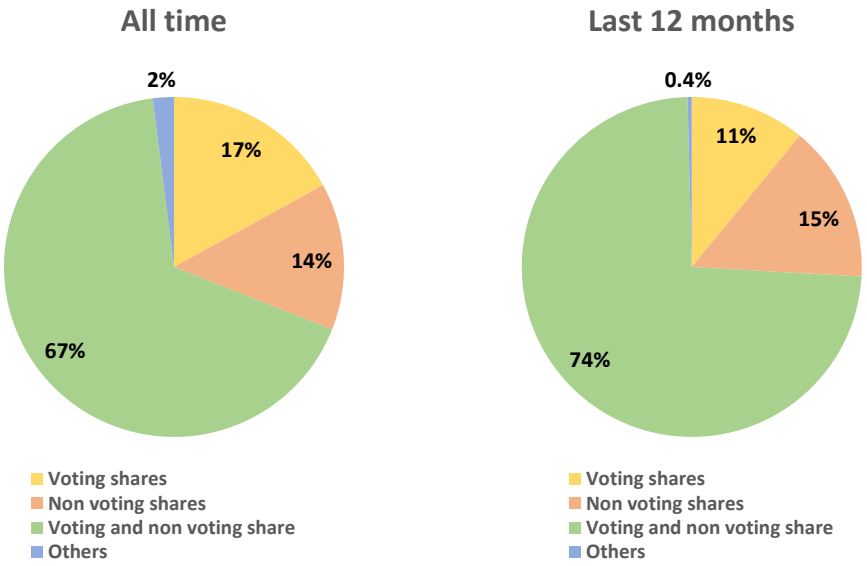

Figure 3.1-2: Segmentation of the sample of 1,055 equity crowdfunding campaigns according to the type of shares offered: comparison between the entire sample and operations of the last year.

Looking at the right-hand side, which includes only offers from the last 12 months, the predominance of offers for voting shares above a certain threshold is even clearer (a significant 74%, which is stable compared to last year); 15% of the offers are for non-voting shares only, which is a common case in real estate operations and investment vehicle fundraising.

3.1.2Campaign outcomes

As previously observed in Figure 3.1-1, of the 1,055 campaigns recorded, 799 had successfully closed their fundraising by June 30, 2022. The total capital raised in these campaigns amounts to €429.04 million.

Figure 3.1-3 shows the progressive growth of fundraising in the market, which reached a new record of €148.26 million in 2021 (€65.35 million in the first half and €82.92 million in the second). For the first time, similar to the data on the number of closed campaigns, the first half of 2022 saw a negative sign for fundraising, amounting to €58.99 million (-9.7% compared to the same period last year).

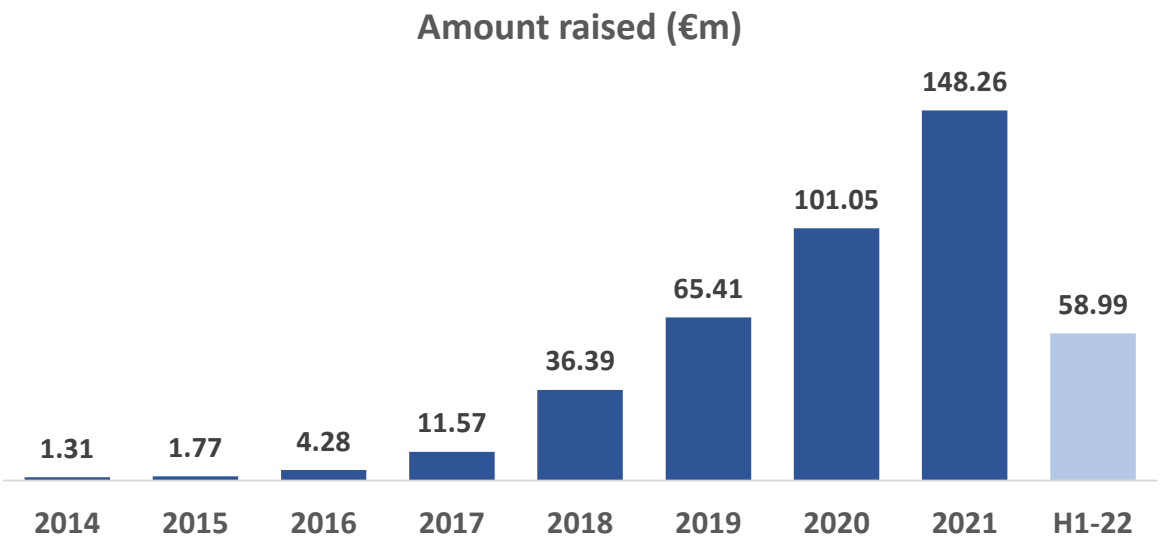

Figure 3.1-3: Annual fundraising flow for the 799 successfully closed equity crowdfunding campaigns. The values are in millions of euros, and the year of reference is the one in which the campaign was closed

Breaking down such amount per different portals, Mamacrowd still dominates the ranking with €83.61 million raised in its campaigns (€32.28 million in the last year), followed by CrowdFundMe (€71.09 million, of which €22.72 million were raised in the last 12 months). Walliance also remains in third place with €68.46 million. If we consider only the last year, we find Mamacrowd in the lead once again (with €32.28 million), followed by Walliance (€24.96 million) and CrowdFundMe (€22.72 million).

3.1.3Companies involved

The 1,055 campaigns analyzed by the research actually involve 930 companies, as there are cases of issuers who conducted multiple campaigns at different times, either on the same portal or on different portals. As shown in Figure 3.1-4, the issuers in the sample are divided into:

- 605 innovative startups (65% of the sample), including 578 Srl, 10 agricultural companies, 15 SpA and 2 foreign companies that registered their Italian branch in the appropriate register;
- 115 innovative SMEs (12% of the sample), including 104 Srl and 11 SpA;
- 143 SMEs (15% of the sample), all Srl except for 6 SpA;
- 67 investment vehicles in innovative startups, innovative SMEs, or other SMEs (7%); these are companies that invest in portfolios of equity or vehicles set up specifically for a single investment.

The graphs highlight that the market continues to be dominated by innovative startups (133 of them started at least one campaign since 1/7/2021, accounting for 56% of the total), although they are losing ground. There are also 39 innovative SMEs (16%, slightly increasing), 39 SMEs (16%, stable), and 29 investment vehicles (12%).

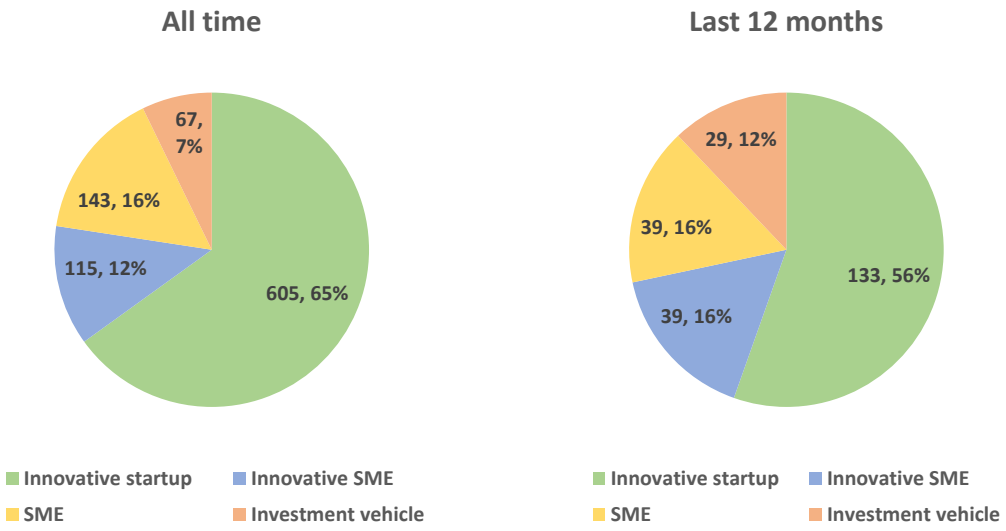

Figure 3.1-4: Type of company of the 930 businesses that were protagonists of an equity crowdfunding campaign on Consob authorized portals until 30/6/2022.

Looking at the geographical distribution of the campaigns, Lombardy is the region with the highest number of issuers, accounting for 40.4% of the total (375 companies), followed by Emilia Romagna with 9.8% (91 companies) and Lazio with 9.6% (89 companies). In the southern part of Italy, Campania has the highest number of issuers, with 28 companies. Over the last 12 months, Lombardy has remained stable at 40.0%, while Emilia Romagna has confirmed its second place with 33 issuers (13.9%). On the other hand, Lazio, Tuscany, and Trentino-Alto Adige have lost ground.

3.1.4Investors

As shown in Table 3.1-2, the average subscription amount is €3,913 for individual investors and €35,740 for legal entities; both values are showing a trend of increase (if

we consider investments from January 2021 onwards, we have averages of €4,872 and €50,396 respectively).

	2014-2017	2018	2019	2020	2021	Totale
Physical entity: average	€ 3,353	€ 3,432	€ 3,032	€ 4,509	€ 4,872	€ 3,913
Physical entity: median	€ 1,000	€ 999	€ 940	€ 1,000	€ 1,500	€ 1,000
Legal entity: average	€ 20,112	€ 24,121	€ 37,870	€ 31,308	€ 50,396	€ 35,740
Legal entity: median	€ 6,003	€ 5,000	€ 5,000	€ 3,575	€ 10,000	€ 5,000

Table 3.1-2: Average and median investment in Italian equity crowdfunding campaigns: physical and legal entity. Sample: 606 campaigns successful before 2021

It can be noted how there has been a 'jump' in the average value of retail investments since 2020. Figure 3.1-5 shows the distribution of investments compared to the aforementioned sample. It can be seen that 18.4% of subscriptions from individual investors are equal to or less than €499.99 and this percentage continues to decrease year over year. Within the €1,000 - €4,999.99 group it is probably possible to find mostly business angels (i.e. individuals who have found in crowdfunding an additional tool for scouting and origination of their investments in start-ups). In 10.9% of cases (a percentage still increasing), the investment ticket is equal to or greater than €10,000. As for legal entities, investments below €1,000 are the minority (18.2%), and in more than half of the cases, the amount is higher than €5,000; the percentage of contributions from €50,000 upwards increases (14.6%).

