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Crowdfunding and learning

The determinants of successful completion of campaign, excess funding and pledged-goal ratio

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PREFACE AND ACKNOWLEDGEMENTS

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ABSTRACT

This thesis examines the probability of successfulness of the crowdfunding campaigns, the excess project funding, and the pledged/goal ratio. The goal of the thesis is to determine how the funding per backer, comment popularity, update popularity, pace of collecting and the number of rewards of campaigners affect the successful completion of crowdfunding campaigns, the excess funding, and the pledged/goal ratio. Findings show that campaigns with a shorter funding period are more successful than the ones with a longer period of funding. The wider choice of rewards to potential backers and the pace of collecting and update popularity also enhance the probability of campaigns' success.

Keywords: Crowdfunding, Campaign, Probability, Popularity of Project, Funding

JEL Classification: G32, L11, L13, L15, L21

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1 Introduction

This thesis is about crowdfunding campaigns and determinants of successful completion of these campaigns. It examines the probability of successfulness of the campaigns and the excess project funding (the difference between amount pledged and funding goal). Crowdfunding, as a new way of financing interesting projects at lower costs in comparison to more mature and well-known ways of financing, also helps entrepreneurs to understand their potential market and realize if there is any market for their products. The benefit of crowdfunding is mainly a decrease in transaction costs of financing due to a lack of financial intermediary between entrepreneurs looking for funding and potential backers willing to fund projects they like. As Jörg Rocholl (2016) says the reason for a crowdfunding' success can also be a problem of adverse selection due to a fact that campaigners on crowdfunding platforms might be the ones who have been rejected by financial intermediaries. The goal of the thesis is to determine what affects the successful completion of crowdfunding campaigns from a financial economist's point of view. How is the average funding per backer, comment popularity, update popularity, pace of collecting and the eagerness of campaigners to be successful related to the successful completion of crowdfunding campaign? Furthermore, it also studies the determinants of the excess project funding.

1.1 Motivation for writing about the topic

Start-ups, innovations, and new technologies are the core of our future. In this century, innovations will make our economies even more interconnected and will improve their sustainability. These days, many new projects are being made in order to improve social problems of our society like online maps, which could monitor epidemics in the developing world or 3D-printed hands for amputees. Furthermore, it is important to mention that many of these innovative and world-changing projects would not be able to obtain financing without crowdfunding. Crowdfunding is the new wave in entrepreneurial finance, which helps new ideas and small businesses to grow and to obtain feedbacks from individual backers on a particular project. The most important idea behind the crowdfunding is that it allows for understanding the potential market of entrepreneurs, so they are able to easily verify if there is a market for the placement of their products.

I would like to learn more about innovations, digital economy, because I find this topic a key to understanding the development of ventures and learn from others' experience how to be a successful entrepreneur and maybe one day I will be able to successfully complete my own crowdfunding campaign taking into account all the necessary preconditions for that process I have learnt during writing of this thesis.

1.2 Introduction to crowdfunding

We are living in the world of new ideas, innovative projects and dynamic changes. In the 21st century, new and innovative projects have been improving the economic growth and sustainability of our economies. These innovations are many times so courage that it is hard for them to get funding by common ways like through venture capital, bank loans or by angel investors. It would not be the time of innovations when there were no new and modern channels for funding all those projects. This new way of funding is called “crowdfunding” and according to one of the famous crowdfunding websites named “Kickstarter”, there was \$2,500,532,047 total pledged to Kickstarter projects and 109,180 successfully funded projects (the Kickstarter, 2016). Crowdfunding is the new wave in entrepreneurial finance, which helps new ideas and small businesses to grow and to obtain feedbacks from individual backers on a particular project. It is a novel way for creators to raise capital for particular projects.

Very important step towards obtaining funds by crowdfunding platforms like the “Kickstarter” or “Indiegogo” is besides an idea to create a story about personality of the founder or creator and a particular product that he or she wants to present to potential backers, because funders would usually invest in the founder as a person and not in a product or service itself (Yoskovitz, 2010).

Therefore, it is really important from the perspective of entrepreneurs and potential creators to learn from each other in order to be able to stay competitive in this challenging economy.

What are the key drivers of a successful crowdfunding campaign? What are necessary prerequisites for reaching a funding goal? There is plenty of literature regarding the topic of crowdfunding and learning that examine these questions. According to the article of Kuppuswamy & Bayus (2015), there is evidence that the success of a crowdfunding campaign is highly related to project’s quality, its preparedness, personal characteristics of the founder/creator, creditworthiness, building of community and social networks’ action. Mollick (2014) states that contributors in the early stage usually tend to offer much more to creators and founders of the projects than simply funding. It is also possible for them to obtain necessary advice, governance or even demand for the products. According to the author, the lack of demand by the potential backers and contributors makes that the campaign fails quicker as there is less interest in it as the creators/founders have thought. Furthermore, Agrawal et al. (2010) find out that there exist necessary lessons for entrepreneurs to learn when making crowdfunding campaign, for instance: an importance of project’s quality and preparedness, usage of the social network, appropriateness of goals and efficient planning.

There are three hypotheses I would like to test in my research related to the crowdfunding campaigns. The first hypothesis tries to determine what affects the probability of campaign to succeed.

H₁: “The probability of successfulness of crowdfunding campaign is influenced by the funding period, the average funding per backer, the update popularity, the comment popularity, the number of rewards (eagerness).”

The second hypothesis tries to explain the excess funding reached during the campaign and how is it related to the determinants of successful completion of the campaign.

H₂: “The amount of excess project funding is influenced by the funding period, the average funding per backer, the update popularity, the comment popularity, the number of rewards (eagerness).”

In my hypotheses I assume that the successfulness of crowdfunding campaigns is related to the update popularity, comment popularity, average funding per backer and the eagerness of campaigner to succeed, because frequency of updates and comments is not constant among crowdfunding projects and it is possible to see many differences in number of backers and rewards options among projects as well. Kuppuswamy, Venkat and Bayus (2015) state in their paper that updating information about project and crowdfunding campaign has a positive effect on a successfulness of campaigns. This can also be true due to a fact that more information about projects and campaigns by updating and commenting decreases an information asymmetry between campaigners and backers.

My third hypothesis is related to the pledged/goal ratio (the ratio of the amount pledged to the project to the funding goal of the campaign).

H₃: “The pledged/goal ratio is influenced by the funding period, the average funding per backer, the update popularity, the comment popularity, the number of rewards (eagerness).”

All my tests of hypothesis are also extended by using the control variables as annual GDP growth, short-term interest rate, category variable and season variable, which presents the period of the year when the campaign was held.

In the second chapter, I take a look at some relevant articles and main background literature necessary for my research, so I am able to acquire more knowledge and make the research more proper and valuable. The third chapter focuses on methodology and data, I try to explain the methodology of gathering the data and the methodology of the research itself. In the chapter named results, I show the results of the research by testing the hypotheses. The last part of the thesis concludes my findings, shows the limitations of my research and proposes potential ideas for further research.

2 Literature review

In this chapter, I take a look at some relevant articles and main background literature necessary for my research, so I am able to acquire more knowledge and make the research more proper and valuable. In this first part of this chapter I generally talk about alternative finance and describe this almost new phenomenon. Secondly, I examine peer-to-peer lending to show relations between investors and borrowers in the alternative financing. Further, it is necessary to look more deeply into the crowdfunding itself and a relation between entrepreneurship and learning, which are both described in the last parts of the literature review.

2.1 Alternative finance

Alternative finance can be simply described as a way of obtaining financing beyond the traditional financial systems (banks, private equity companies, mutual funds). Alternative finance has emerged significantly in the 21st century, mainly because of a boom of the Internet and new technologies and innovations. Alternative finance also provides founders of businesses with unique opportunities to connect directly with potential funders via Internet (online platforms and websites). According to the report of Baeck, Collins and Zhang (2014), alternative finance can have a variety of ways, for instance, P2P Business lending, P2P Consumer lending, invoice trading, donation-based crowdfunding, equity-based crowdfunding, reward-based crowdfunding, debt-based securities, pension-led funding and community shares.

In the report of Wardrop, Zhang, Rau and Gray (2015), the authors say that the global financial crisis did help in emerging of alternative finance in the Western world. They argue that alternative finances are very important supplements to the financing of small and medium size businesses by providing opportunities for common individuals to invest, lend or borrow money, which leads to a more innovative economy. According to the authors, for instance, the P2P consumer lending was “the largest market segment in Europe (€274.62 million) in 2014”, followed by reward-based crowdfunding, P2P business lending, and equity-based crowdfunding. All four types of alternative financing have been growing rapidly by more than 100 % between 2012 and 2014 in accordance with the report (2014).

As you can see from above mentioned numbers, alternative financing has become a really important part of our economies and that is why this segment needs more policy-makers’ regulations in order to be more trustable to individual investors. Moreover, there is another type of alternative finance on financial markets, which is called tech investing. For instance, Verhage (2016) finds that employees of Wall Street are getting worried about tech finances and they consider the asset management industry to be the most vulnerable segment.

In addition, the idea of alternative finance has been incorporated also in France. As it is stated in the article of Stothard (2015), a P2P lending platform has become the first to raise 1 million euros

for a company in a single transaction. It could have been done thanks to the French government that had passed a law, by which crowdsourcing has been allowed for SMEs in order to make their financing more diversified.

