The Matthew effect and Pareto Distribution in Startup Funding

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Abstract

Most early-stage startups have a hard time getting funding from investors. This also means that bright ideas coming from early-stage startups may fail to see the light of day and die even before they make a real impact on society. Careful consideration of literature has pointed to two factors for the low investment in early startups; the Matthew effect and the Pareto Distribution. This paper highlights how these two effects negatively impact the funding opportunities for early-stage startups by reviewing literature that highlights how investors choose to invest in different types of startups over others. The literature has highlighted that startups with longer business traction and more connections tend to be funded the most.

In contrast, those with little business traction and minimum connections get funded the least, hence indicating the Matthew Effect. Also, literature has highlighted that investors are clustering their investments to realize maximum gains from the niche areas they choose to invest in, indicating the Pareto Distribution, or 80/20 rule. Implications from this are important for early-stage startups that wish to find leverage to maximize their chances of getting funded while in their early stages.

Key Words: Investors, Venture Capital, Investment, Startup, Angel, Funding.

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Introduction

Startups face a myriad of challenges that stem from within and without. Within, there is the problem of, but not limited to, team integration, cash flows, meeting customer expectations, and setting the right goals and focus for the company. Externally, there is the problem of competition, legislation, and, importantly, funding (Petrů, Pavlák and Polák, 2019). Funding is what determines whether the startup will grow from its nascent stages to larger customer bases or not. Funding is mostly done using various forms such as venture capital, Angel investors, friends and family, and even bootstrapping for some startups. However, today, a majority of startups use venture capital and Angels for their startup funding. Unfortunately, not all startups get funding from these sources, given that Angels are known to fund startups that are mostly in their early stages (Crick and Crick, 2018), two effects that may characterize startup funding: The Matthew effect and the Pareto distribution curve. This while venture capitalists are more focused on funding startups with high growth projections (Thies et al., 2018). These differences prompt this paper to highlight a paper that will extrapolate more on how these two effects can be seen within the startup scene, with a specific focus on Greece.

The Matthew Effect on Startup Funding

The Matthew effect is coined from the Bible book of Matthew, Chapter 13 verse 12 (Matthew 13:12) NIV, which states: *"Whoever has will be given more, and they will have abundance. Whoever does not have, even what they have, will be taken from them."* Within the context of finance, this has translated to mean that the rich will get richer while the poor, poorer (Rigney, 2010). Scholars have used this saying on various issues, with a specific interest in investment and finance. For instance, (Berger and Kuckertz, 2018) noted that new startup entrants in a status-dominated environment have a higher chance of losing funding. This owes to the fact that new entrants specifically lack a proven track record of business and also link to bigger key players. New startups may find it difficult to acquire the necessary resources needed for them to grow and succeed. Simultaneously, already established businesses will have an easier time getting the needed resources, thereby attesting to the adage that the rich get richer and the poor poorer. For new startups acting within environments dominated by older players, (Berger and Kuckertz, 2018) noted that finding a way to learn the ropes from older players through syndicated deals, together with joining a syndicate that contains high-value partners, maybe a way through which new entrants can overcome the problem of newness, and thus also mitigate the Matthew Effect.

Greece is good ground for startups, with € 1 billion set aside as investment money for early-stage and growth-stage startups (Antoniades et al., 2018). It is also noted that securing funding is one of the major challenges that the youngest startups face, making it almost impossible for many a vibrant idea to see the light of day (Sidiropoulos, 2016). It is also further noted that early-stage startups might opt to bootstrap their ideas. However, this is limited. The resources and funding available through bootstrapping may not be enough to take the startup, say within IT, from its beta version (Sidiropoulos, 2016). Hence, the startup may have a weak point from where to grow their business. Hence, these early-stage startups must move from their bootstrapping to finding funding that can adequately provide the development of the startup idea to one where customers can pay for a good or service (Hyz, 2011). The common startup life cycle is illustrated in Figure 1 below:

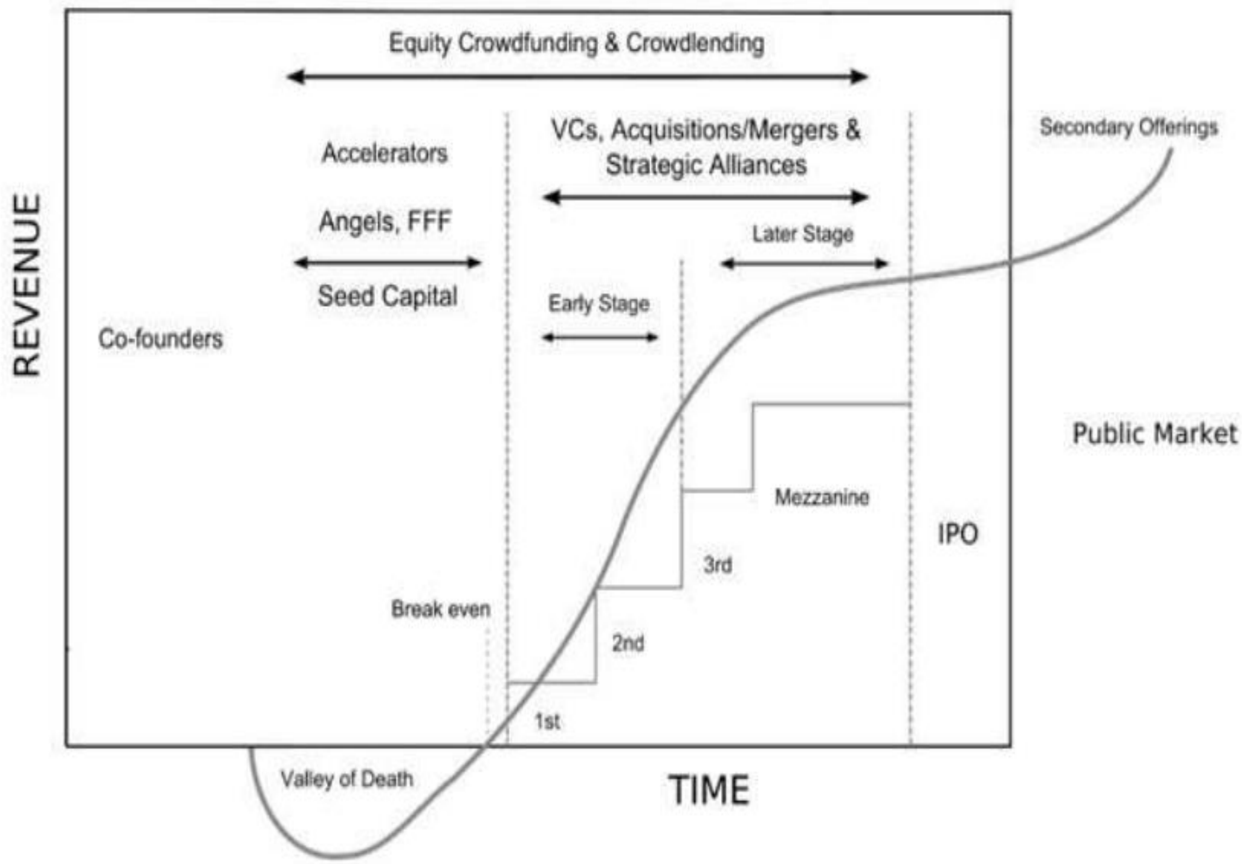

Figure 1: Startup Finance Lifecycle

Source: (Sidiropoulos, 2016)

An investigation into the Greek IT startup founder's perception, views, and strategies used with their IT startups to ensure success was conducted (Spyropoulos 2019). The investigation involved using questionnaires to gather data from 120 startups that had completed one round of accelerator program, and that was participation in an exhibition as startup companies. The gathered data was encoded, followed by statistical analysis for the correlation of collected variables. These variables included success, age, education, experience, competition from disruptive startups, funding, among others. Results indicated that founders that had previous experience in starting and growing a business found it easier to find funding earlier on, indicating that the funders and financiers were confident with startup founders who had a track record of success. This may allude to the Matthew effect in that advantage begets further advantage (Perc, 2014). In effect, startup founders who have a track record of starting and running businesses that have turned out to be successful are more likely to get funding than those with little to show for business success. The premise is that for one to invest in a startup, they must at least gauge that their investment would bear fruit and make them some return.

Greece has in the recent past found favorable attention in terms of foreigners choosing to invest in the country. (Enterprise Greece, 2019) reported that Athens was selected by 17% of European founders as a good place to start a business. Key among the reasons given was the value for money that 88% of the founders cited. (Enterprise Greece, 2019) further highlighted the profiles of the Greek startups that received the most funding between 2018 and the current time. The report outlined the characteristics of these startups, noting that at least 17.1% of these startups operated in industrial technology, within the category of production hardware.

The ten most funded startups in 2018 had characteristics that included having been in operation for 6.67 years, having received 2.9 funding rounds, with half of these startups having a branch in the US, had received their first round of funding 5 years after starting up their businesses, had offices in 3 countries, had 5.22 number of investors, and had between 51-100 number of employees. From these statistics, it is clear that these startups had been in business for some time before getting funding from their investors, whose makeup largely comprised Angel's investors and Venture Capital investors. It is mostly postulated that only one in three startups achieve some profits within the first six years of operation (Reynolds, 2016). Other scholars note that it is highly likely that most startups will fail within the first few years of existence (Davila et al., 2014).