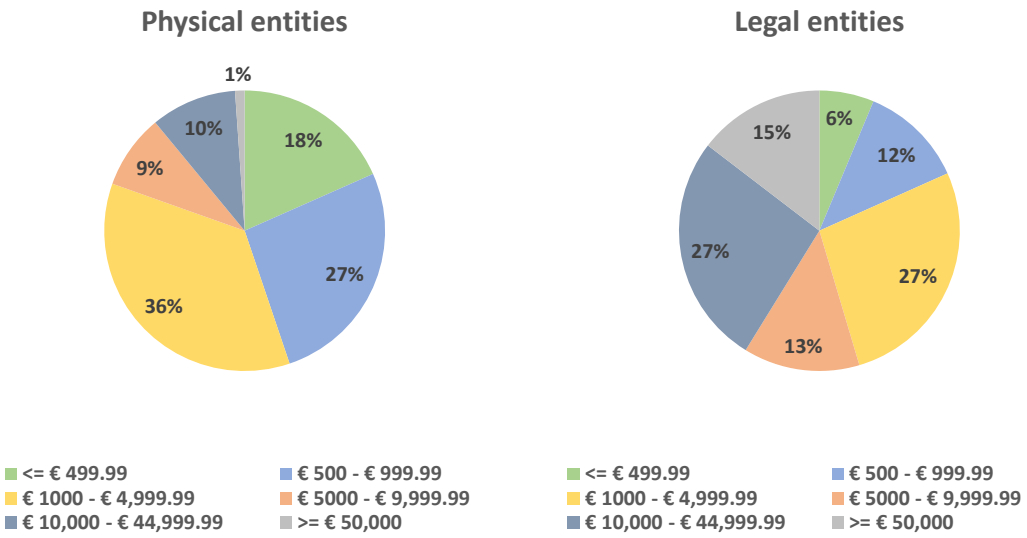

Figure 3.1-5: Distribution of subscriptions by individual amount. Sample coverage: 606 successfully closed equity crowdfunding campaigns.

3.2 Data Collection & Description

The data collection for the study was executed through a manual process leveraging on LinkedIn as source of information. The focus has been on the retrieval of each employee, actual and former, information for every company. The information gathered for each of them was name, surname, entry month, entry year, exit month (if any), exit year (if any), and job title.

The data collection process resulted in more than 4000 different people tracked across all the company data set and a proper mapping of 225 companies. Indeed, out of the 374 initial companies:

- 223 companies (59.63% of total) were successfully mapped;

- 132 companies (35.29% of total) did not have any LinkedIn profile, making it impossible to map their organizational chart. For these cases the company is probably either too small and doesn't see the value in creating and maintaining and LinkedIn page or failed;
- 19 companies (5.08% of total) reached a too big scale with hundreds of people to map. LinkedIn, regardless of using free or paid profile, after a certain number of distinct profiles mapped in one session will proceed to block the account, making the data collection impossible. Additionally, it could not be broken in multiple sessions, as the order in which profiles are shown to the user is changed every time the page is refreshed, which makes the process extremely time consuming.

The resulting mix of mapped companies versus the year in which they performed the campaign round is as follows:

ECF year	Frequency	Percentage
2014	3	1.35%
2015	1	0.45%
2016	6	2.69%
2017	29	13.00%
2018	53	23.77%
2019	68	30.49%
2020	63	28.25%
2021	0	0.00%
2022	0	0.00%
Total	**223**	**100.00%**

Table 3.2-1: Mapped companies distribution per campaign year

The resulting database file is made of different sheets, each of them with a distinct function: Output, Workings and Support sheets. Over the next paragraphs punctual explanation of how they were built is provided.

3.2.1Output sheet

The Output sheet is the key reference part of the database, proving the input data to be fed to the models. It contains all 374 companies FTE data, where each firm for years from 2014 to 2022 has its own reference metrics.

Company Name	Campaign year	Year
CESYNT ADVANCED SOLUTIONS Srl	2018	2014
CESYNT ADVANCED SOLUTIONS Srl	2018	2015
CESYNT ADVANCED SOLUTIONS Srl	2018	2016
CESYNT ADVANCED SOLUTIONS Srl	2018	2017
CESYNT ADVANCED SOLUTIONS Srl	2018	2018
CESYNT ADVANCED SOLUTIONS Srl	2018	2019
CESYNT ADVANCED SOLUTIONS Srl	2018	2020
CESYNT ADVANCED SOLUTIONS Srl	2018	2021
CESYNT ADVANCED SOLUTIONS Srl	2018	2022
Scloby Srl	2018	2014
Scloby Srl	2018	2015
Scloby Srl	2018	2016
Scloby Srl	2018	2017
Scloby Srl	2018	2018
Scloby Srl	2018	2019
Scloby Srl	2018	2020
Scloby Srl	2018	2021
Scloby Srl	2018	2022

Table 3.2-2: Example of the data panel.

Precisely, these key dimensions populated by pulling data from other sheets are:

- Total HC: displays the total number of different FTEs active during a specific year. It's based on a SUMIFS that cross-checks company name and reference year with the entry and exit date of each unique employee (it must be included), excluding board members;

- C-Line / VP: displays the total number of different FTEs active during a specific year covering a key position within the company. It's based on a SUMIFS that cross-checks company name, reference year with the entry year and dummy variable marking that he has a key role;
- C-Line changes: variable tracking how many FTEs covering key positions within the company changed or changed role. It's based on a SUMIFS that cross-checks company name, reference year with the entry year and dummy variable marking that a key role employee has left the company;
- New C-line Role: variable tracking how many new key roles are created during a specific year. It's based on a SUMIFS that cross-checks company name, reference year with the entry year and dummy variable marking that a new key role has been introduced;
- New CEO: dummy variable set to 1 in case a new CEO is elected during a specific year. It's based on a SUMIFS that cross-checks company name, reference year with the entry year and dummy variable marking that a new CEO has been elected;
- Churn CEO: dummy variable set to 1 in case the CEO churns, or changes role, during a specific year. It's based on a SUMIFS that cross-checks company name, reference year with the entry year and dummy variable marking that the CEO churned;
- Corporate, Staff, Marketing, R&D, Design, Operations, Business Development, Sales: a series of columns showing how the organizational structure is divided between these macro departments withing the company during a specific year. Each single column it's based on a SUMIFS that cross-checks company name, reference year with the entry year and department in which each single employee works. Then they are divided by total HC to get a percentage;

- Is campaign: dummy variable set to 1 when the reference year is greater or equal to the year in which the equity crowdfunding campaign has been performed;
- Cline_sales_bizdev: displays the total number of different FTEs active during a specific year covering a key position in sales and business development within the company. It's based on a SUMIFS that cross-checks company name, reference year, department with the entry year and dummy variable marking that he has a key role;
- Cline_marketing: displays the total number of different FTEs active during a specific year covering a key position in marketing within the company. It's based on a SUMIFS that cross-checks company name, reference year, department with the entry year and dummy variable marking that he has a key role;
- Cline_sales_bizdev_marketing: displays the total number of different FTEs active during a specific year covering a key position in sales, business development and marketing within the company. It's based on a SUMIFS that cross-checks company name, reference year, department with the entry year and dummy variable marking that he has a key role;
- Delta YoY HC: variable counting the total HC difference, in absolute terms, year over year. It assumes both positive (in case of net increase of the total employees) and negative (in case of net decrease of the total employees) values;
- Delta Abs HC: starting from column Delta YoY it contains only zeros and positive values;

3.2.2Workings Sheet

The Workings sheet is the core part of the database, here is where raw data at singular FTE level is stored. The first columns (A to G) contain inputs from LinkedIn, while columns H to V are support columns for data modelling.

In order, the columns are:

- Is Cline: dummy variable used to track whether the job title contains certain specific words, such as "Chief" or "Director", stored in a support sheet (Manager sheet) and is therefore classifiable a C-line role. If it does the variable is set to 1. It's based on a combination of IF, SUMPRODUCT, ISNUMBER and SEARCH to allow searching the specific words within a list;
- Is CEO: dummy variable used to quickly detect the company CEO. It is set to 1 if the job title contains the word CEO. It's based on a combination of IF, ISNUMBER and SEARCH to perform the word search;
- CEO Churn: dummy variable used to track whether the CEO churned or changed role. In order to determine it, it controls if exit date is left blank (meaning that the person is still covering the role) or if some date is inserted. It is set to 1 if a CEO change happened;
- Is New C-line: dummy variable used to track whether a specific C-line role existed already in that company or not. In order to determine it, it cross-checks C-line roles of the company and their start date combining IF, AND and SUMIFS functions. It is set to 1 if it is a new role;
- Cline Churn: dummy variable used to track whether a C-line manager churned or changed role. In order to determine it, it controls if exit date is left blank

(meaning that the person is still covering the role) or if some date is inserted. It is set to 1 if a C-line change happened;

- Adj Change Role: dummy variable used to avoid double counting people if they covered multiple roles in the company. It is set to 1 if the person transitioned to another role. To perform the check just checks if the name and surname in the line above the current one is the same or not;
- Board Member: dummy variable to track board members, as they are not considered part of the organizational chart. Set to 1 when the job title is "Board Member";
- Entry: combining the entry month and the entry year inputs via excel formulas it creates the entry date. It is obtained using a combination of IF, NUMBERVALUE, and logical conjunctions;
- Exit: combining the exit month and the exit year inputs via excel formulas it creates the exit date. It is obtained using a combination of IF, NUMBERVALUE, and logical conjunctions;
- Nr_Employee: column set to 1 to simplify sums;
- Entry Month & Entry Year: repetition of the entry month and year;
- Exit Month & Entry Year: repetition of the exit month and year if available, if not the month is set to 12 and the year to 2023. This has been done to make possible certain SUMIFS formulas;
- Department: for each job title in this column is available the macro department under which it belongs (e.g., "R&D"). Pulls data from the support sheet Departments matching job titles via an XLOOKUP.

3.2.3Support Sheets

There are then three support sheets used to store useful information that are used to trigger formulas within the Workings sheet. Having dedicated sheets avoids errors and helps in keeping the file organized. The three support sheets are named Department, Manager and Campaign.

- Departments sheet: this sheet contains a table matching each individual job title to a macro department. The classification covers the following departments: Corporate, Staff, Marketing, R&D, Design, Operations, Business Development, and Sales. This classification will serve as a base to study company composition and balance between different macro departments pre and post crowdfunding. It is used in the Department variable in Workings sheet. See Appendix for full list.
- Managers sheet: this sheet contains a list of job titles, either partial or complete, used to identify C-line roles within the company. It is used in the Is Cline variable in Workings sheet. The identified list of words to trigger the formula are:

Job title contains
Chief
Director
President
Vp
Officer
Principal
Managing
Executive

Table 3.2-3: List of job titles used to identify key company roles

- Campaign sheet: this is the starting list of equity crowdfunding campaigns used to build the structure of the final database contained in the Output sheet. Key information here are the campaign id, company name, and start and end date of the campaign. The column Campaign Year in the Output sheet contains the year of the End Date of the campaign.