2.1.1 SMEs and P2P lending

Ridders & Thibault (2009) define SMEs as businesses with a number of employees below 250 people, with an annual turnover of fewer than 50 million euros and with total assets below €43 million. Furthermore, there is a lack of information in comparison with other businesses and a higher level of volatility of these businesses on financial markets. To remind, there exists a size anomaly according to the Fama and French Three-Factor Model (Fama & French, 1992) that states small size businesses bring on average higher returns compared to big size businesses on financial markets. That might be also explained by a lack of public scrutiny. Ridders & Thibault (2009) also say there is a higher level of sensitivity towards business cycles of SMEs, with a higher probability of failing, because of factors as a lack of economies of scale, lower possibility to negotiate better positions with partners, a lack of learning effects, etc. All these factors usually affect the future cash flows of SMEs and make them more uncertain and volatile. Ridders & Thibault (2009) further state that small firms spend more of their resources on borrowing because they are considered to be riskier and that is why they have a higher level of costs. Moreover, in the survey of literature relating to the P2P crowdfunding, Morse (2015) finds that there is a removal of costs associated with disintermediation and investors seem to profit from this, by capturing this value. Furthermore, Morse (2015) states that “on the borrower side, evidence suggests that proximate knowledge (direct or inferred) unearths soft information, and by implication, P2P should be able to offer pricing and/or access benefits to potential borrowers.”

To continue, P2P lending can be defined according to Aveni et al. (2015) as “the loan-making between borrowers and lenders who are directly matched via online marketplaces.” The added value of P2P marketplaces is that they have managed to provide lower interest rates to borrowers and higher potential returns for lenders or investors. By this, they have become serious competitors of the traditional banking industry. Aveni et al. (2015) write that P2P lending has some unique features as an online sourcing of capital and direct interaction between investors and borrowers. This type of lending has many different names, like marketplace lending or even social lending. Aveni et al. (2015) also consider the P2P lending as a form of crowdfunding in lending loans.

How does P2P lending works? A borrower asks online for a loan via website or platform operating in this particular segment of the industry (e.g. Lending Club and Prosper tend to be the most famous ones). In order to ask for a loan, one needs to be registered on the platform and his or her request might be seen as loan profiles. Potential lenders or investors are able to invest in these loans (fractions of loans or the whole loan itself) via the platform. Thanks to a development of new technologies in the finance industry, the process of lending via platforms can be done a way easier in

comparison to traditional lending processes that banks and other financial intermediaries operate in. Aveni et al. (2015) state that the marketplace will screen loan application, evaluate its risk, analyze the creditability of borrower.

Moreover, the P2P lending has a few positive effects on economies. According to Aveni et al. (2015), P2P lending creates a new asset class, which is providing a unique risk-return trade-off for investors. For borrowers, it provides a great opportunity to borrow money at interest rates lower in comparison to banks. The last, but not the least, P2P lending also simplifies the whole industry of loans (e.g. it reaches the borrowers, who would normally not be able to take a loan from common lending companies as banks). Also, the P2P lending has a unique opportunity to make financial services accessible to approximately 2.5 billion adults as stated in the work of Aveni et al. (2015). Some P2P lending companies have focused on this target group. The author writes that the most common way of doing that is to establish a something like a partnership with so-called microfinance institutions operating with a specific knowledge in specified regions.

Light (2012) writes that there is a big downside risk to the higher yields associated with P2P lending. It is also difficult for the individual investor in P2P loans to evaluate the risks and make a proper portfolio management when there is a lack of longer track record. Secondly, Light (2012) states that P2P lending is also riskier in comparison to high-yield bonds, because in P2P loans there is “almost no chance of recovery”, although, in high-yield bonds, there is a chance of receiving some investments back. Thirdly, a lack of liquidity occurs as well. Investors need to be more patient because they usually need to wait till the maturity of loans in order to get money back. Furthermore, the secondary market for P2P lending is still underdeveloped and thinly traded as mentioned in the article of Light (2012).

Considering portfolios of investors in the P2P lending, there was a research made by LendingRobot (2015), in which is stated that there should be an optimal allocation of marketplace lending in an investor’s portfolio. The results of the research estimate that the optimal Marketplace Lending allocation should be around 13% of a total portfolio. Also, the research shows that an extreme diversification exists within P2P lending, by which the volatility of P2P lending is quite low beside other comparable assets. Also, there is still a big uncertainty about a reaction of P2P financing during the recession of the business cycle. According to Law (2014) from Assetz Capital, the banks were not willing to lend money to SMEs at the time of the recession and therefore the P2P lending has begun to emerge ever since in modern times. Stuart Law (2014) further points out that P2P lending platform Zopa successfully overcame the recession “without incident”. This was also possible, because of the fact that P2P lending has not used some much leverage in comparison with traditional financial system. Moreover, according to Katayev (2015) and Cunningham (2015) even during the recession sufficiently diversified investors in P2P lending could obtain positive returns. That is quite impressive considering a downturn of S&P 500 Index at the time. A sufficient diversification within P2P lending means to allocate the funds to all graded loans with the minimum amount of money for every

investment. Cunningham (2015) further shows that P2P lending could provide its investors “a positive return during the 2008 recession, particularly with the help of safer A-grade loans”. The A-grade loans have been usually issued to borrowers considered to be safe, because of their employment contract and a good credit history. This example shows an effective diversification benefits within P2P lending platforms. Cunningham (2015) also finds out that at the time of the recession the riskier loans grading from D to G provided a negative return of 0.8 %. Furthermore, the Economist (2015) point out that P2P lending is similar to the credit cards, which also “tend to remain stable through the economic cycle” and the Economist (2015) further states that “low interest rates meant savers were open to new investment opportunities, including lending their money to perfect strangers on the internet.”

2.2 Crowdfunding and goals

Mollick (2014) states that new ventures require resources to succeed, and one of the most critical of these is financing. In recent years, crowdfunding has emerged as a novel way for entrepreneurial ventures to secure funds without having to seek out venture capital or other traditional sources of venture investment. Mollick (2014) finds crowdfunding to be a new method for obtaining funds for a new venturing, which allows individual creators of a variety of projects to ask for funding from many individual contributors in order to receive particular copies of the products in the future or even an equity stake in the projects. Crowdfunding has been growing in its importance for start-ups and ventures also thanks to the equity crowdfunding’s legalization in the United States because it provides a new way of funding and it is being massively spread from the US among start-up communities. Agrawal et al. (2010) find necessary lessons for entrepreneurs, for instance: an importance of project’s quality and preparedness, usage of the social network, appropriateness of goals (timing delivering) and efficient planning. As I have already mentioned, a crowdfunding, as a type of alternative lending relying on digital data, can be further defined according to Aveni et al. (2015) as “a process of sourcing capital by soliciting to a greater pool of individuals or organizations through an online platform. Backers of products can contribute many small pieces or entire sums to collectively or independently fund a project, take equity in a new company, or provide business or personal loans.”

Furthermore, Schwienbacher and Larralde (2010) define crowdfunding as “the financing of a project or a venture by a group of individuals instead of professional parties [...] crowdfunding occurs without any intermediary: entrepreneurs “tap the crowd” by raising the money directly from individuals.” This process is usually driven via the Internet as a fast means of information transformation and financing.

According to Mollick (2014), there are many forms of venture financing, which have a variety of goals and also it is necessary to distinguish among the goals of funders and founders of the projects. Regarding founders or campaigners, the author points out that the initial capital is usually provided by family members of funders or close friends. The author argues that the funding should not be the only goal of the crowdfunding campaign, but there exist other purposes as for instance a demonstration of

the demand, so funders can easily realize if the project is successful or not. A successful crowdfunding campaign can also be a reliable source of negotiation for funders when discussing further financing with venture capitalists, angel investors, and early stage investors. The authors state that marketing has been another purpose of crowdfunding, so it could show to the world that the funding project is marketable and reliable.

Furthermore, Mollick (2014) argues that many implications for policy makers and regulators arise within a crowdfunding community and points out a possible increase of the fraud rate in equity crowdfunding in the near future. The author points out an interaction among Kickstarter's features (threshold funding, active participation by many communities, important interaction between creators and backers, an interaction between founders and potential future founders), which should be protected by policy makers and regulators in order to decrease a potential risk of fraud and they should also help founders to make effective plans and applicable goals.

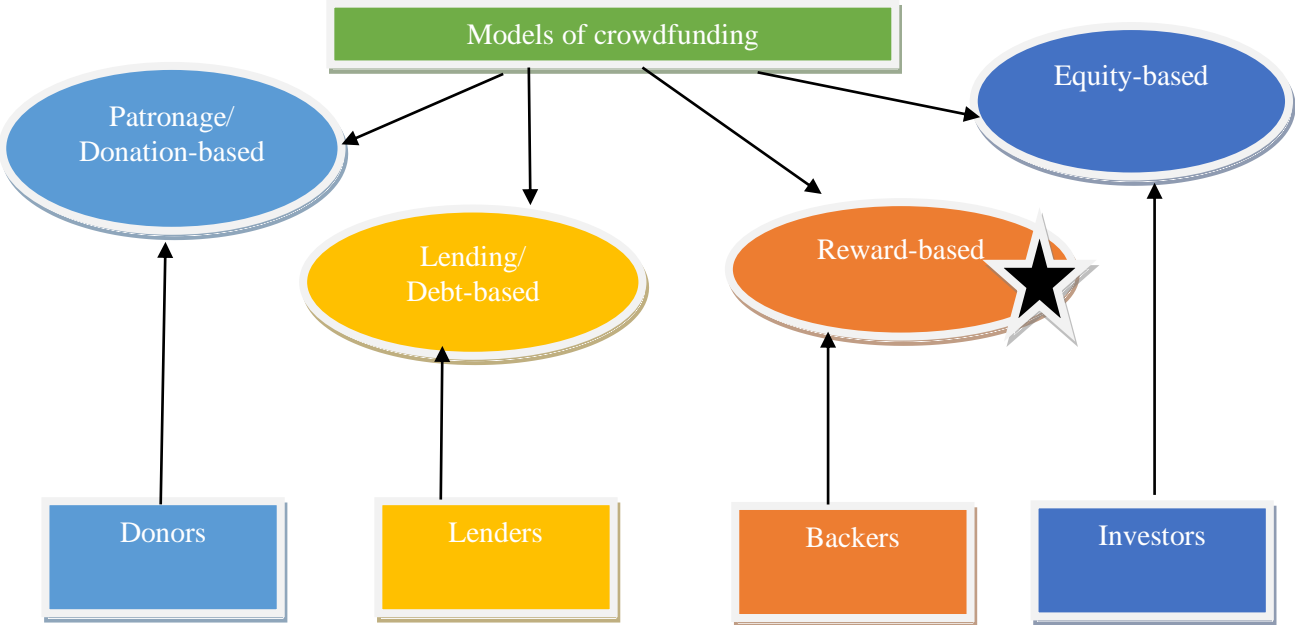
Results of the Kuppuswamy and. Bayus (2015) show that backers are more likely to fund projects in the first and last week of the pledging cycle. Moreover, the authors find out that potential backers are less likely to contribute once a project reaches its goal. Also, as the project approaches its funding goal, the pledging support increases. Possible future backers of the projects are highly influenced by the current fulfillment of the funding goal. Furthermore, updates help to increase a support from potential backers in the first and last period of the funding, which can be interpreted because of the fact that creators usually post updates in the last week of the funding cycle, when the project's pledging goal is being approached. On the other hand, the results of the paper also show that the projects oriented on the large goals are less effective in funding process than projects with smaller financing goals. However, a problem of setting low funding goals can occur, because entrepreneurs would prefer to have low goals in order to get financing for particular projects or they even assume to obtain more pledging than their goals are set on. But that is a wrong assumption because other results of the working paper show that future backers tend to contribute less to the project once reaches its goal.