The failure of the youngest startups is further extrapolated in (Davila et al., 2014), who noted that companies that had a positive growth by their third year were more likely to have a sequence in their fourth and fifth years of one or two revenue declines. The major factor noted to contribute to this decline was internal factors such as inexperienced management, lack of knowledge of competitors, lack of focus, lack of professional advice, and a declining market base. Further, (Finkelstein 2001) noted that there were as many internet startups that ventured into business during the age of the internet (dot com era). Still, despite the excitement and high expectations from these startups, they were at a significant disadvantage when faced with competitors such as old economy companies.

These disadvantages stemmed from the fact that the internet companies could not match the advantages that older economy companies had, such as a lack of understanding of their customers, putting markets behind technology, as well as succumbing to bureaucracy, factors which (Finkelstein, 2001) considers as a strategy that the then internet companies needed to take into consideration when thinking of growth. This study is important in highlighting these reasons. It can be postulated that investors may have such knowledge when selecting which startups to fund and may thus favor startups that have been in operation for more than 5 years and whose track record positively signals success. The younger startups may thus lack funding or receive little funding during their earlier years of operation.

(Sidiropoulos, 2016) further noted that seed capital is one way through which the early-stage startups in Greece may get funding for startups that is one year (and less) old, with the seed funding coming from private and public investors. These seed capital investors are not given to anyone startup; the startup has to have a strong business model for it to get any seed funding. This is what now points to the Pareto distribution in startup funding.

Pareto Distribution in Startup Funding

Pareto distribution is concerned with observing social phenomena within society, such as that 20% of the society is made up of wealthy individuals, who in turn hold 80%of the resources within these societies. Within finance, it is postulated that 20% of the effort results in 80% of profits or gains. Hence, through this observation, both the investor and startup can focus on what brings them the most benefit from their given business or investment activities. Within the investment circle, it can be postulated that 20% of the investors invested in are what bring them 80% of profits.

More appropriately within the investment, the 80/20 rule is applicable through loss ratios, the ratio of losses to gains. It is observed that insurers who had a high return on assets within insurance tended to purchase less reinsurance. In comparison, insurers with low returns on assets tended to purchase more reinsurance and had low performance on their assets (Lee and Lee, 2012). This relationship can be further analyzed within investment [portfolios, as stated earlier, where the investors may decide to focus more on the startups that they deem would give them higher returns than those that would only give minimum returns. For instance, it has been stated that Angel investors focus on investing in startups that need seed funding, which is often less than or 1 year old. Returns on these startups may take more time to realize compared with those of much older startups.

On the other hand, venture capitals focus on startups that have very high chances of profitability and may thus choose to invest only in startups that are already making profits. VCs may segregate the higher return investment from the low return investments within their portfolio and use this to gauge their next move in investment. For instance, given the current Covid-19 pandemic, some investors have chosen to focus on their current portfolio and not invest in new ventures. These investors have also turned to technology companies that focus on social impact as future investment options (The Collider, 2020). These points to the 80/20 rule, where investors are now focusing not on the quantity of businesses or startups they fund but on their quality in getting favorable returns on their investment. Other funding programs within Greece also focus on niche areas of specialization where they realize that they get more returns on their investment rather than on having segments of businesses from different sectors. This is noted in (Greek News Agenda, 2020), where funding organizations such as Horizon 2020 are focusing on funding science projects geared towards tackling societal changes and industrial leadership to improve the delivery of innovation to society. (Grigoriadou, 2020) further noted the clustering of investors. The banking sector provides different avenues where the small and micro enterprises can receive funding, based on the cluster type and requirements for funding the said SMEs.

This clustering points to the niche investors wish to focus on to realize some gains from their investments. To complete this section of the paper, an analogy can illustrate how the small things we do are what may impact us the most. A study in India (Jain, 2020) on fast food consumption found that the number of unhealthy eating habits and negative health outcomes were a result of fast food consumption. The Indian government saw it fit to curb this problem by imposing a ‘fat tax’ on all the fast-food products in the country. Though the ‘fat tax’ may be small, the outcome of this taxation transcends the costs of buying fast food and includes the positive health outcomes that come from minimizing consumption of fast foods. Hence, the benefits of healthy eating far outweigh the costs imposed on fast food in India.

Conclusion

The Matthew effect on startup funding is an interesting topic to consider given the nature of startup funding. A careful analysis of the literature has highlighted that the startups that have a better advantage in terms of business traction and connections also gain the most funding. In contrast, those with minimal traction and connections get little to no funding from investors. Early-stage startups need to have this knowledge at hand to look for ways to maximize their chances of getting funded. In effect, these changes can be viewed under the Pareto distribution, where the little that we do (20%) contributes too much of what we gain (80%). Hence, while investors would focus more on investments where they will gain the most returns, startups will focus on areas where they can leverage to gain better chances of being funded.

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