All these information have been used in conjunction with a dataset provided from the research team of the Osservatorio Crowdinvesting, coordinated from professor Giudici Giancarlo, containing all the Italian companies which have performed an equity crowdfunding campaign from 2014 to 2020. Each company infomation was then populated matching it with:

- Official financial statements information (e.g. turnover, total assets, debt, …) from Orbis;
- Network dimensions deriving from analysis on investors;
- Information on following financing rounds (Venture Capital) using Vico dataset.

3.3 Regression Models

Over the previous Chapters and paragraphs the objectives of this research have been listed and there is a thorough explanation of the data that has been collected and has been used to perform the analysis.

Within this section an in-depth explanation of the models used to study whether organizational dimensions of a company are related to key Equity Crowdfunding

measures will be presented. Over the course of the analysis two different models will be used: Fixed Effect and Poisson Regression.

The tool used to perform the analysis is Stata and the dataset, thanks to its yearly granularity, has been treated as a panel with company name as panel identifier and year as cross section.

3.3.1Fixed Effect Regression

Fixed effects regression is a statistical analysis method that is used to estimate the relationship between one or more independent variables and a dependent variable while controlling for the effects of one or more fixed variables.

The idea behind the fixed effect model is that entities have individual characteristics that may or may not influence the outcome and/or predictor variables, and since these traits are not random it is necessary to account for them. In entity's fixed effects, the model used during the analysis, it is assumed a correlation between the entity's error term and predictor variables. However, an entity's fixed effects cannot be correlated with another entities.

The entity fixed effects regression model can be written as:

$$Y_{it} = \alpha_i + \beta X_{it} + u_i + e_{it}$$

$$i = 1, \dots, n\,; t = 1, \dots, T$$

Where:

- Y_{it} is the dependent variable for observation i in time t;

- X_{it} is a vector of independent variables for observation i in time t;
- α_i is the fixed effect for individual i;
- u_i is the within entity error;
- e_{it} is the overall error term.

The interpretation of the β coefficient: for a given entity, when a predictor changes one unit over time, the outcome will increase/decrease by β units (assuming no transformation is applied) (Bartels, Brandom, 2008). Therefore, here β represents a common effect across entities controlling for individual heterogeneity.

One of the main advantages of fixed effects regression is that it controls for unobserved individual-level heterogeneity, which can be a major source of bias in cross-sectional studies. Another advantage of fixed effects regression is that it can be used to estimate the causal effect of a variable of interest on the dependent variable, even if that variable is correlated with unobserved individual-level heterogeneity.

3.3.2Poisson Regression

Poisson regression for panel data is a statistical model that is used to analyze count data that is collected over time from the same individuals or entities. It is an extension of the basic Poisson regression model, which assumes that the counts follow a Poisson distribution (i.e., mean and variance of the counts are equal), that takes into consideration that the data is collected over time from the same individuals or entities.

The Poisson regression model for panel data includes two main components: a fixed-effects and a random-effects component. The fixed-effects component controls for time-invariant variables that may be correlated with the dependent variable, while the

random-effects component controls for unobserved time-varying variables that may be correlated with the dependent variable.

The basic Poisson regression model for panel data can be written as follows:

$$\log\big(E(Y_{it})\big) = \alpha + \beta * X_{it} + u_i + \varepsilon_{it}$$

where:

- Y_{it} is the count for individual i at time t;
- $E(Y_{it})$ is the expected value of Y_{it};
- α is the intercept;
- X_{it} is a vector of explanatory variables for individual i at time t;
- β is a vector of coefficients;
- u_i is the random effect for individual i. It captures the unobserved heterogeneity that is specific to each individual and is assumed to follow a normal distribution with mean zero and variance σ^2;
- ε_{it} is the error term, which captures the idiosyncratic variation in the counts that is not explained by the explanatory variables or the random effect

The fixed-effect component is included in the model by introducing a set of dummy variables to capture the time-invariant variables that may be correlated with the dependent variable. These dummy variables are included in the explanatory variables vector X_{it} and are interacted with each of the other explanatory variables.

The Poisson regression model for panel data has several advantages; first of all it accounts for overdispersion, which is common in count data, and it can handle both time-invariant and time-varying explanatory variables. Additionally, it can handle

unobserved heterogeneity that may be correlated with the explanatory variables, and it can model the correlation between observations from the same individual over time.

3.4 Data Transformation for Models

Within this section all numerical transformations that have been applied to the starting data in Stata before running the models, in order to get the most out of the dataset, will be presented.

A first subset of variables, namely:

- Professionalcf: it expresses the number of professional investors taking part in the crowdfunding process;
- Laureacf: it expresses the number of investors with degrees taking part in the crowdfunding process;
- Mastercf: it expresses the number of investors with a master's degree taking part in the crowdfunding process;
- Imprenditorecf: it expresses the number of entrepreneurs taking part in the crowdfunding process;
- Managercf it expresses the number of investors with managerial roles in other companies taking part in the crowdfunding process.

Have been set to zero before the equity crowdfunding year, to be able to focus only on what happens from the raise onwards and made the ratio over the total number of investors participating in the campaign, to get a better grasp of the professionalism

level of the network participating to the raise. The resulting variables have been renamed as

- Professionalcf_stepr;
- Laureacf_stepr;
- Mastercf_stepr;
- Imprenditorecf_stepr;
- Managercf_stepr;
- Professionalcf_stepr.

On a similar reasoning another set of variables, listed below, has been set to zero before the equity crowdfunding campaign and then taken its log vale to normalize the scale:

- ln_raccolta_step: logarithm of the total amount of funds raised;
- vc_step: variable tracking whether a subsequenct venture capital round has been performed;
- ln_ratio_turnover_ecf_step: logarithm of the ratin between company turnover and funds raised.

Lastly, on the set of dependent variables chosen for the analysis a logarithmic transformation has been applied:

- total_HC became ln_totalHC
- clinevp became ln_clinevp
- deltaabs became ln_deltaabs

For more detail refer to the Stata code in Appendix.

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4. Empirical Results

In the following chapter the results of the models will be presented, which will provide substantial evidence to answer the research questions and bring to an initial conclusion the study.

In particular the results of Fixed Effect Regression and Poisson Regression will be explained, analysis the outcomes and starting to draw initial conclusions on whether organizational dimensions are related to key Equity Crowdfunding and managerial takeaways can be drawn.

Afterwards, as robustness check of data, similar regression as the one performed by Hellman and Puri in their work will be performed, trying see if their conclusions are verified also in this case.

However, before deep diving into the more complicated models and trying to extrapolate complex conclusions, an initial section focused on data descriptives is present. In here an introductive high-level analysis of the data working data is performed to start to extrapolate valuable information.

4.1 Descriptive Statistics

This section will provide an introductive overview on the collected data, trying to capture interesting patterns and traits which can provide valuable starting information.

At a first glance this is how the data presents itself:

Firm Characteristics	N	Mean	Std. Dev.	Min	Median	Max
Total HC (#)	2007	6.232	7.648	0.000	4.000	64.000
C-Line / VP	2007	0.761	1.099	0.000	0.000	8.000
C-Line changes	2007	0.058	0.264	0.000	0.000	3.000
New C-line Role	2007	0.146	0.446	0.000	0.000	4.000
New CEO	2007	0.086	0.284	0.000	0.000	2.000
Churn CEO	2007	0.013	0.117	0.000	0.000	2.000
Corporate (%)	2007	0.232	0.285	0.000	0.125	1.000
Staff (%)	2007	0.126	0.191	0.000	0.000	1.000
Marketing (%)	2007	0.095	0.162	0.000	0.000	1.000
R&D (%)	2007	0.167	0.236	0.000	0.000	1.000
Design (%)	2007	0.027	0.075	0.000	0.000	0.571
Operations (%)	2007	0.048	0.114	0.000	0.000	1.000
Business Development (%)	2007	0.041	0.102	0.000	0.000	1.000
Sales (%)	2007	0.056	0.119	0.000	0.000	1.000
Is Campaign	2007	0.487	0.500	0.000	0.000	1.000
Cline_sales_bizdev	2007	0.151	0.444	0.000	0.000	4.000
Cline_marketing	2007	0.092	0.304	0.000	0.000	2.000
Cline_sales_bizdev_marketing	2007	0.243	0.557	0.000	0.000	5.000
Delta YoY HC	2007	1.051	2.908	-15.000	0.000	20.000
Delta Abs HC	2007	1.348	2.510	0.000	0.000	20.000

Table 4.1-1: Descriptives of the collected organizational dimensions

To better read whether some relevant information can be already extracted from the raw data some t-test looking for statistical differences in means comparing the organizational dimensions on key Equity Crowdfunding metrics are useful. The Equity crowdfunding dimensions analyzed are the total amount of funds raised, turnover and if the company has or has not gone through subsequent Venture Capital funding.

The results hereby presented from this initial screening of the organizational dimensions against key Equity Crowdfunding metrics will already show several interesting points of attention and insights have been identified, suggesting that much informative value can be extracted from the dataset when properly handled.

4.1.1Funds Raised

Starting from the size of funds raised, the categorization is based on whether the firm raised an amount of funds higher than the median of all companies' raise. The median has been used in order to minimize distortions coming from outliers (very high or low raises). The results are summed in the table below:

Firm Characteristics	Mean if Raise below Median	Mean if Raise above Median	Statistical significance Pr(|T| > |t|) = 0.0	Statistical significance Pr(T < t) = 0.0
Total HC (#)	7.131417	11.66735	***	***
C-Line / VP	0.08911704	1.334694	***	***
C-Line changes	0.0431211	0.077551		
New C-line Role	0.1026694	0.1857143	***	***
New CEO	0.0451745	0.0204082		
Churn CEO	0.0246407	0.022449		
Corporate (%)	0.2985158	0.2007862	***	
Staff (%)	0.1451877	0.1909584	***	***
Marketing (%)	0.1371985	0.1147199	***	
R&D (%)	0.2045615	0.2021073		
Design (%)	0.0222911	0.0406402	***	***
Operations (%)	0.0517151	0.0739796	***	***
Business Development (%)	0.0340145	0.0870206	***	***
Sales (%)	0.0633946	0.0795836	***	***
Cline_sales_bizdev	0.1396304	0.355102	***	***
Cline_marketing	0.1457906	0.1306122		
Cline_sales_bizdev_marketing	0.2854209	0.4857143	***	***
Delta YoY HC	0.7679671	1.436735	***	***
Delta Abs HC	1.184805	1.87551	***	***

Table 4.1-2: T-test results comparing funds raised

Starting from the first couple of dimensions, Total HC and C-Line / VP, stands out the fact that companies who raise more funds have a not only a greater number of employees but also a more structured organizational design. If the first point could be interpreted as common sense, as the greater the organization the higher the raise sought after, the second one can imply a couple of different explanations. The first one is that companies not only grow their headcount but also their complexity, structuring more as they scale and hence require more funds to run, or the second one, which is that companies with more solid organizational charts can attract more funds without necessarily require an overall higher number of employees. The proper reading will sit probably in between these two options. Another interesting piece of information concerns the number of New C-line Roles, as it would seem that companies who raise more funds tend to create more complex structures with more key roles, confirming previous analysis.