Mollick (2014) states that contributors in the early stage usually tend to offer much more to creators and founders of the projects than simply funding. It is also possible for them to obtain necessary advice, governance or even demand for the products. According to the Mollick (2014), due to the lack of demand by the potential backers and contributors, the campaign is more likely to fail as there is less interest in it as the founders have thought.

Regarding funders, it is necessary to take a look at their motivations to support the campaigns. Mollick (2014) states that "the relationship between funders and founders varies by context and the nature of the funding effort". The author further examines the four main models of funding projects. The first model is called a "patronage" model, which is basically used as a model of funding for humanitarian projects and funders act as philanthropists anticipating no return for their contributions. The lending model is a simple model used as a form of a loan, which is offered to the founder and the

funder anticipates a return on its investment. The so-called reward-based model is the third model of funding in a crowdfunding campaign. It means that funders will receive some sort of gift for backing projects. The reward can have a variety of forms. The authors mention the reward of being credited in a movie, opportunity to meet product developers or even receive the prototype of the product or the product itself usually for a better price in comparison with later customers. The last model of funding is equity funding, in which funders act as investors and receive equity stakes in projects. In my thesis I examine the data related to the reward-based crowdfunding.

Figure I – Models of crowdfunding



Source: Own processing based on Mollick (2014)

Kuppuswamy & Bayus (2015) find out which periods of crowdfunding campaigns are more successful compared to others in terms of the amount of funding obtained. Authors state that there exists a U-shaped pattern across all Kickstarter’s projects, whether the campaign has been successful or not does matter in this case. They realize campaigners usually get funding from backers during the first week after the campaign has been launched and during the last week of the campaign when potential backers can foresee the probability of successful completion of the campaign, so a logit model to predict the probability of a successful campaign can be used in my case.

Moreover, Kuppuswamy & Bayus (2015) find that updating information about the projects has a positive effect on the campaign and campaigners regularly updating information about the projects are considered to be more successful in a crowdfunding campaign. Furthermore, it is stated in the paper of Kuppuswamy & Bayus (2015) that campaigners tend to update information more aggressively when campaigns approach their deadline. Their results show that it is necessary to consider the appropriateness of the goals when launching a campaign. That could potentially lead to a

“low goal” behavior, so entrepreneurs will rather have a low goal in order to be sure that the campaign is successful.

2.2.1 Crowdfunding and a quality of campaign

The quality of the product and the preparedness of the campaign seem to be relevant factors that could help encourage potential funders to back the products and campaign. According to the previous studies of Kuppuswamy & Bayus (2015) and Mollick (2014), there exists a positive relation between the preparedness of the campaign and the successful completion of the crowdfunding campaign. Mollick (2014) shows that the Kickstarter itself encourages founders and campaigners to prepare their campaigns well. The author says that “the key to demonstrating preparation is to include a video” because having a video shows a basic preparedness of campaigners. Secondly, it is recommended by Kickstarter to periodically update information about projects after initiation. According to the Kickstarter’s Creator Handbook, which serves as a general preparation online handbook to study before launching a project, it is recommended to keep the project focused during the campaign, with clear ideas and goals one wants to reach in the campaign. A high-quality campaign should have the following features according to the Handbook; firstly, a video describing the whole story behind the project, secondly, it is necessary to name rewards, which will be received by potential backers of the project, if the goal is reached, thirdly, it is required to make regular updates about the project about how does it go with the project and campaign in order to encourage more potential backers to fund the project. Furthermore, it is recommended to show a seriousness of the project. Thinking of ideas, it is better to update information about projects by showing that through images and videos and not with words. Also, if preparing a video, it is good idea to put subtitles and translations as well into it, so more people will be able to understand projects and ideas.

How should the rewards for backers look like? Rewards that would make people back your project are e.g. copies of products. The optimal price for rewarding is considered to be around \$25 according to Kickstarter. Considering estimated delivery dates, the Handbook recommends to have enough time and rather do not promise too much to backers. Also, one should every time take into account shipping costs, destinations of the backers, limit the quantity of reward tier and make a special offer for early bidders and make a survey in order to collect information about your backers’ addresses, etc.

In terms of financing, Kickstarter uses an all-or-nothing funding model, which basically means that if a project does not reach its funding goal, the funds will be sent back to backers. Therefore, it suggests having funding goals as minimum amounts needed for a fulfillment of rewards (Kickstarter). It is also advised to prepare a plan of promoting, make a general research beforehand. Once a project is “live”, founders should promote it as much as possible through social websites, email, etc. A necessary precondition to attract potential backers is to prepare an excellent pitch and have a proactive approach during the campaign.

According to Cumming and Johan (2009), family and friends of the funders provide a financial support in an early stage of the new venture as an important source of funding. The paper states family and friends tend to fund the projects in its early days and then at the end of the crowdfunding campaign. According to Kuppuswamy and Bayus (2015), this fact is not surprising as it is common that contributors are usually one-time backers from a close social environment of the founders. It is stated in the paper that contributors want to help particular projects to be successful. It is common that when the crowdfunding campaign of projects is in sight, these projects get likely funding in order to meet their crowdfunding objective. That is also true when there are no rewards for the contributors for their action. Therefore, I can conclude that there exists a positive effect of social influence on the project's funding goal.

According to the paper, the most important way how can project founders reach their goals in crowdfunding campaigns is to prepare and develop an effective campaign providing communication channels through the social media or blogs, because it is stated that successful projects have significantly more updates than unsuccessful projects. Also, Kuppuswamy and Bayus (2015) state that there is evidence that success of a crowdfunding campaign is highly related to project's quality, its preparedness, personal characteristics of the founder/creator, creditworthiness, building of community and social networks.

Last but not least, regarding the article of Strickler (2011), it is better in terms of positioning for founders when launching a project to have a lower amount of time for their projects. That is why Kickstarter lowered the maximum amount of time to 60 days in 2011. The author finds out that lower the amount of time, the higher the overall success rate of the project. In his second article (2013), Yancey Strickler focuses on the "stretching of goals". Basically, extending the goals help the founders to attract more backers and receive a higher amount of pledges. However, some risks are involved, too. For instance, this effect of stretching the goals can make some projects over their budget and it also requires founders to fulfill the rewards in order to satisfy the backers. Therefore, when stretching goals, it is necessary to take into account that with more money for a project, the founder has to tackle with more responsibility.

2.2.2 Crowdfunding platforms

In this background literature section, I would also like to examine two of the most famous crowdfunding platforms (Kickstarter and Indiegogo). I describe them and compare them with each other in the following text.



The Kickstarter is one of the main crowdfunding platforms focusing on creative projects, which are grouped into the following categories as Art, Comics, Dance, Design, Fashion, Film and Video, Food, Games, Music, Photography, Publishing, Technology, and Theatre. Kuppuswamy & Bayus (2015) point out that the Kickstarter's official website states that its "mission is to help bring creative projects to life" It also states that a project is a "something finite with a clear beginning and end. Someone can be held accountable to the framework of a project—a project was either completed or it wasn't—and there are definable expectations that everyone can agree to."

On Kickstarter, one can find a funding for all kinds of creative projects (e.g. games, artwork, music, technology, movies). The funding is based on the all-or-nothing way, so if a funding goal of the campaign is successfully reached, contributions will be paid to founders. However, if a funding goal is not reached, no money will be transferred from contributors. Financial profit is not an incentive of backers to support projects because founders keep the whole ownership of their work and backers can only get rewards, so no equity and debt funding is able through the platform. Moreover, Kickstarter has become a benefit corporation since 2015, so its incentives are not only profit driven, but also obligated with an impact on society they have. There is a 5 % fee to all collected funds from backers on Kickstarter.