There seems to be no difference in CEO churn and election.

Looking at how the organization is structured among its departments there a couple of interesting notes which can be taken:

- Companies which raise smaller amounts of funds tend to have a higher % of the total employees on corporate functions (which include CEO role, Founders, General Managers, …, hence very round roles with multiple responsibilities). This means that they probably are still in very early stages in which very few central people handle most of the company operations, versus bigger companies which are more structured and have specialized roles covering every need;

- The opposite can be said for Staff positions (such as Legal, Finance and Accounting), Design, Operations, Sales, and Business Development which grow their weight as the company scales and rounds get bigger.

Another interesting difference concerns the number of key roles covering Business Development and Sales positions, as it would seem that companies who raise more funds have hired more employees within those areas. Looping back to what has been said before, this is probably partially related to a bigger and more structured company which attracts more capital but may also be related to the fact that having within the firm those roles the attractiveness increases. Indeed, it doesn't work in the same way for marketing roles, as no significant difference is found.

Lastly, if we look at the delta YoY of the number of headcount (which for precision, could have been even negative as it contains both positive and negative numbers), firms which raise more capital tend to hire employees than those who raise less. This is also confirmed if we look at the Delta Abs (which for ease of reading is the Delta YoY HC in which all negative numbers have been excluded), which is greater in case of higher capital raise – this shows that the difference it's not due to the fact that if a firm raises less capital it may fire more employees, or they simply leave, but they structurally hire more.

4.1.2Turnover

Moving on to turnover, the categorization is based on whether the firm had a turnover higher than the median of all companies' turnover. The median has been used in order to minimize distortions coming from outliers (very high or low turnover). The results are summed in the table below:

Firm Characteristics	Mean if Turnover below Median	Mean if Turnover above Median	Statistical significance Pr(|T| > |t|) = 0.0	Statistical significance Pr(T < t) = 0.0
Total HC (#)	7.718053	11.12603	***	***
C-Line / VP	1.0811136	1.146694		
C-Line changes	0.0486815	0.072314		*
New C-line Role	0.1298174	0.1590909		
New CEO	0.0425963	0.0227273	*	
Churn CEO	0.020284	0.0268595		
Corporate (%)	0.3229428	0.1746935	***	
Staff (%)	0.1655171	0.1705185		
Marketing (%)	0.143522	0.107949	***	
R&D (%)	0.1848591	0.2221456	***	***
Design (%)	0.0260457	0.0370433	***	***
Operations (%)	0.0413903	0.0847725	***	***
Business Development (%)	0.0528117	0.0685309	***	***
Sales (%)	0.0446055	0.0989227	***	***
Cline_sales_bizdev	0.2555781	0.2396694		
Cline_marketing	0.1602434	0.1157025	**	
Cline_sales_bizdev_marketing	0.4158215	0.3553719		
Delta YoY HC	1.095335	1.11157		
Delta Abs HC	1.381339	1.383884	*	**

Table 4.1-3: T-test results comparing company turnovers

In this case it is possible to see that firms with a higher turnover have a higher number of employees. This could be read as a fact that especially in the early stages having few employees more can really make the difference in terms of amount of work and productivity of the firm, enhancing the possibilities to generate more volumes.

Despite not being highly significant, it would seem that companies with higher turnover tend to have more changes among their key employees, maybe because as the company scales in volumes different skills are needed and there is higher employee turnover.

There seems to be also a difference in the likelihood that a new CEO will get elected. Lower turnover firms seem to have a higher tendency to promote new CEOs, maybe because the company is still small and very unstable, while as it scales the structure starts to consolidate more.

As with the amount of capital raised, similar conclusions can be drawn looking at the company composition. Firms with lower turnover tend to have few employees, mostly covering very wide roles and handling a multitude of tasks, whereas they scales the organization becomes more complex and balanced across all departments to better face complexities.

Looking at the speed of hirings and HC growth (metric: Delta YoY HC), no significant differences seem to raise from the two groups, whilst looking at Delta Abs HC it seems that companies with higher turnover tend to have more years in which they hire several employees.

4.1.3VC Round

Lastly the focus is on looking at the differences between firms which completed follow-up Venture Capital rounds versus those who did not. Results are summed in the following table:

Firm Characteristics	Mean if Not Completed VC	Mean if Has Completed VC	Statistical significance Pr(|T| > |t|) = 0.0	Statistical significance Pr(T < t) = 0.0
Total HC (#)	9.072043	16.02128	***	***
C-Line / VP	1.068817	2	***	***
C-Line changes	0.055914	0.1489362	***	***
New C-line Role	0.1290323	0.4468085	***	***
New CEO	0.0344086	0		
Churn CEO	0.0247312	0		
Corporate (%)	0.2556988	0.1268628	***	
Staff (%)	0.17144415	0.1028831	***	
Marketing (%)	0.1277541	0.0897258		
R&D (%)	0.2026879	0.2160535		
Design (%)	0.0306847	0.06485054		*
Operations (%)	0.0549872	0.2190876	***	***
Business Development (%)	0.0581322	0.1094085	***	***
Sales (%)	0.0706569	0.0884729		
Cline_sales_bizdev	0.2290323	0.6170213	***	***
Cline_marketing	0.1408602	0.0851064		
Cline_sales_bizdev_marketing	0.3698925	0.7021277	***	***
Delta YoY HC	1.083871	1.489362		
Delta Abs HC	1.483871	2.468085	***	***

Table 4.1-4: T-test results based on subsequent Venture Capital rounds

In this case the whole organization's size and complexity seem to show a very sharp difference in the two cases. The number of employees and key roles is much higher in those companies which performed, after the equity crowdfunding round, a Venture Capital one. This can mean two things:

- More structured companies have higher cash burn levels and therefore need substantial cash injections, naturally turning them to VC funds as they scale;
- Having a well-designed organization with layers, a solid first line, and clarity around roles may entice more Venture Capitals to deploy capital and invest in that company;

There seems to be also higher turnover in key positions (metric: C-Line changes) in case the company followed on with a VC round. It could be because the initial people covering for those roles were not the type of profile that a Venture Capital would have appreciated (due to past experience, age, management style, …) or just a different type of profile for the state in which the company was transitioning to, meaning that a change was required in order to keep progressing.

Again, in this case the company composition among the different departments follows the same pattern as before. Companies which will go through a VC round develop more complex structures not focused on a few key central roles (Corporate roles) but with a wide range of different departments.

Lastly, more than in previous cases, there is a very strong difference in the number of key employees belonging to the Sales and Business Development departments, as companies which will proceed with VC rounds have more of them. This is coherent with what Hellman & Puri demonstrated in their research, that is that venture capital is related to the hiring of VP of sales.

Despite no statistical significance is given to the difference in means of the Delta YoY HC, there is surely a case in case the Delta Abs is taken into account. Firms which will perform VC rounds tend to have periods in which they hire at a substantially higher pace than others.

4.2 Regression Results

The results obtained from the regressions presented below had been obtained following the methodology detailed in Chapter 3. The underlying code used can be found in the Appendix.

The variables used within the models are:

- Dependent variables: total HC (total number of employees), C-line / VP (total number of key employees), Delta Abs HC (Delta YoY of HC in which all negative numbers have been excluded);
- Independent variables: raised amount of funds and completion of subsequent rounds of Venture Capital
- Control variables: ration between turnover and funds raised, and percentage over total network participants of investors with degrees (laurea), master, entrepreneurs (imprenditore), manager, and professional investors.

4.2.1Regression Results

The first regression model used has been the fixed effect regression and it has been run 3 times per each dependent variable changing the mix of variables in order to verify for model robustness. Subsequently on the same set of variables the Poisson regression has been performed.

In order to highlight the results a system based on * has been used. The code works as follows: *** marks result with a p-value below 0.01, ** marks results with a p-value between 0.01 and 0.05, * marks result with a p-value between 0.05 and 0.10.

The results of the model can be found below, respectively in Table 4.2-1 and Table 4.2-2

	Total HC 1	Total HC 2	Total HC 3	C-line VP 1	C-line VP 2	C-line VP 3	Delta HC Abs 1	Delta HC Abs 2	Delta HC Abs 3
ln_raccolta	0.035 ***	0.022 ***	0.028 ***	0.015 ***	0.009 *	0.011 **	0.028 **	0.038 ***	0.042 ***
	(0.007)	(0.007)	(0.008)	(0.004)	(0.005)	(0.005)	(0.013)	(0.013)	(0.015)
vc_step	0.546 ***	0.543 ***	0.553 ***	0.295 ***	0.289 ***	0.295 ***	0.387 *	0.373 *	0.376 *
	(0.111)	(0.111)	(0.111)	(0.067)	(0.068)	(0.068)	(0.200)	0.199	(0.199)
ln_turnover_raccolta	0.005	0.005	0.005	0.000	0.000	0.000	-0.009	-0.009	-0.009
	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.006)	(0.006)	(0.006)
Laurea_r	-0.255		-0.648	-0.070		-0.243	-1.244		-0.648
	(0.414)		(0.458)	(0.251)		(0.278)	(0.744)		(0.819)
Master_r	0.222		-0.418	-0.196		-0.543	-0.023		0.527
	(0.540)		(0.616)	(0.327)		(0.375)	(0.969)		(1.102)
imprenditore_r		0.884	1.306		0.926	1.307		0.477	0.352
		(1.088)	(1.149)		(0.662)	(0.699)		(1.944)	(2.056)
manager_r		0.302	0.654		0.116	0.343		-2.033 ***	-1.914 **
		(0.374)	(0.437)		(0.228)	(0.266)		(0.688)	(0.781)
professional_r		0.800	1.252		-0.470	-0.156		1.896	1.993
		(1.045)	(1.087)		(0.636)	(0.662)		(1.868)	(1.946)

Table 4.2-1: Fixed Effect Regression Results

	Total HC 1	Total HC 2	Total HC 3	C-line / VP 1	C-line / VP 2	C-line / VP 3	Delta HC Abs 1	Delta HC Abs 2	Delta HC Abs 3
ln_raccolta	0.038 ***	0.031 ***	0.034 ***	0.030 ***	0.021 *	0.023 *	0.045 *	0.062 **	0.066 ***
	(0.008)	(0.009)	(0.010)	(0.012)	(0.012)	(0.014)	(0.025)	(0.024)	(0.027)
vc_step	0.617 ***	0.619 ***	0.626 ***	0.729 ***	0.755 ***	0.768 ***	0.790 **	0.812 **	0.812 **
	(0.223)	(0.221)	(0.222)	(0.227)	(0.229)	(0.224)	(0.374)	(0.381)	(0.381)
ln_turnover_raccolta	0.006 ***	0.006 ***	0.006 **	0.001	0.000	0.000	-0.028 **	-0.028 ***	-0.028 ***
	(0.002)	(0.002)	(0.002)	(0.004)	(0.004)	(0.004)	(0.011)	(0.011)	(0.011)
Laurea_r	-0.117		-0.388	0.122		-0.129	-1.719		-0.801
	(0.515)		(0.534)	(0.688)		(0.728)	(1.466)		(1.512)
Master_r	-0.049		-0.646	-0.323		-1.274	0.265		0.279
	(0.734)		(0.893)	(0.843)		(0.966)	(2.111)		(2.102)
imprenditore_r		1.042	1.699		2.690	3.447 *		3.397	3.662
		(1.691)	(1.737)		(2.016)	(2.078)		(3.051)	(3.274)
manager_r		0.019	0.327		0.057	0.448		-3.192 **	-2.895 **
		(0.571)	(0.654)		(0.580)	(0.615)		(1.312)	(1.366)
professional_r		0.696	1.058		-0.278	0.472		2.304	2.568
		(1.303)	(1.258)		(1.974)	(1.906)		(3.069)	(3.317)

Table 4.2-2: Poisson Regression Results

The outputs show in both cases a positive correlation between the two selected organizational dimensions with the funds raised and following venture capital rounds.

Starting with the raised funds the results show that companies which have a higher number of employees tend to successfully complete bigger rounds of equity crowdfunding. This result could be influenced by the fact that inherently bigger companies need greater amounts of resources to be operative, however if it is couple with the fact that there is also a positive correlation with the YoY headcount delta the result gains robustness. Indeed, it would seem that not only do companies tend to be bigger, but they also tend to start to hire more, probably as a result of the greater resource availability. Lastly it would seem that a more structured organizational design, with a solid first line of reports, positively correlates with bigger amounts of funds raised.

The results are interestingly the same for what concerns correlation with following rounds of venture capital. Bigger companies, who started hiring more and have more structure organizations tend to have more chances of raising funds through VC.

4.2.2Robustness Check

The same regressions above have been performed using as dependent variables key roles in Sales, Business Development, and Marketing, along the lines of Hellmann and Puri's research.

As above, significant results have been highlighted using a system based on *. The code works as follows: *** marks result with a p-value below 0.01, ** marks results with a p-value between 0.01 and 0.05, * marks result with a p-value between 0.05 and 0.10.

Results, which can be found in Tables 4.2-3 and 4.2-4, confirm what research has proven already, that a combination of Sales and Marketing C-line members is strongly correlated with the eventuality of completing the following rounds of VC.

	C-line S/BD 1	C-line S/BD 2	C-line S/BD 3	C-line M 1	C-line M 2	C-line M 3	C-line S/BD/M 1	C-line S/BD/M 2	C-line S/BD/M 3
ln_raccolta	0.001	0.002	0.001	0.000	-0.005 **	-0.003	0.001	-0.002	-0.002
	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
vc_step	0.095 **	0.095 **	0.094 **	0.033	0.036	0.038	0.129 ***	0.133 ***	0.133 *
	(0.040)	(0.040)	(0.040)	(0.029)	(0.028)	(0.028)	0.047	(0.046)	(0.046)
ln_turnover_raccolta	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Laurea_r	0.289		0.273 *	-0.032		-0.192	0.240		0.070
	(0.148)		(0.165)	(0.109)		(0.116)	(0.174)		(0.190)
Master_r	-0.185		-0.211	0.218		0.051	0.033		-0.140
	(0.192)		(0.222)	(0.143)		(0.156)	(0.226)		(0.256)
imprenditore_r		0.128	0.173		-0.226	-0.202		-0.217	-0.156
		(0.392)	(0.414)		(0.276)	(0.291)		(0.451)	(0.477)
manager_r		0.136	0.083		0.292 ***	0.353 ***		0.427 ***	0.434
		(0.135)	(0.157)		(0.095)	(0.111)		(0.155)	(0.181)
professional_r		-0.298	-0.344		0.349	0.418		0.064	0.084
		(0.377)	(0.392)		(0.265)	(0.275)		(0.433)	(0.451)

Table 4.2-3: Robustness check - Fixed effect regression

	C-line S/BD 1	C-line S/BD 2	C-line S/BD 3	C-line M 1	C-line M 2	C-line M 3	C-line S/BD/M 1	C-line S/BD/M 2	C-line S/BD/M 3
ln_raccolta	0.057 **	0.063 *	0.060 *	-0.033	-0.073	-0.056	0.033	0.024	0.025
	(0.026)	(0.035)	(0.035)	(0.044)	(0.045)	(0.048)	(0.020)	(0.024)	(0.026)
vc_step	1.463 **	1.467 **	1.483 **	0.189	0.418	0.318	0.940 *	0.955 *	0.966 *
	0.684	(0.674)	(0.676)	(0.454)	(0.397)	(0.460)	(0.544)	(0.534)	(0.541)
ln_turnover_raccolta	0.007	0.005	0.006	-0.004	-0.009	-0.010	-0.001	-0.002	-0.002
	(0.015)	(0.015)	(0.015)	(0.010)	(0.011)	(0.009)	(0.008)	(0.008)	(0.008)
Laurea_r	0.301		0.952	0.403		-2.053	0.383		-0.128
	(1.293)		(1.538)	(2.199)		(2.349)	(1.119)		(1.308)
Master_r	-0.812		-0.805	4.448		2.121	0.140		-0.553
	(2.016)		(2.144)	(3.236)		(3.403)	(1.798)		(1.988)
imprenditore_r		2.937	3.314		-0.963	-1.686		0.850	1.108
		(4.447)	(4.321)		(4.515)	(4.014)		(3.205)	(3.032)
manager_r		-0.842	-1.214		4.374 **	4.223		0.671	0.902
		(2.060)	(2.326)		(1.953)	(2.605)		(1.187)	(1.420)
professional_r		-1.474	-1.936		3.705	4.437		0.901	1.227
		(3.049)	(3.890)		(4.029)	(4.053)		(2.554)	(2.952)

Table 4.2-4: Robustness check - Poisson regression

Such results help not only to further consolidate knowledge around organizational dimensions of startups going through equity crowdfunding raises, but also give consistency to the dataset used as such results are in line with previous well-known research.

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5. Conclusions

The objective of this dissertation was to find out if organizational dimensions play a role in the company's search for capital, impacting the results of the equity crowdfunding campaign, its performance, and future capabilities of raising additional capital via venture capital. In the following section the evidence collected is summarized, giving a comprehensive answer and hints for future works.

5.1 Discussion of Results

The first remarks that have been identified regard firm structure depending on the amount of funds raised, turnover and VC rounds.

From the data it is evident that the size of the organization, in terms of total headcount, follows the results of the company very much, growing with it. With the growing number of HC larger rounds of equity to sustain the business are needed (hence larger equity crowdfunding campaigns and then venture capital rounds) but also allow the company to produce more and ultimately to increase its turnover.

Equity crowdfunding campaigns and VC rounds also affect the structure, increasing its complexity, as tend to involve the creation of more C-line roles and grow the first line. This passage could be related to the greater availability of funds which allow to onboard more experienced individuals but can also have some relevant business implications. Companies can better structure themselves, creating clear reporting lines and ownership, and use it as a signaling lever to attract more capital. Only true for venture capital intervention, there is a strong correlation with high turnover in the first line, this could be driven (on a speculative note) by the fact that existing members of the C-line are exiting as the company scales since they may not be interested anymore, or they are not the right profiles for the new investors criterion and are being substituted.

A growing company, in terms of turnover and funds collected, not only tends to increase its employees and first line, but with it the diversity of roles. Indeed, it is possible to see that a flatter repartition of the employees among different departments rather than being concentrated in few *factotums* central roles. This is in line with the basic concepts of organizational design, leveraging different profiles with different expertise to maximize company capabilities and results, instead of relying on a small number of round individuals who cover for all roles.

Moving on to the analysis it has been found that there is indeed a direct positive correlation between the company organizational size, growth, and complexity with the funds that company raises through equity crowdfunding. Looking at practical business implications that this has it confirms that larger companies are able to raise more funds, hence are capable to finance their higher cash consumption while perfectioning their market fir and finding for a way to reach scale and profitability, hence it can give comfort to entrepreneurs around scaling their company size –

however this doesn't mean to hire recklessly, as the proper balance between healthy growth and failure is extremely thin. Secondly, companies with more employees, especially if they are highly skilled managers forming a solid first line of key reports, may perceive them as more trustworthy. This signaling step may help in attracting more funders and / or wealthier investors with more firepower. Lastly, companies who complete bigger rounds of funding start hiring more than the others, capitalizing on their fresh resources, investing them to boost growth and get a hedge over the competition.

Furthermore, it has been verified that organizational dimensions do impact the likelihood of a company completing a following round of venture capital. From the data it would seem that the probability grows as the number of headcounts grows, as the speed of hiring increases and the structure of the firm. Being VC funds specialized entities, whose profession is investing in early-stage companies, it is key that firms find ways to properly signal their potential. These funds do not only invest in companies based on their business model and industry, which clearly are some of the main drivers, but also in the company itself, meaning its employees. It is crucial for early-stage ventures to have the right leaders and people with the correct entrepreneurial mindset to maximize its chances of success. Therefore, having a structured organizational chart, leaded by several key managers with relevant previous experience and proper mindset, as well as a track record of well-fitting hirings, can make the difference in convincing or not venture capitalists to invest and believe in the company growth and success.

These results show how much such an underexplored roam of equity crowdfunding can be part of crucial processes in the evolution of a company. Entrepreneurs should all be aware of what to expect after such campaigns and start planning ahead with

their long term strategy. As per the presented founding, founders should project ahead of time the organizational design that they want to give to their company before even launching the campaign, balancing total headcount size and key management roles, to increase round size and chances. Simultaneously they should already plan in advance their next steps, with a well-defined hiring plan and roles within the company, maximizing the obtainable benefits from the round and growing the company. Within this second phase the organizational structuring should follow a precise path, that is preparing the firm to raise Venture Capital funds; in order to do so the correct profiles to cover management positions should be promoted / hired, in order to avoid turbulent changes after the raise, as well as anticipate the use of funds and allocate proper budget on new hirings. Such knowledge can also help to select their investments rationally better, including in their evaluations also the company organizational design and future hiring plans.

All in all, to finally answer if organizational dimensions do matter are related to equity crowdfunding, the answer is yes. Equity crowdfunding can be a great lever to drive faster headcount growth and restructuring, hence it is important that entrepreneurs, managers, and investors are aware of the how relevant a properly designed organization to maximize chances of success and hinder the least possible their growth path.