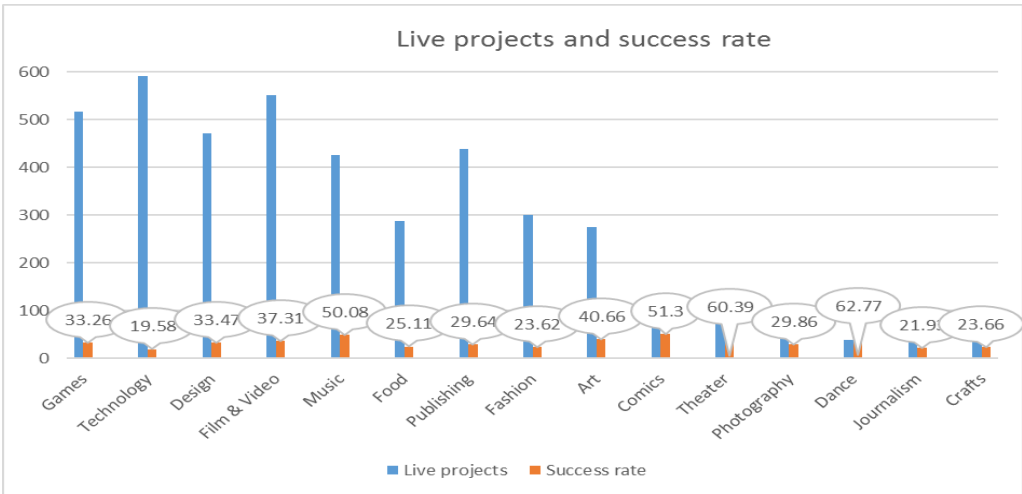
Kuppuswamy & Bayus (2015) say that projects, which would like to get financing could be divided into three groups according to their popularity, the first week after their initial launch the crowdfunding campaign and the last week before the campaign ends. Kuppuswamy & Bayus (2015) further find out that a project must be fully funded before its funding cycle concludes or no money pledged by any backer is transferred to the project creator. An over-ambitious funding goal may thus result in the fundraising effort falling short and consequently, raising no funds whatsoever. At the same time, once a project has reached its funding goal, it can continue to receive contributions until its deadline. As a result, funded projects can exceed their original funding goal. They point out that one of the most important features of the Kickstarter model is that contributors do not obtain equity in the project for their funding. However, individuals funding the projects can receive other benefits like copies of the particular products, creative collaborations of various kinds (a contributor might be drawn as a figure in the comic), "creative experiences" (a dinner with the authors) or so-called creative mementos (explicit thanks in the closing credits of the movie).

According to Kuppuswamy & Bayus (2015), there are two distinguishable features of Kickstarter in comparison to other platforms related to crowdfunding. The first feature is related to the philosophy of "all-or-nothing", which could be easily described as a situation when a particular project has to reach its goal in terms of funding during the campaign, otherwise, the project will not receive any money from backers. In addition, when the project reaches its funding goals, it can continue to receive new contributions until the end of the campaign. Secondly, there is no equity rewarding model

on Kickstarter, which means that potential backers are not potential investors of the project and do not anticipate equity stakes when funding the project.

The figure below demonstrates the percentage of success rate and live projects among all categories of products within the Kickstarter. The figure II demonstrates the amount of live projects and success rate of projects on the Kickstarter. The highest rate of success can be seen in dance and theater categories. The lowest success rates are among technology, journalism and fashion categories of products. Most of the live projects are related to categories such as technology, film & video, and games. On the other hand, there are currently a few live projects among photography, dance, journalism and crafts.

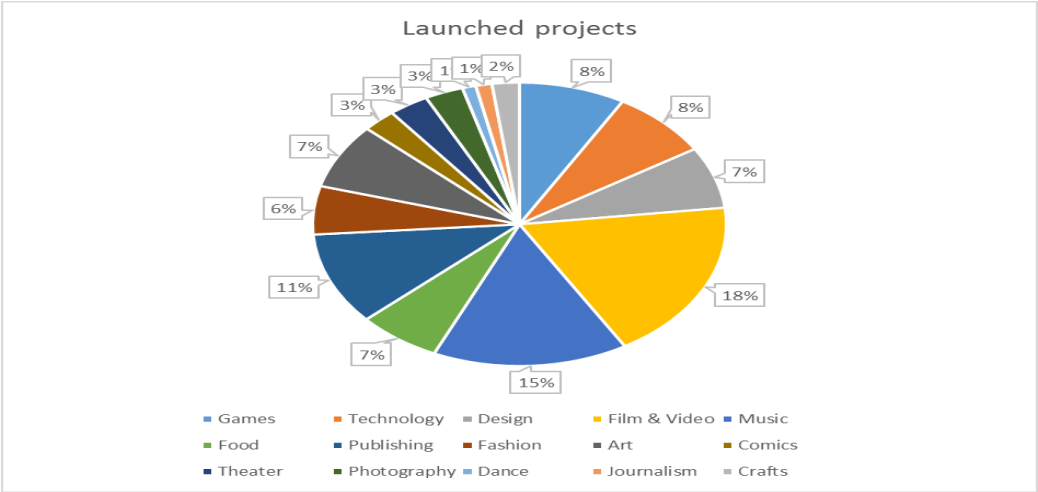
Figure II – Live projects and success rate on the Kickstarter



Source: own processing, The Kickstarter

The figure III shows that the highest percentage of launched projects on the Kickstarter is among categories such as Film & Video (18%), Music (15 %) and Publishing (11%). However, as it is shown in figure III, not so many projects have been launched among Dance (1%), Journalism (1%) and Crafts (2%).

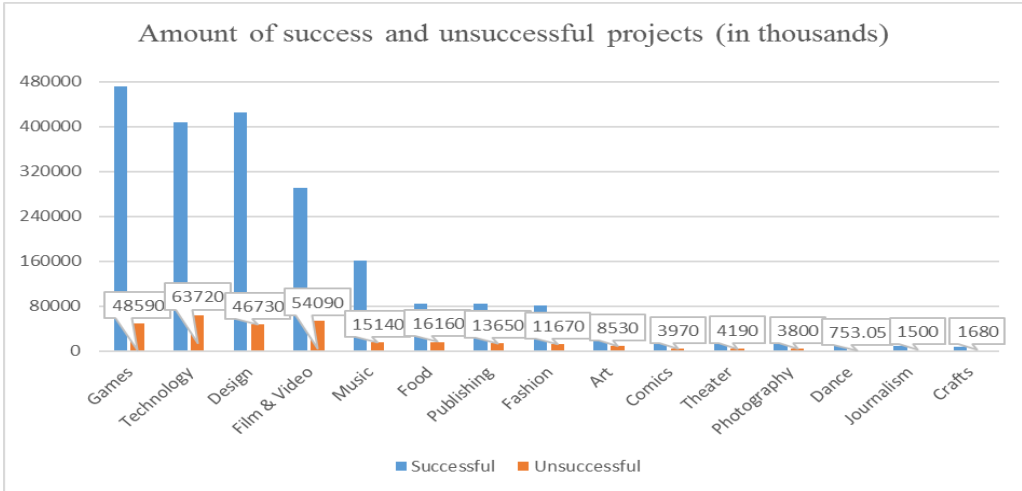
Figure III – The percentage of launched projects among categories



Source: own processing, The Kickstarter

Figure IV demonstrates the amount of successful and unsuccessful projects (in thousands of US dollars). It is shown that there are more successful projects than unsuccessful projects among all categories. Successful projects that raised much more than 80,000,000 are among categories like Music, Film & Video, Design, Technology, and Games. The lowest amount of money was raised among Crafts, Journalism and Dance. The unsuccessful projects are distributed by the same way, because with the higher amount of successful projects, the higher amount of unsuccessful ones come along as well.

Figure IV – Amount of successful and unsuccessful projects (in thousands)



Source: own processing, The Kickstarter



Considering second platform, Indiegogo, it is stated on its website that they have raised 800 million US dollars across all projects so far. They have more than 9 million backers having supported around 600 thousand projects. It is also stated on the website that Indiegogo is the largest global crowdfunding platform, distributing around 1 million dollars across the world every week due to backers. Indiegogo provides to its potential customers and people willing to join the community the Indiegogo Field Guide, where they can find relevant information about campaigning via Indiegogo. In comparison with Kickstarter, there are two forms of funding on Indiegogo; fixed funding and flexible funding. By using a flexible funding campaigners can keep their contributions also if they do not reach their goals. However, if they decide to use a fixed funding, they have to reach a funding goal in order to keep the contributions. Also, thanks to the Indiegogo Field Guide, I know that on Indiegogo, 40-

days lasting campaigns are the most successful ones and it is recommended to have a lower amount of time as is advised on Kickstarter. Contributions on Indiegogo are called perks, which is a different name for pledging (Kickstarter). Potential perks could be for instance; a dinner, personalized tweet, personalized video, mentioning a name of backers, discount products, etc. Moreover, there is a special feature named the GOGOFACTOR, ranking system of campaigns, which determines which campaigns should be promoted in the weekly newsletters and on social media. The GOGOFACTOR relies only on the activity, so it is recommended to be proactive and put efforts during the campaign. Furthermore, according to the Indiegogo, campaigns updating only three times are more than 100 % more successful in raising money compared to ones that did not update their information. Also, if you update regularly, contributors are more patient with any delays and problems, which certainly occur during campaigns. When campaigning through Indiegogo's platform, one needs to take into account the fee of all funds at 5%, without considering the fees on payment transactions.

2.3. Crowdfunding and learning

Sorensen and Morten (2008) find out that venture capitalists are able to learn by investing. According to the authors, investing will result not only in a potential payoff thanks to the investment, but it also provides investors with new information, which might lead to more successful investment decisions in the future. The authors consider learning as a really valuable because it can lead to an improvement of investor's investment opportunities understandings and so have an effect on investment decisions. Freedman & Jin (2011) find that lenders in P2P lending tend to strongly learn from their own mistakes. They further find out that learning of an individual's own mistakes is more pronounced than learning the performance of others, which basically means that learning from investor's own mistake is more effective than learning from bad investment decisions of other investors.

In the work of Guiso, Pistaferri. & Schivardi (2015), authors state that there are several features required for an entrepreneurship as "the ability to produce ideas, the capital to implement the idea, ability to stand risk or risk-aversion, organizational skills, and ability to put so much effort and be persistent when doing it. Guiso, Pistaferri. & Schivardi (2015) think that all these features can be learned or "socially acquired" within a certain environment and so can be improved, when not given. They find out that living within a certain area, where many entrepreneurs live as well, increases the one's ability to be successful.

Information is another necessary precondition for a successful crowdfunding campaign. Backers need information about the particular project in order to fund it, creators have to study what it takes to make successful campaign and attract potential backers or contributors. According to Akerlof (1970), when there is an uncertainty about the grades of goods it is hard to distinguish between the ones with a good quality and the ones with worse. This theory, which is also called the "Lemons" problem states that due to a problem that customers are sometimes not able to distinguish between

good and bad goods, they tend to give them on average the same grade. However, this situation can further lead to an overstatement of bad goods and understatement of good once, and so the entrepreneurs, who have been producing the good products will have an incentive to leave the market. The same imperfections occur when entrepreneurs want to attract household savings in order to be able to finance their own business ideas according to the Healy and Palepu (2001). Authors state that the “matching” of funds is hard to do, because of an information asymmetry (savers have less information about investment opportunities of entrepreneurs) and an agency problem (incentives of entrepreneurs to abuse the savings of households). That is why the lemons problem (Akerlof, 1970) appears also in the capital market. Moreover, Healy and Palepu (2001) point out that a reliable information is needed in the capital market, although it is hard to capture such a relevant information. Lack of information, information asymmetry and a relevance of information is also an important issue in P2P lending and crowdfunding. Feller, Gleasure & Treacy (2016) suggest that “the impact of information sharing on user behavior is related to platform-specific sharing expectations”. Therefore, Cohen & Sundararajan (2015) examine the information asymmetry within P2P services like Uber or Airbnb, because this asymmetry “can lead to fewer transactions than are socially optimal”. Authors point out features that might increase a level of self-regulation with the industry as “credible enforcement mechanisms, a perception of legitimacy, and an emphasis on reputation”. This regulatory framework is needed according to Cohen & Sundararajan (2015) to exploit the full potential of P2P services and sharing economy itself. Authors suggest that self-regulation might encourage people to use P2P services and share more and then these types of businesses would cultivate even more themselves, taking into account reputational concerns of participants and social capital involved. Furthermore, Cohen & Sundararajan (2015) think that “governmental oversight and judiciously chosen transparency will increase the likelihood of a success of self-regulation” and realize long-term benefits in the future.

Nevertheless, Gonzalez & Loureiro (2014) want to find out “the effect of both borrower and lender personal characteristics on lending decisions” within P2P business. This paper is really important for my thesis because I also examine the gender perceptions when backing a particular project. Gonzalez & Loureiro (2014) realize that age, gender, and attractiveness play a role among lenders and borrowers. They find out that age of borrowers tends to show their experiences and competencies when applying for loans. For instance, the younger the borrower, the harder he or she gets a financing. However, lenders take into account a gender and an attractiveness as well. Moreover, Lin, Prabhala & Viswanathan (2013) study the P2P lending market and find out that “the online friendships of borrowers act as signals of credit quality.” They also state that friendships can raise the probability of successful completion of funding with lowering interest rates. Furthermore, Liu, Brass, Lu & Chen (2015) state that close offline friends of borrowers on P2P lending platforms behave as so-called “financial pipes” because potential lenders tend to follow the bidding of these close offline friends thanks to a “relation herding effect”.

Stiglitz, & Weiss (1981) examine the credit rationing taking into account imperfect information. They find out that even if borrowers with the same features apply for a loan, they are not treated the same way considering the potential movement of interest rates by the lenders. However, this paper is related to the bank loans and does not consider peer-to-peer lending. Nevertheless, I might assume that in P2P lending and crowdfunding, there might also be some features of potential borrowers or founders that lead to a refusal from lenders and backers, for instance as written in the paper of Gonzalez, & Loureiro (2014), young borrowers can have difficulties with obtaining financing in comparison with more mature borrowers.

The learning aspect of finance has been studied for many years. The work of Leippold Trojani & Vanini (2007) for instance, studies the asset prices with ambiguity aversion. They find out that the occurrence of the learning effect and ambiguity at the same time may result in a higher equity premium than usually, also because of a higher level of overall volatility. Furthermore, Timmermann (1993) for instance states that sometimes agents in financial markets do not know the process of generating data for dividends and all the information necessary to make a proper decision. Therefore, Timmermann (1993) says that the learning effect has an impact on the dynamics of the stock prices. Moreover, Pástor and Veronesi (2009) survey the literature that has been studying the learning effect in financial markets. For instance, they find that Sorensen (2008) has developed “a model of learning by investing”. Basically, his work states that funding projects bring not only a payoff in terms of return, but also extend the knowledge by gathering more information needed for future investment decisions. Pastor & Veronesi (2009) state that “the option value of learning” is higher in those particular cases.

Table I – Literature review			
Author (date)	Conceptual framework and empirical analysis	Setting and sample	Main Findings and future research
Akerlof (1970)	The paper studies the information asymmetry from the theoretical perspective using the model with automobiles as an example with further examples in insurance and the employment of minorities.	The example of defective used cars, known as lemons. The analysis is also implemented on the data of health insurance surveying 2,809 families with 8,898 persons.	The paper discusses the economic models taking into account information asymmetry and adverse selection. The author concludes that the difficulty of distinguishing good quality from bad is inherent in the business world.
Aveni, Qu, Hsu, Zhang, Lei & Hemrika (2015)	The study is an analysis that corroborating information from reports, first-hand accounts and interviews with experts across related disciplines to understanding the dynamics at play in P2P lending. The authors present a report on P2P lending, explaining how it develops, how it works, types of platforms, the impact of	Data and sample used in the report come from an existing literature and research papers about P2P lending. Statistics are also taken from other papers.	The findings of the paper are that marketplace lending has become an important term in the financial industry. Secondly, marketplace lending helps to fill needs, which could not be fulfilled within the traditional financial industry (helping with refinancing and solving the problems of high-interest credit card payments). The authors also state that P2P lending helps in promoting financial inclusion. Moreover,

	P2P lending and its regulation.		marketplace lending inspires material innovation in emerging economies according to the report. There is also an evidence for an improvement of credit evaluation thanks to P2P lending.
Belleflamme Omrani & Peitz, (2016)	Crowdfunding platforms facilitate the interaction between founders trying to raise funds and potential funders taking into account the external effects that crowdfunding generates across and within groups. The authors argue that the complexity of these effects is much more efficiently dealt with by a crowdfunding platform than through bilateral relationships between funders and fundraisers. Basically, the work elaborates on cross-group and within-group external effects and asymmetric information on crowdfunding platforms.		Crowdfunding platforms are the key intermediaries in the crowdfunding market. It would be hard for agents in the crowdfunding market to interact with each other efficiently without these intermediaries.
Cohen & Sundararajan (2015)	Mitigation of different factors inducing market failure by the existence of new digital platforms. A self-regulation can form part of a broader innovation-enhancing solution, providing guidelines for sharing-economy regulation. Distinguish between entities suited for correction of information asymmetries and entities suited to address market failure from externalities.	Authors use the peer-to-peer marketplace Airbnb and the context of short-term, hosted accommodation for an illustration	Self-regulation is a natural by-product of economic exchange and has a long history of success. The four factors essential to the success of self-regulation. 1.) the necessity of establishing credibility early on through its performance. 2.) demonstration of strong enforcement capabilities. 3.) legitimacy and independence of self-regulation. 4.) A self-regulation must take advantage of participants' reputational concerns and social capital.
Fama & French (1992)	Two variables, size, and book-to-market ratio combine to capture the cross-sectional variation in average stock returns associated with market risk, size, leverage, book-to-market equity and earnings-price ratios. Return = risk-free rate + market beta *(expected market return – risk free rate) + beta of size *(SMB) + beta of value (HML) + alpha	All nonfinancial firms in an intersection of NYSE, AMEX, and NASDAQ returns from CRSP. The returns are from 1962 to 1989.	The main finding of the paper is the extension of the CAPM model with factors of size premium and value premium enhancing the theory of portfolio management. The future research of Fama and French implements also profitability factor and investment factor.
Feller, Gleasure & Treacy (2016)	It identifies the relationships between different forms of information sharing and user behaviour, both within and between	116,667 loan records, and an analysis of 1000 manually coded records,	Authors test a theoretical model based on Social Identity Theory and prior Internet-enabled Peer-to-Peer Lending Systems studies. It shows the importance of social