5.2 Limitations of the Study and Future Research

This is the first study that goes in the direction of analyzing how organizational dimensions affect and relate to the growth and success of a company. Exactly for this

reason this is just the first of many more steps that should be done to deepen the understandings of such complex roam.

Even though the results obtained are in line with previous studies and are logically correct, a very recommended step forward could be to collect the organizational data directly from the firms as Hellman & Puri did in their paper. Such improvement would allow to overcome limitations around data quality and completeness (listed below) but may also open to the possibility of having more granular information concerning payroll, stock plans, and better profiling of the candidates, giving the opportunity to develop a more robust and complete analysis.

As just mentioned, part of the study limitations come from the underlying data itself, as regardless of the effort put into the collection process, the retrieved information probably holds a degree of bias and inaccuracy which should be acknowledged and kept in consideration when looking at the results. Such imperfections could stem from the data source (LinkedIn) and the following transformations performed on the input data.

Firstly, it must be acknowledged that LinkedIn is a platform where individuals can voluntarily join and create their profile, and therefore, the information they provide may not always be accurate or complete. There is no limitation to what decide to report in their profiles, meaning that the information shared may not necessarily reflect their actual work experience, qualifications, and their tenure in a certain company. Moreover, not all individuals may have a LinkedIn profile, and those who do may choose to not include certain information on their profiles.

Secondly, part of the data transformation performed to move from the input data to the aggregated company view contains, to a certain degree, a level of subjectivity. The

variables concerned are the variables *Is Cline* and *Department*. In the former case, the list job titles corresponding to key company positions (such as Chief Product Officer) has been decided and based on my experience, as there is no universal list of job titles unequivocally describing key roles and every different company structures its organizational chart in such a way that covers its necessities and not around job titles. For the latter, there is the chance that a misreported job title ends up misclassifying some people, allocating them in the wrong department, or it is also possible that, even though the job title is appropriate, in reality that person dedicates most of his time to other activities and therefore should be classified within a different bucket.

These two factors combined create the possibility of missing or inaccurate information being included in the data collected, as well as partially biased classification of company key roles and departments, possibly affecting the representativeness and reliability of the data.

Another relevant point of attention concerns the typology of companies which have been mapped. As previously mentioned, not all firms had been successfully tracked due to a combination of non-existing LinkedIn profiles and size. Hence among the various limitations it's necessary to consider that in this analysis firms which are very small and do not have LinkedIn pages, as well as those too big to be tracked (those with hundreds of employees to be mapped), are excluded from the analysis. This leaves a subset of companies which are below c.a. 50 active employees, and that have not failed as it would have meant LinkedIn page cancellation and impossibility to track.

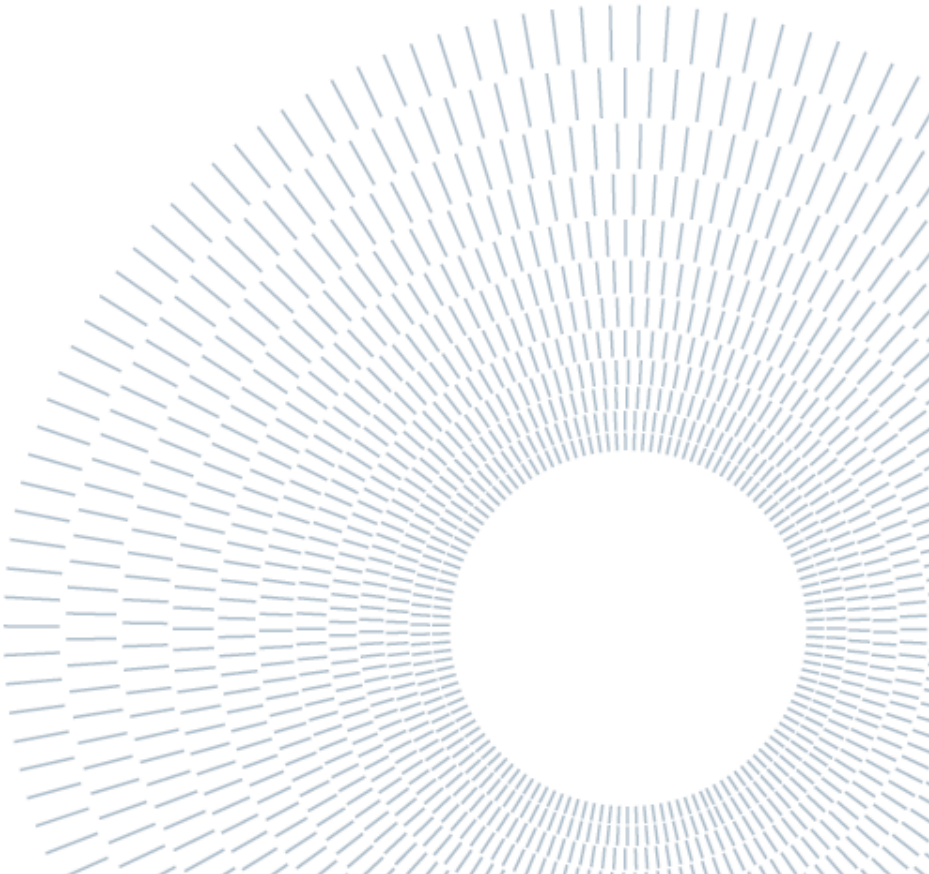
After the issue of data quality, future studies will have to further evaluate the possibility of a correlation between the organizational dimensions analyzed, the company size and the crowdfunding process. Despite initial steps taken into this

direction with instrumental-variable regressions to establish whether the causal relationship holds, results are unclear and may a larger number of datapoints or more precise organizational data could help to obtain clearer results. If it should be proven that there is actual causality between crowdfunding and the changes in the organizational dimensions, then entrepreneurs can keep seeking the raise these funds to boost their company growth and increase the likelihood of obtaining subsequent rounds of VC. However, if there is some degree of correlation, this may limit crowdfunding benefits, requiring certain initial sizes or other variables should be considered to drill down to the key lever impacting business growth.

Another interesting research could gravitate around the network of investors participating in the equity crowdfunding campaign. Different network participants and structure may affect how the company evolves and therefore how structures its organizational structure.

This research has been conducted only on Italian startups, whereas it would be very interesting to verify if such results hold true in other markets or if they differ, hence proving a more complete overview.

To conclude, the list of additional information which could be pieced together is actually very wide, being a completely unexplored roam, such that any other valuable insight coming from future research will be crucial to further develop theoretical and practical knowledge around the relationship between organizational variables and equity crowdfunding world.



6. Bibliography

7° REPORT ITALIANO SUL CROWDINVESTING (2022) Politecnico di Milano – Dipartimento di Ingegneria Gestionale, Osservatori Entrepreneurship Finance & Innovation

A.E. Colbert, M.R. Barrick, B.H. Bradley, 2014, Personality and leadership composition in top management teams: Implications for organizational effectiveness, Personnel Psychology, 67 (2) (2014), pp. 351-387

Arenas, A., Goh, J. M., & Podar, M. (2015). A work-systems approach to classifying risks in crowdfunding Platforms: an exploratory analysis. Paper presented at the American Conference on Information Systems (AMCIS), August, Puerto Rico, Brazil

Arsawan et al., 2022, Developing Organizational Agility in SMEs: An Investigation of Innovation's Roles and Strategic Flexibility, Journal of Open Innovation: Technology, Market, and Complexity, Volume 8, Issue 3

Bartels, Brandom, 2008, Beyond "Fixed Versus Random Effects": A framework for improving substantive and statistical analysis of panel, time-series cross-sectional, and multilevel data", Stony Brook University, working paper

Belleflamme, P., Omrani, N., & Peitz, M., 2015, The economics of crowdfunding platforms. Information Economics and Policy, 33, 11–28

Bodily S.E., 2016, Reducing risk and improving incentives in funding entrepreneurs, Decision Analysis, Volume 13, Issue 2, Pages: 101-116

Burze Yasar, 2021, The new investment landscape: Equity crowdfunding, Central Bank Review, Volume 21, Issue 1, Pages 1-16

Buyl, T., T. Buyl, C. Boone, W. Hendriks, P. Matthyssens, 2011, Top management team functional diversity and firm performance: The moderating role of CEO characteristics, Journal of Management Studies, 48 (1) (2011), pp. 151-177

Cardon, M. S., & Stevens, C. E., 2004, Managing human resources in small organizations: What do we know? Human Resource Management Review, 14(3), 295–323

Chiara Franco, Fabio Landini, 2022, Organizational drivers of innovation: The role of workforce agility, Research Policy, Volume 51, Issue 2

Colombo, M. G., & Grilli, L. (2010). On growth drivers of high-tech start-ups: Exploring the role of founders' human capital and venture capital. Journal of Business Venturing, 25(6), 610–626

Dabić et al., 2021, Intellectual agility and innovation in micro and small businesses: The mediating role of entrepreneurial leadership, Journal of Business Research, Volume 123, Pages 683-695

Daniele Leone, Maria Cristina Pietronudo, Heger Gabteni, Maria Rosaria Carli, 2023, Reward-based crowdfunding for building a valuable circular business model, Journal of Business Research, Volume 157

David Teece, Margaret Peteraf, Shove Leih, 2016, Dynamic Capabilities and Organizational Agility: Risk, Uncertainty and Entrepreneurial Management in the Innovation Economy, California Management Review, 58 (4), pp. 13-35

Di Pietro F., 2021, The rationale for listing on equity crowdfunding: actual and expected benefits for companies, Journal of Industrial and Business Economics, Volume 48, Issue 4, Pages: 527-549

Eisenhardt, K. M., Schoonhoven, C. B., 1990. Organizational growth: Linking founding team, strategy, environment, and growth among US semiconductor ventures, 1978-1988. Administrative Science Quarterly, 504-529

Fang-Yi Lo, Pao-Hung Fu, 2016, The interaction of chief executive officer and top management team on organization performance, Journal of Business Research, Volume 69, Issue 6, Pages 2182-2186

Fort, T. C., Haltiwanger, J., Jarmin, R. S., & Miranda, J., 2013. How firms respond to business cycles: The role of firm age and firm size. IMF Economic Review, 61(3), 520–559

Grundy, D., & Ohmer, C., 2016, German crowd-investing platforms: literature review and survey. Cogent Business & Management, 3(1), 1–20

Hamel, G., Välikangas, L., 2003, The Quest for Resilience, Harvard Business Review, 81 (9), pp. 52-63+131

Hornuf, L., Schwienbacher, A., 2018. Market mechanisms and funding dynamics in equity crowdfunding. J. Corp. Finan. 50, 556–574

Löher, J., 2016. The interaction of equity crowdfunding platforms and ventures: an analysis of the preselection process. Venture Capital: An International Journal of entrepreneurial finance, 19(1–2), 51–74

Louise Bech Junge et al, 2021, Choosing crowdfunding: Why do entrepreneurs choose to engage in crowdfunding?, Copenhagen Business School

Lukkarinen & Schwienbacher, 2023, Secondary market listings in equity crowdfunding: The missing link?, Research Policy, Issue 1, Volume 52

M. Meoli & S. Vismara, 2021, Information manipulation in equity crowdfunding markets, Journal of Corporate Finance, Volume 67

Mahlagha Darvishmotevali, Levent Altinay, Mehmet Ali Köseoglu, 2020, The link between environmental uncertainty, organizational agility, and organizational creativity in the hotel industry, International Journal of Hospitality Management, Volume 87

Mochkabadi, K., Volkmann, C.K., 2020 Equity crowdfunding: a systematic review of the literature. Small Bus Econ 54, 75–118

Moser, K. J., Tumasjan, A., & Welpe, I. M., 2017, Small but attractive: Dimensions of new venture employer attractiveness and the moderating role of applicants' entrepreneurial behaviors. Journal of Business Venturing, 32(5), 588–610

Piva, E., Stroe, S., 2022, New ventures fighting the war for talents: the impact of product innovativeness and entrepreneurs' passion on applicant attraction. Small Bus Econ

Podar M., Arenas A.E., Goh J.M., 2015, A work-system approach to classifying risks in crowdfunding platforms: An exploratory analysis, 2015 Americas Conference on Information Systems, AMCIS 2015

Reeves, M., Deimler, M., 2011, Adaptability: The new competitive advantage, Harvard Business Review, 89 (7-8), p. 7.