	networks and reviewed prior research in order to hypothesize the impacts of different specific types of shared information in the Internet-enabled Peer-to-Peer Lending Systems of interest.		data, and further reveals relationships that frequently contradict prior findings from other IP2PLS. The study thus implies the need for a more heterogeneous view of the IP2PLS domain, and the need to more fully understand as systems that support user behaviour by enabling social information exchanges.
Freedman & Jin (2011)	The authors try to analyze if learning by doing plays an important role in mitigating the information asymmetry among agents by using peer-to-peer lending as an example. We find that early lenders did not fully understand the market risk but lender learning is effective in reducing the risk over time.	Sample is used from June 1, 2006, through July 31, 2008 including 293,808 listings and 25,008 loans for \$158.27 using transaction level data Prosper.com.	The paper shows that there are serious information problems on Prosper.com, because they do not observe complete credit history of borrowers and also the problem of adverse selection might occur when the borrowers are not successful with traditional financial services. The results suggest many lenders to fund loans of low expected returns and higher risks. This may be explained by the lack of expertise. Also, considering the information asymmetry, the authors find a difference among investors. Further research may analyze the competition between P2P lending and traditional financial industry, and search for cost savings.
Gonzalez & Loureiro (2014)	The authors examine the effects of lender and borrower personal characteristics on online P2P lending/ Variables used are borrower's gender, lender's gender, borrower manipulated attractiveness, borrower capable, borrower default probability, perceived borrower attractiveness, perceived borrower happiness, perceived borrower confidence, annual household income, investment experience, subjectivity admission, image quality	Designed and run online experiment using 2 heterogeneous consumer samples to collect data and test the relationships of interest.	Borrowers who are perceived as being young are allocated smaller loans, while borrowers who are perceived as mature are allocated larger loans. Moreover, when experience and competence cannot be easily inferred based on age perceptions, other personality characteristics help as well. The perceived attractiveness of borrowers is influential as well as the age of both borrowers and lenders. The authors further find an evidence for "beauty is beastly" effect because sometimes the attractiveness is actually penalized. Further research assumes the relation of the lender and borrower perceptions in P2P lending, demographic, and cross-country effects.
Guiso, Pistaferri, & Schivardi (2015)	The authors analyze the extent to which growing up in high entrepreneurial area increases both the likelihood that an individual becomes an entrepreneur and her entrepreneurial ability or success.	Data source is the Bank of Italy Survey of Households Income and Wealth with information on demographics, income and assets for a representative sample of Italian households from	The authors find that individuals who grew up in areas with high density of firms are more likely to become entrepreneurs, controlling for the density of firms in their current location. Moreover, the same individuals are also more likely to be successful entrepreneurs,

		1991 to 2012 for a total of 62,990 observations. Also, the authors use the province of birth and province of residence in order to measure the learning aspects.	as measured by business income or firm productivity. The results show that firm density at entrepreneur's young age is more important than current firm density for business performance, which are learnable thanks to social contacts.
Healy & Palepu (2001)	The paper provides a framework for analyzing managers' reporting and disclosure decisions in capital markets setting and identify key research questions. We then review current empirical research on disclosure regulation, information intermediaries, and the determinants and economic consequences of corporate disclosure.	The authors basically survey the existing literature on the topic and try to put together the basic framework of the empirical disclosure literature	The authors conclude that existing research about information asymmetry, corporate disclosure, and the capital market has generated a number of useful insights. The authors further identify many fundamental questions that remain unanswered and changes in the economic environment that raise new questions for research.
Heminway (2016)	The author of the article defines the crowdfunding "as a method for financing businesses or projects that involve soliciting and securing funding from broad, disaggregated mass of potential funders, typically through the internet".	.	The author states that crowdfunding and securities crowdfunding remain a bit of an unknown in business finance. For further research, the author suggests looking more deeply at the crowdfunding regulations adopted and the relation between the protection of investors and promotion of capital formation taking into account future possibilities of convergence across different jurisdictions.
Hornuf & Schmitt (2016)	The author of the article examines the success and failure in equity crowdfunding		There have been a few insolvencies and liquidations in equity crowdfunding, although figures have been rising recently. exit opportunities and absolute returns have been weak. Investors in equity crowdfunding are primarily interested in turning a profit. If equity crowdfunding does not yield higher returns to crowd investors in the near future, many of them will possibly switch to the lending model.
Kuppuswamy & Bayus (2015)	The article shows the empirical understanding of backer dynamics over the project funding cycle by estimating a conditional fixed-effects Poisson model that corrects for overdispersion and allows for cluster-robust standard errors/The dependent variable in analyses is BackersAdded, a count variable which is the number of backers' project I receive in day t.	Two years of publicly available data on projects listed on Kickstarter. Sample period: January 2010 to the end December 2011. Sample size: 14,704	Backers are more likely to contribute to a project in the first and last week as compared to the middle period of the funding cycle = U-shape pattern of support. The results also find that the role of family and friends in supporting projects, the effects of social influence, and the role of project updates over the project funding cycle. For further research, it might be interesting to look at the herding behaviour of

	Essentially, fixed-effects models incorporate project-specific intercept terms. Based on a Hausman-type test, fixed-effects models are preferred over random effects models for the Kickstarter data.		consumer-investors in crowdfunding communities or backer motivations and behaviour in supporting projects that have already reached their goal.
Lending Robot (2015)	The analysis shows how much money investors should put in the new asset class named 'Marketplace Lending' or 'Peer Lending'. In order to determine how much to allocate to the marketplace lending, the analysis compares risks and returns of a classic portfolio with portfolios including Marketplace Lending assets	Use of Lending Club as a proxy of the entire P2P Lending asset class. The analysis uses interest rates and probabilities of the payments to be made. The analysis was made by using a multivariate regression fitting Experian Consumer Credit Default Index to interpolate Marketplace Lending.	The marketplace lending benefits from lower operational expenses than traditional institutions such as banks, which means it can offer both lower rates for borrowers and higher returns for lenders (Lending Club, Prosper, or Funding Circle). The results show that the risk-returns profiles can be significantly improved by diversifying 13.2% of one's portfolio in Marketplace Lending assets on average.
Leippold, Trojani & Vanini (2008)	The study of asset prices in a Lucas exchange economy with standard power utility under learning and ambiguous information. The model is better in terms of equity premium implementation, the interest rate, and the volatility of stock returns under empirically reasonable parameters. Authors also demonstrate a severe downward bias arises in the empirical relation between stock returns and return volatility.	A Lucas (1978) economy populated by a Constant Relative Risk Aversion (CRRA) investor with utility function	The authors find that for reasonable parameter values, the joint presence of learning and ambiguity generates a high equity premium, a low-interest rate, and excess volatility. They find that model settings without learning imply small equity volatilities. The results show that learning and ambiguity aversion can help explaining the weak evidence for a positive relation between expected excess returns and conditional variances in the data/ The authors assume to disentangle risk aversion could be useful to introduce an additional degree of freedom in the choice of the risk-aversion parameter, which would make the model more flexible.
Lin, M., Prabhala, N. R., & Viswanathan, S. (2013)	Authors study the P2P lending, the especially influence of online friendships on the credit quality of borrowers. The influence of friendship on the probability of successful funding and more economic effects of friendships on P2P lending.	The data come from the online P2P lending website, Prosper.com, taking only into consideration a maximum of two concurrent loans with a total amount less than \$25,000.	The findings show that online friends on the Prosper.com platform have better ex-ante outcomes, so friendship acts as a signal of credit quality. Moreover, findings reveal that friendship positively affects the default rate, also because of lowering interest rates.
Liu, D., Brass, D., Lu, Y., & Chen, D. (2015)	Authors study if friendship relationships act as pipes, prisms, and herding signals in an online P2P lending.	The data are from PPDai, the largest P2P lending platform in China. PPDai	Findings show that friends of the borrower act as financial "pipes" by lending money to the borrower because potential lenders tend to follow the bidding of these close offline friends thanks to a "relation herding effect". However, when considering, the "prism" effect of friends' negatively influences bids by third parties.

Mollick (2014)	A description of the underlying dynamics of success and failure among crowdfunded ventures. It suggests that personal networks and underlying project quality are associated with the success of crowdfunding efforts and that geography is related to both the type of projects proposed and successful fundraising/ Predictors of project success for projects 5 k and over. Independent variables: Log(goal), Duration, Featured, Video, Quick update, Spelling error, Log(FBF), FBF lower 25%, FBF 25%–50%, FBF 50%–75%, FBF top 25%, Category controls	A dataset of over 48,500 projects with combined funding over \$237 M	The results show that 75% of founders deliver products later than expected, with the degree of delay predicted by the level and amount of funding a project receives. It offers an insight into the actions of founders affecting their ability to receive entrepreneurial financing/ Further research is required in a context of regulation and policy in the field.
Morse (2015)	The paper is a frame of literature and issues relating to peer-to-peer finances.	A nascent literature relating to peer-to-peer finances.	The author finds that in peer-to-peer, there is a removal of costs associated with disintermediation and investors seem to profit from this, by capturing this value. Taking into account the borrowers, the research shows that peer-to-peer is also able to provide better pricing for them thanks to disintermediation of the process. Further research should focus more on the value generated by disintermediation.
Pastor & Veronesi (2009)	The authors survey the literature on learning in financial markets. Their main idea is to put together the existing literature on the topic in order to easier recognize parameters in financial models, which are uncertain and subject to learning. The authors discuss phenomena related to the volatility and predictability of asset returns, stock price bubbles, portfolio choice, mutual fund flows, trading volume, and firm profitability and entrepreneurial finance.	The authors survey the existing literature on the topic.	The main added value of the paper can be described as a consistent literature framework on financial market and learning. Further research may focus on learning from the prices of derivative securities, endogenous information acquisition, isolation of systematic and idiosyncratic uncertainty, etc. by structural estimation.
Ridders & Thibault (2009)	The objective of this research is to develop a structural form probability of default model for small and medium-sized enterprises, dealing with the methodological issues which arise in the modeling of small commercial loan portfolios. Other motivations are to provide an	The sample of Dutch private firms tested on Dutch private firm data. Factors used are country or industry specific (asset volatility, the expected return on assets, and the optimal β).	The results show a significant difference between defaulted and non-defaulted companies. Secondly, a logistic regression for the probability of default model with a number of financial ratios shows that probability of default is significant in default prediction of SMEs. Moreover, accounting standards and cultural standards may influence the