Rick Dove, 2001, Response ability: the language, structure, and culture of the agile enterprise, John Wiley & Sons, New York

Saul et. al, 2018, The evolution and adoption of equity crowdfunding: entrepreneur and investor entry into a new market, Volume 51, Issue 2, Pages 425 – 439

Sull, D.N., 1999, Why good companies go bad, Harvard business review, 77 (4), pp. 42-48, 50-52, 183

T. Hellmann, 2002, Venture Capital and the Professionalization of Start-Up Firms - Empirical, The Journal of Finance, Volume 57, Issue 1, Pages 169-197

Teece, D.J., Pisano, G., Shuen, A., 1997, Dynamic capabilities and strategic management, Strategic Management Journal, 18 (7), pp. 509-533

Tumasjan, A., Strobel, M., & Welpe, I. M., 2011, Employer brand building for start-ups: Which job attributes do employees value most? Zeitschrift Für Betriebswirtschaft, 81(6), 111–136

V. Butticè, F. Di Pietro, F. Tenca, 2020, Is equity crowdfunding always good? Deal structure and the attraction of venture capital investors, Volume 65

Valeria Stefanelli, Greta Benedetta Ferilli, Vittorio Boscia, 2022, Exploring the lending business crowdfunding to support SMEs' financing decisions, Journal of Innovation & Knowledge, Volume 7, Issue 4

Vismara, S., 2016, Equity retention and social network theory in equity crowdfunding. Small Business Economics, 46(4), 579–590

Vulkan et al., 2016, Equity crowdfunding: a new phenomena, Journal of Business Venturing Insights, 5 (2016), pp. 37-49

Williamson I. O., Cable D. M., Aldrich H. E., 2002, Smaller but not necessarily weaker: How small businesses can overcome barriers to recruitment. In: Katz J, Lumpkin T (eds) Managing people in entrepreneurial organizations (Advances in entrepreneurship, firm emergence and growth, vol 5). Emerald Group Publishing Limited, West Yorkshire, 83–106

Yali Zhang, Chrissie Diane Tan, Jun Sun, Zhaojun Yang, 2020, Why do people patronize donation-based crowdfunding platforms? An activity perspective of critical success factors, Computers in Human Behavior, Volume 112

7. Appendix

Sito web	Società gestore	Data autorizzazione
Starsup.it	Starsup Srl	18/10/2013
Actioncrowd.it	Action crowd Srl	26/2/2014
200crowd.com	The Ing Project Srl	18/6/2014
Nextequity.it	Next equity crowdfunding marche Srl	16/7/2014
Crowdfundme.it	Crowdfundme SpA	30/7/2014 (*) (**)
Muumlab.com	Muum lab Srl	6/8/2014
Mamacrowd.com	Siamosoci Srl	6/8/2014
Fundera.it	Fundera Srl	10/9/2014 (*)
Ecomill.it	Ecomill Srl	29/10/2014
Wearestarting.it	Wearestarting Srl	16/12/2014
Backtowork24.com	Backtowork24 Srl	14/1/2015 (**)
Investi-re.it	Baldi Finance SpA	28/1/2015
Opstart.it	Opstart Srl	11/11/2015 (*) (**)
Clubdealonline.com	Clubdeal Srl	8/3/2017
Walliance.eu	Walliance SpA	30/3/2017
Ideacrowdfunding.it	Idea Crowdfunding Srl	29/11/2017
Thebestequity.com	Gamga Srl	14/3/2018 (*)
Concreteinvesting.com	Concrete Srl	24/4/2018
It.lita.co	1001Pact Italy Srl	31/5/2018
Lifeseeder.com	Lifeseeder SpA	28/6/2018
Crowdinvestitalia.it	Crowdinvest Srl	10/7/2018
House4crowd.com	4crowd SpA	17/7/2018
Doorwayplatform.com	Doorway Srl	28/11/2018
Buildaround.eu	Build Around Srl	12/12/2018
Mediterraneacrowd.it	Start Funding Srl	4/6/2019
Forcrowd.it	Forcrowd Srl	12/6/2019
Mybestinvest.it	Meridian 180 Srl	18/9/2019
Hensoo.it	Wedeal Srl	31/10/2019
Fundyourjump.eu	Equifunding Srl	22/4/2020
Activant.eu	Activant Srl	6/5/2020
Pariterequity.com	Pariter equity Srl	20/5/2020
Re-anima.com	Re-Anima Srl	15/7/2020
Nestmoney.it	Finanza condivisa Srl	29/7/2020 (**)
Fundscovery.com	Etianus Srl	16/9/2020
Puzzlefunding.com	Puzzle Funding Srl	21/10/2020
Foxcrowd.it	Foxcrowd Srl	22/12/2020
Upsidetown.it	Upsidetown Srl	22/12/2020
Bildap.eu	Bildap Srl	13/1/2021
2meet2biz.com	Migliora Srl	13/1/2021 (*) (**)
Realre.it	Fenice Crowd Srl	7/4/2021
Brickup.it	Brickup Srl	22/4/2021
Agri4crowd.com	Agri4crowd Srl	19/5/2021
X.azimutdirect.it	Azimut Direct X Srl	17/6/2021 (*)
Reroi.it	Reroi Srl	15/9/2021 (*)
Exrecrowdfunding.it	Exre Crowdfunding Srl	3/11/2021 (**)
Firmaid.it	Firmaid Srl	3/11/2021 (*)
Finnexta.it	Innexta Scrl	3/11/2021
Partnersincrowd.it	Partnersincrowd Srl	3/11/2021
Equity.trusters.it	Trusters EMT Srl	3/11/2021
Y-crowd.com	Y-Crowd Srl	3/11/2021 (**)
Myrestartup.it	Restartup Srl	11/11/2021

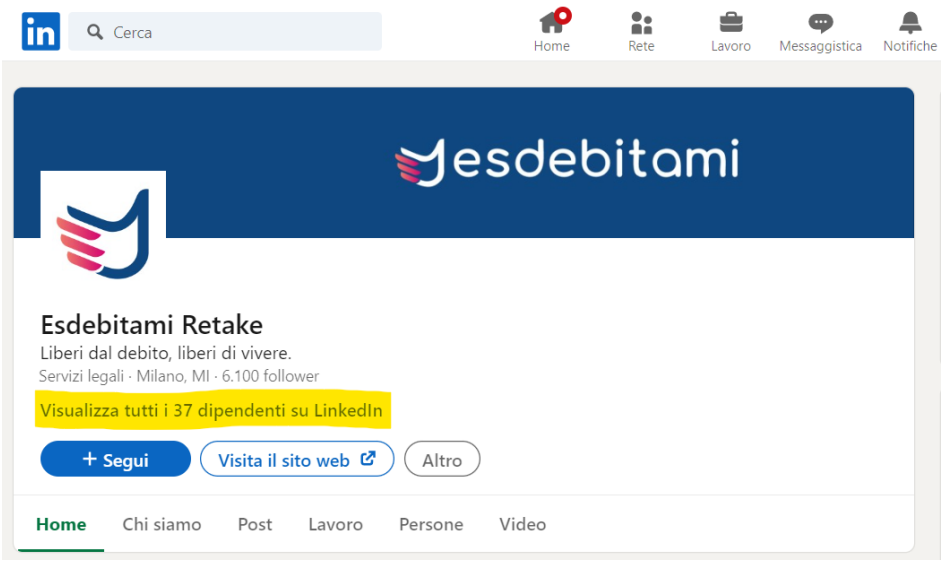
(*) = authorization for the placement of bonds or debt securities too

(**) = authorized for electronic notice board too

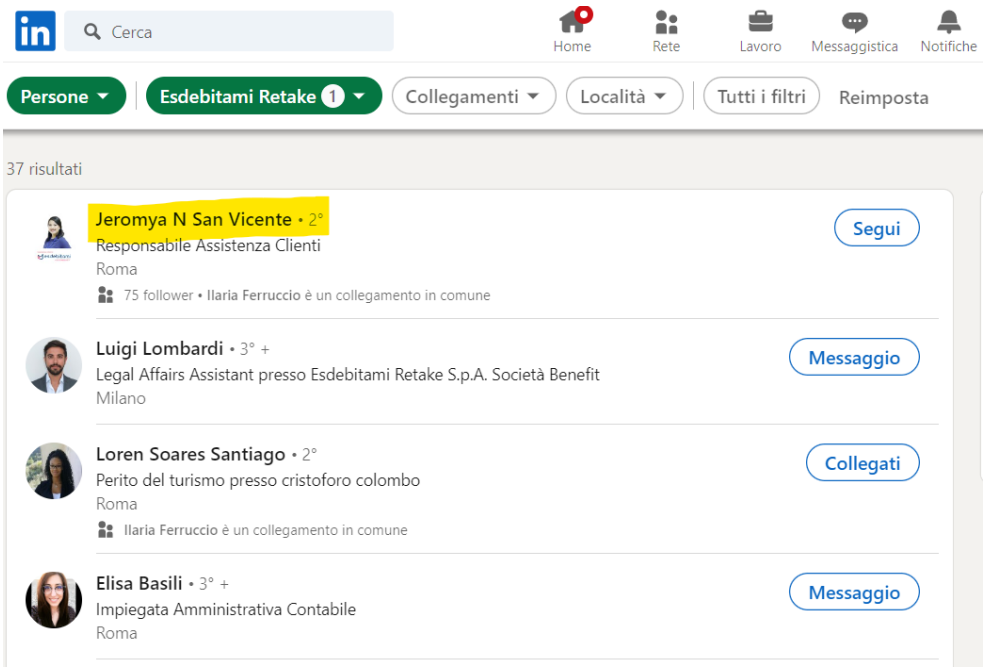
Table 5.2-1: Portals authorized by Consob to propose equity crowdfunding campaigns – Italy, 6/30/2022

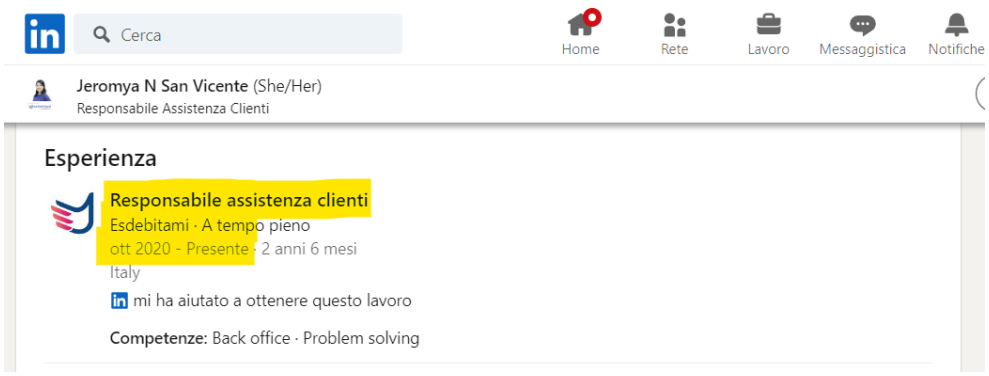
7.1 Example of the data collection - Esdebitami Retake

Step 1: Find company on LinkedIn and go to the "Employees" section



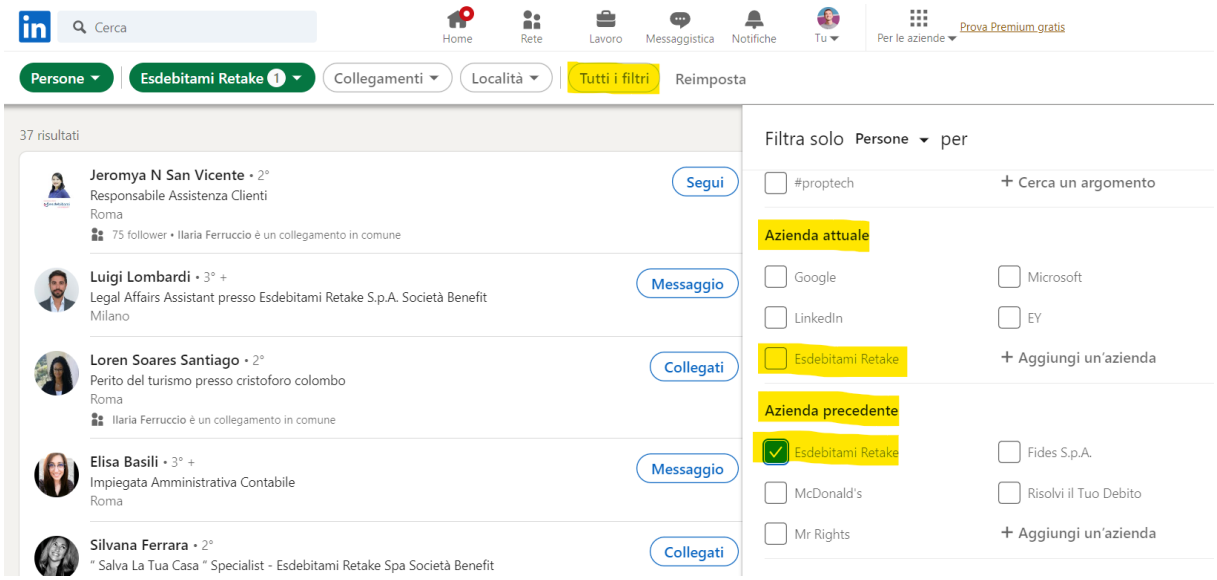
Step 2: Open each individual profile and look for their experience in the company





Step 3: Fill these information in the excel tracker file

Step 4: Once completed the process for current employees filter for past employees and repeat. To do so go on "Tutti i filtri" → tick the company in the "Azienda precedente" section and unselect it from the "Azienda attuale" section



8. Stata Code - Regression

```
xtset cfpiva year, yearly

gen professionalcf_step = professionalcf if year>=year_ecf
replace professionalcf_step =0 if professionalcf_step ==.& professionalcf!=.
global var "laureacf_step mastercf_step imprenditorecf_step managercf_step
professionalcf_step"

foreach var of varlist $var {
        gen `var'r= `var'/numeroinvestitori
}

gen ln_ratio_totalasset_ecf = ln(totalassetstheur/raccolto)
gen ln_ratio_totalasset_ecf_step = ln_ratio_totalasset_ecf if year>=year_ecf
replace ln_ratio_totalasset_ecf_step=0 if ln_ratio_totalasset_ecf_step==.&
ln_ratio_totalasset_ecf!=.

gen ln_sales = ln(salestheur)
gen ln_sales_step = ln_sales if year>=year_ecf
replace ln_sales_step=0 if ln_sales_step==.& ln_sales!=.

gen ln_ratio_turnover_ecf = ln(turnoverth/raccolto)
gen ln_ratio_turnover_ecf_step=ln_ratio_turnover_ecf if year>=year_ecf
replace ln_ratio_turnover_ecf_step=0 if
ln_ratio_turnover_ecf_step==.&ln_ratio_turnover_ecf!=.

gen ln_ratio_sales_ecf = ln(salestheur/raccolto)
gen ln_ratio_sales_ecf_step=ln_ratio_sales_ecf if year>=year_ecf
replace ln_ratio_sales_ecf_step=0 if ln_ratio_sales_ecf_step==.&ln_ratio_sales_ecf!=.

global inv "laureacf_stepr mastercf_stepr imprenditorecf_stepr managercf_stepr
professionalcf_stepr"
global inv1 "laureacf_stepr mastercf_stepr"
global inv2 "imprenditorecf_stepr managercf_stepr professionalcf_stepr"

 global controls "ln_raccolta_step vc_step ln_ratio_turnover_ecf_step"
```

```
global var "totalhc clinevp deltaabs"
gen ln_totalhc=ln(totalhc+1)
gen ln_clinevp=ln(clinevp+1)
gen ln_deltaabs=ln(deltaabs+1)

foreach var of varlist $var {
qui xtreg ln_`var' $inv1 $controls, fe
est store `var'fe1
qui xtpoisson `var' $inv1 $controls, r
est store `var'po1
qui xtreg ln_`var' $inv2 $controls, fe
est store `var'fe2
qui xtpoisson `var' $inv2 $controls, r
est store `var'po2
 qui xtreg ln_`var' $inv $controls, fe
est store `var'fe3
qui xtpoisson `var' $inv $controls, r
est store `var'po3
}
estout totalhcfe1 totalhcfe2 totalhcfe3 deltaabsfe1 deltaabsfe2 deltaabsfe3 clinevpfe1
clinevpfe2 clinevpfe3, cells(b(star fmt(%9.3f)) se(par)) stats(ll r2 n, fmt(%9.3f %9.0g)
labels(log-likelihood r-quadro obs)) drop(_cons) starlevels(* 0.10 ** 0.05 *** 0.01)
estout totalhcpo1 totalhcpo2 totalhcpo3 deltaabspo1 deltaabspo2 deltaabspo3
clinevppo1 clinevppo2 clinevppo3, cells(b(star fmt(%9.3f)) se(par)) stats(ll r2 n,
fmt(%9.3f %9.0g) labels(log-likelihood r-quadro obs)) drop(_cons) starlevels(* 0.10 **
0.05 *** 0.01)

global controls "ln_raccolta_step vc_step ln_ratio_turnover_ecf_step"

global var "cline_sbd cline_m cline_sbdm"
gen ln_cline_sbd=ln(cline_sbd+1)
gen ln_cline_m=ln(cline_m+1)
gen ln_cline_sbdm=ln(cline_sbdm +1)

foreach var of varlist $var {
qui xtreg ln_`var' $inv1 $controls, fe
est store `var'fe1
qui xtpoisson `var' $inv1 $controls, r
est store `var'po1
qui xtreg ln_`var' $inv2 $controls, fe
est store `var'fe2
```

```
qui xtpoisson `var' $inv2 $controls, r
est store `var'po2
 qui xtreg ln_`var' $inv $controls, fe
est store `var'fe3
qui xtpoisson `var' $inv $controls, r
est store `var'po3
}

estout cline_sbdfe1 cline_sbdfe2 cline_sbdfe3 cline_mfe1 cline_mfe2 cline_mfe3
cline_sbdmfe1 cline_sbdmfe2 cline_sbdmfe3, cells(b(star fmt(%9.3f)) se(par)) stats(ll
r2 n, fmt(%9.3f %9.0g) labels(log-likelihood r-quadro obs)) drop(_cons) starlevels(*
0.10 ** 0.05 *** 0.01)

estout cline_sbdpo1 cline_sbdpo2 cline_sbdpo3 cline_mpo1 cline_mpo2 cline_mpo3
cline_sbdmpo1 cline_sbdmpo2 cline_sbdmpo3, cells(b(star fmt(%9.3f)) se(par))
stats(ll r2 n, fmt(%9.3f %9.0g) labels(log-likelihood r-quadro obs)) drop(_cons)
starlevels(* 0.10 ** 0.05 *** 0.01)
```

9. Stata Code – T-tests

```
global camp "above_median_raccolta above_median_turnover vc_step"

foreach var of varlist $camp {
        display "`var'"
        display "HIGH"
        sum totalhc clinevp clinechanges newclinerole newceo corporate staff
        marketing rd design operations businessdevelopment sales cline_sbd cline_m
        cline_sbdm deltayoyhc if `var'==1&is_campaign==1
        display "LOW"
        sum totalhc clinevp clinechanges newclinerole newceo corporate staff
        marketing rd design operations businessdevelopment sales cline_sbd cline_m
        cline_sbdm deltayoyhc if `var'==0&is_campaign ==1
}

global var “totalhc clinevp clinechanges newclinerole newceo corporate staff
marketing rd design operations businessdevelopment sales cline_sbd cline_m
cline_sbdm deltayoyhc”

foreach var of varlist $camp {
        foreach org of varlist $var {
                display "ttest `org' by `var'"
                ttest `org' if is_campaign==1, by(`var')
        }
}
```