	extensive overview of the characteristics of SMEs and to provide a list of characteristics for an SME probability of default model, e.g. time and cost efficiency, broad applicability, limited data requirements, and powerful in predicting default.		previously mentioned factors according to authors, so I assume that the accounting standards and culture should be studied in a future research.
Rocholl (2016)	The author tries to explain why individuals or companies prefer to be directly financed by other individuals rather than using more traditional financial services.		The author assumes that the reason for the preference of direct financing by other individuals may be the transaction costs of traditional financial services and the dislike of them as well. Secondly, the author assumes the reason could be an adverse selection (individuals who have not received money by traditional financial services may seek to finance by crowdfunding).
Schwiebacher (2016)	Regulation of crowdfunding market in Austria and its development Regulation of crowdfunding market in Austria	Crowdfunding market in Austria	The author states that the "Alternativfinanzierungsgesetz" is an important step towards promoting securities-based crowdfunding in Austria and the consolidation of the pan-European market of platforms.
Schwiebacher & Larralde (2010)	The authors examine the crowdfunding as an alternative way of financing projects, with a focus on small, entrepreneurial ventures describing factors affecting entrepreneurial preferences for crowdfunding as a source of finance. The authors elaborate different business models used to raise money by the crowdfunding.	The authors use a case study, namely Media No Mad (a French start-up, which successfully reached its funding goal during crowdfunding campaign). The data comes from an interview with the founder of the firm. Additional data were found on blogs linked to the event and by a survey, collecting information from the investors.	The results show that funders seek projects where they can participate and be useful. They show that the usage of the Internet is very important, because, without it, the higher costs in terms of money and time could occur. Also, the results show that the crowdfunding is more suited to small ventures because traditional financial services may find the size and lack of historical data as a concern to provide financing. For further research, the authors suggest analyzing the relation with intellectual property rights. (disclosure of entrepreneurial ideas to the crowd well in advance, creating risks of idea stealing). Moreover, the analysis of a remuneration scheme for the crowd that generates the most information about potential demand.
Sorensen (2008)	The author studies the uncertainties about technologies and investment opportunities for investments in entrepreneurial firms by venture capitalists. The paper shows the resolution of these uncertainties, through VCs' learning, is important for their investment decisions.	The sample data are provided by Sand Hill Econometrics and contain the majority of VC investments in the U.S. in the period 1987 to 2005 (databases are Venture Xpert and VentureOne). The sample is restricted to	The results show venture capital funds learn from past investments and also expect to learn from future ones. The paper demonstrates that VCs exhibit exploitative behaviour by changing their investments in response to the outcomes of past investments to benefit from higher immediate returns. Moreover, the study

	The paper suggests that venture capital funds learn from their previous investments but they also take into account the option value of future learning when making their decisions about investing.	investments made before 2000. The data consist of 19,166 investments in 6,076 companies by 216 venture funds.	shows that in the cross-section, venture capital funds with more exploratory investment strategies have greater success rates. Also, the study demonstrates that valuable investments are made quicker. Furthermore, the study states that venture capital funds invest primarily in entrepreneurship with new technologies and high option values.
Stiglitz & Weiss (1981)	According to basic economics, if demand exceeds supply, prices will rise, thus decreasing demand or increasing supply until demand and supply are in equilibrium; thus if prices do their job, rationing will not exist. However, credit rationing does exist.	The authors use interest rates serving as screening devices for evaluating risk, because interest rates change the behaviour for the borrower, increasing the attractiveness of riskier projects.	This study provides a theoretical explanation why bankers ration credit. The authors argue that the interest rate that banks charge may itself affect the quality of loans, and therefore that the interest rate alone may not be capable of clearing the market. The authors use the adverse selection and incentive effects, both of which were based on the assumption that banks can sort borrowers according to the expected return on their investments but not according to the risk
Timmermann (1993)	The study examines the two of the most discussed anomalies in finance, the predictability of excess returns and the excess volatility of stock prices assuming that learning effects on stock price dynamics may explain these anomalies	Simulation of learning effect	The results show that simulations of learning effects in a present value model can confirm that learning may help to explain excess volatility and predictability of stock return. It demonstrates that an estimation uncertainty may increase the volatility of stock prices and that an estimate of the dividend growth rate lower than the "true" value tends to increase the dividend yield and capital gain.
Wardrop & Ziegler (2016)	Application of new rules and potential risk to the investment-based crowdfunding and loan-based crowdfunding	A survey used in the Pushing Boundaries UK industry report on the P2P lending platforms regulatory framework.	The study describes the application of new rules and potential risk to the investment-based crowdfunding and loan-based crowdfunding. The Financial Conduct Authority's approach to crowdfunding is often demonstrated as the "gold-standard" for crowdfunding regulation according to the paper. The results of the survey show that 91 % of respondents consider the current regulation to be "adequate and appropriate" to their activities, more than 5 % suggesting that it could be stricter. Around 4 % consider the regulatory framework to be too strict. Very similar results are shown in equity-based crowdfunding.

Source: own processing using the related literature from the references

CHAPTER 3 Methodology and data

In order to test my hypotheses, I gathered the necessary data for my research from the Kickstarter itself in order to analyze the probability of successful completion of crowdfunding campaigns and also to understand what mainly determines the excess funding in crowdfunding campaigns.

3.1 Data collection

I have chosen two categories of products in my research, the first category is technology, especially wearables and the latter one is interactive design. The technology's category has been chosen due to the fact that a majority of my respondents in the survey did technology or design-related products. I gathered approximately the 402 most funded projects for every of two categories all around the world (302 of wearables and 100 of interactive designs). I have excluded projects, which have not been ended and still have not achieved their funding goal during the process of gathering. Moreover, I have also excluded suspended projects, because the Kickstarter may have decided that their campaigns were misleading or products were against the principles of the Kickstarter themselves, so I can assume that the Kickstarter has been willing to identify misleading campaigns on the platform and therefore reducing the idiosyncratic risk within the platform.

However, I have included observations that have not been finished in terms of the funding period, but have already achieved their funding goal, so I have assumed that they would be successful campaigns. For both categories of products, I have included variables such as the amount pledged, the number of backers, the funding goal, number of updates during the campaign, number of comments during the campaign, the funding period and the number of rewards. Moreover, thanks to all these variables I could also calculate others like the difference between the amount pledged and funding goal, the average funding per backer, the pledged/goal ratio, comments/ the average funding per backer ("comment popularity per funding dollar"), updates/the average funding per backer ("update popularity per funding dollar"), the amount reached/funding period ("pace of collecting"), the goal/funding ("optimism of founder") ratio and the eagerness to be successful (the number of rewards by the campaigner).

Sometimes the observations of funding goal and amount pledged were not denominated in the US dollars, but in other currencies (Canadian dollars, Australian dollars, UK pound sterling, Euros or Swiss Francs). Therefore, I had to convert the amounts denominated in other currencies to the US dollars, because the majority of funding was made in US dollars on the Kickstarter. I used the ECB calculator¹ for the conversion. All conversions were made to the date of 15th July 2016.

¹ ECB Currency Converter,
<<https://sdw.ecb.europa.eu/curConverter.do?sourceAmount=50000.0&sourceCurrency=CAD&targetCurrency=USD&inputDate=16-07-2016&submitConvert.x=98&submitConvert.y=10>>

3.2 Development of hypotheses

The first hypothesis, I would like to test is the (H_1) hypothesis stating that “the probability of success of crowdfunding campaign is influenced by the funding period, the average funding per backer, the update popularity, the comment popularity, the pace of collecting, the number of rewards (eagerness).” As my control variables, I have chosen the annual GDP growth in the USA, due to a fact that it is highly correlated with the world GDP growth, so it can predict the cyclicity of the world’s economy. Moreover, as other control variables, I have included short-term interest rate in the USA, which can also determine the cyclicity of the economy, category variable and the variable of the season taking into account a fact that some campaigns may be successful in a certain period of the year. I would like to test this hypothesis by using a logit regression model consisting of ten independent variables. First independent variable is the funding period (X_1) of the project. The second variable is the funding per backer (X_2). The third independent variable is the update popularity (X_3), which is basically the ratio of average funding per backer and updates during the campaign. The fourth variable, comment popularity (X_4), is the ratio of average funding per backer and the number of comments during the campaign. The pace of collecting (X_5) is the ratio of the amount pledged to the project and the funding period. The sixth independent variable is the number of rewards during the campaign provided by the campaigner (X_6). The control independent variables are GDP growth (X_7), short-term rate (X_8), category variable (X_9) and the season (X_{10}). The dependent variable in this test is a dummy variable of successful (1) or unsuccessful (0) completion of the campaigns (Y_1).

$$Y_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \varepsilon$$
$$Y_1 = 1 \text{ if } \{\alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \varepsilon > 0\} \quad (1)$$
$$Y_1 = 0, \text{ otherwise}$$

Secondly, I test the influence of all these independent variables on the excess project funding (the difference between the amount pledged to the project and the funding goal of the campaign).

H_2 : “The amount of excess project funding is influenced by the funding period, the average funding per backer, the update popularity, the comment popularity, the number of rewards (eagerness).” I assume that all these variables have a positive effect on the amount of excess project funding. I have excluded the variable pace of collecting from this second hypothesis due to a high positive correlation with the dependent variable (excess funding). Moreover, all the control variables were also included in this second model.

$$Y_2 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \varepsilon \quad (2)$$

Thirdly, I test the influence of all these independent variables on the pledged/goal ratio (the ratio of the amount pledged to the project to the funding goal of the campaign).

H₃: “The pledged/goal ratio is influenced by the funding period, the average funding per backer, the update popularity, the comment popularity, the number of rewards (eagerness).” I assume that all these variables have a positive effect on the amount of excess project funding. I have excluded the variable pace of collecting from this second hypothesis due to a high positive correlation with the dependent variable (excess funding). Moreover, all the control variables were also included in the third model.

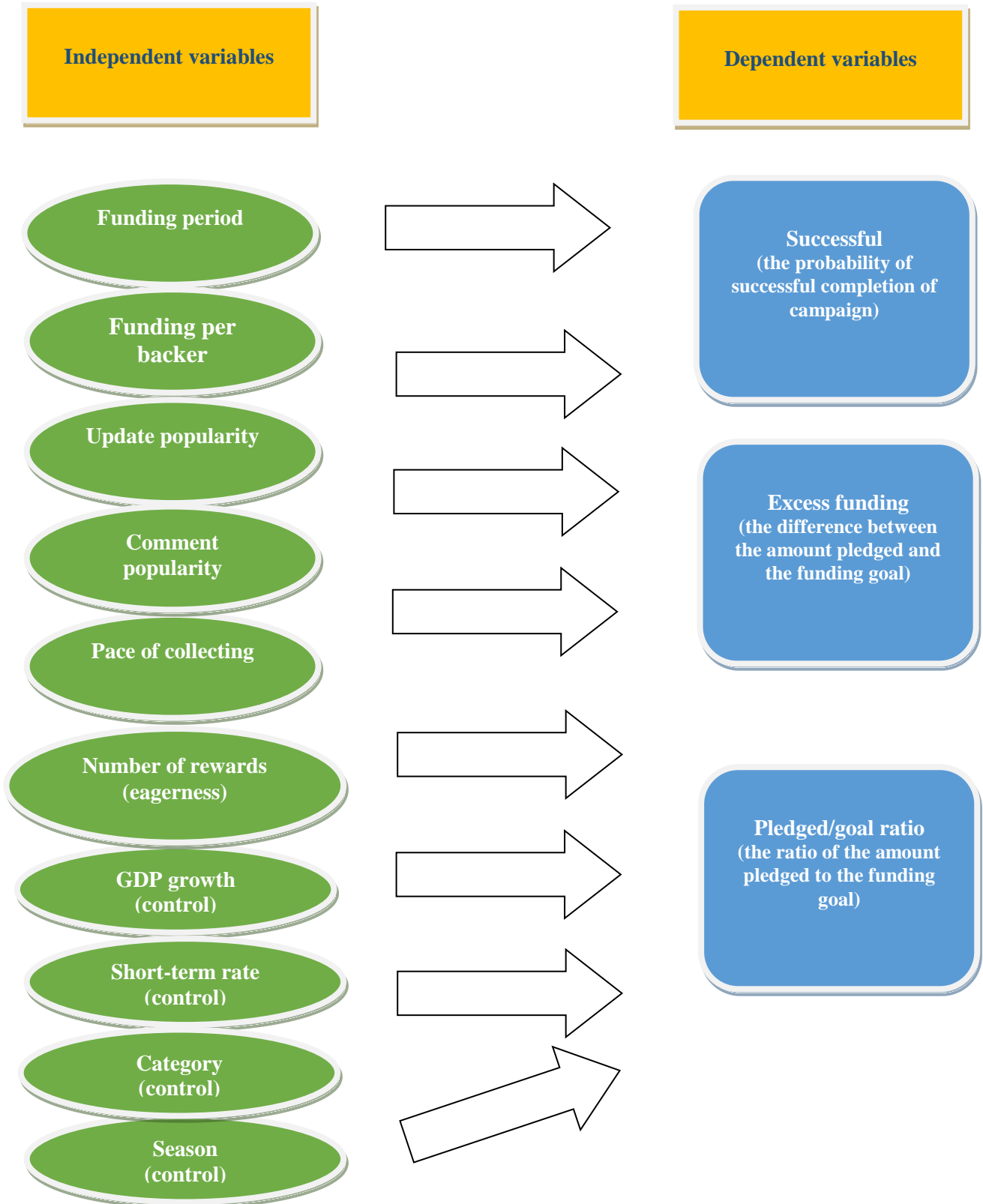
$$Y_3 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \varepsilon \quad (3)$$

3.3 Methodology of robustness check

In order to do a robustness check, I manually downloaded a new dataset from the Kickstarter considering “Dance” and “Journalism” as categories of campaigns. The sample for robustness check consists of 100 campaigns of the dance category, especially “the workshops” and it also consists of 101 campaigns of the journalism category, especially “the photos”. All variables were chosen in the same way as mentioned in the data collection part in the subsection (3.1.) However, due to a fact that categories as “Dance” and “Journalism” do not take so much attention, the results of robustness check may be slightly different from the main results. The results of the robustness check are presented in section 4 with all results of my models.

3.4 Conceptual framework

Figure V – Conceptual framework



4 Results and interpretations

In this chapter of the thesis, I would like to deeply present the results of my thesis and do a proper interpretation of the results. The descriptive statistics (Table I) shows the mean, standard deviation, minimum and maximum of all the variables used in the research. The maximum amount pledged to a campaign is 1,613,874 US dollars and the minimum amount pledged to campaign is 15 US dollars. This a very large difference between campaigns. Also, the number of backers can differ from only 1 backer to more than 10,000 ones. The average of funding goal is determined to be around 53,410 US dollars, which is quite a lot on average. The maximum funding goal is 785,000 US dollars. The difference is large also between the minimum amount of updates and comments. The table shows that some campaigns have no updates and comments, and some campaigns have more than 8000 comments and more than 75 updates. The average funding period is approximately 34 days, which is similar to the Kickstarter HandBook. The longest funding period is 62 days and the shortest one takes only 1 day.

Furthermore, the number of rewards also differ from campaign to campaign. The table shows that on average there are 10 rewards per campaign with standard deviation close to 5. The maximum amount of rewards is 41 and there is at least 1 reward per campaign. The excess funding variable is also spectacular because the negative excess funding is more than 780,000 USD dollars. That means campaigners tend to overestimate their ability to successfully complete a campaign and overestimate their funding goal (basically, they are too optimistic about their campaigns). On the other hand, some campaigns can be really great. As it is shown, the excess funding of one campaign exceeds 1,300,000 US dollars. In this case, I may conclude that the campaigner underestimated his/her product and his/her ability to succeed.

Considering, the funding per backer, the average funding per backer is approximately 158 US dollars and the mean of collecting pace is 2320 US dollars, which is high average amount pledged per day of the campaign. Taking into account the control variable season, the table shows that on average founders tend to do a campaigning between summertime and autumn.

Table II - Descriptive statistics

All variables

Variable	Obs	Mean	Std. Dev.	Min	Max
amount pledged	402	82902.53	167546.2	15	1613874
number of backers	402	607.779	1100.523	1	10119
funding goal	402	53410.19	79029.51	1	785000
updates	402	12.796	11.507	0	80
comments	402	199.184	605.191	0	8675
funding period	402	34.831	9.585	1	62
number of rewards	402	10.430	4.826	1	41
excess funding	402	29492.34	167646.9	-782653	1383779
funding per backer	402	158.283	154.731	8.875	1644
pledged/goal ratio	402	9.47141	105.958	.0029	2067
comment popularity	402	2.050	6.685	0	106.980
update popularity	402	.143	.189	0	1.382
pace of collecting	402	2320.644	4360.149	1.71	43618.22
successful (dummy)	402	.736	.441	0	1

The total sample includes 5628 observations, 402 per variable. This table displays the mean, standard deviation, minimum and maximum for each variable included in this research.

Table II - Descriptive statistics (cont'd)

Control variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
GDP growth (USA)	392	2.411	.133	1.49	2.43
short-term interest rate (USA)	392	.194	.048	.124	.227
Category	402	.751	.433	0	1
Season	391	2.453	1.106	1	4

The total sample of control variables includes 1577 observations. However, not all variables hold 402 observations, since variables such as GDP growth (USA), short-term interest rate (USA) are influenced by the fact that it was not possible to find a period (season) when certain crowdfunding campaigns were held. However, there were only 10 campaigns with that problem. This table displays the mean, standard deviation, minimum and maximum for each variable included in this research.

4.1 The determinants of successful completion of crowdfunding campaign

In the first hypothesis, I want to test if the probability of success of crowdfunding campaign is influenced by the funding period, the funding per backer, the update popularity, the comment popularity, the pace of collecting, the number of rewards and by the control variable as GDP growth, short-term interest rate, category and season. The hypothesis is tested thanks to a robust logit regression and the results show that there is a negative influence of an amplitude of funding period on the successfulness of the campaign at the 5 % level of statistical significance. That means that there is a higher probability of successful completion of the crowdfunding campaign when a shorter period of funding is used. This result is consistent with the previous statement of Strickler (2011). Moreover, the update popularity shows a significant positive result at the level of 1%, so the higher the update popularity, the higher the probability of successful completion of the campaign. This also decreases the information asymmetry among agents (founders and backers), because when the campaigner provides more information about the campaign by updating, backers are more likely to fund the campaign.

Thirdly, the pace of collecting has a positive effect on the successful completion of crowdfunding campaign at the 10% level of statistical significance, which means that a stronger pace of collecting (the higher the amount reached compared to the funding period), the faster the pace of collecting, then the probability of successful end of campaign is also higher (0.000295*). Considering the comment popularity has no significant effect on the probability of campaign to be successful, I suggest that comments about the projects and campaigns might not only be positive, but also negative,

and that is why the comment popularity does not have a significant effect on the successful completion of the campaigns.

Moreover, the correlation matrix (A) related to the variables implemented in the robust logit regression, displays no strong correlation among variables used. However, there is the correlation higher than 0.5 among the comment popularity and the update popularity due to the fact that the ratios of comment popularity and update popularity include the average funding per backer in their denominators. Nevertheless, when I drop the comment popularity variable, the update popularity is still significant, so everything is in order with the robust logit regression in the model (1). The robust regressions are used in my research, because of a strong suspicion of heteroscedasticity in the sample.

4.2 The determinants of the excess funding

In my second hypothesis, I want to test the influence of all variables on the excess project funding (the difference between the amount pledged to the project and the funding goal of the campaign). The hypothesis states that the amount of excess project funding is influenced by the funding period, the funding per backer, the update popularity, the comment popularity, the number of rewards and by the control variable as GDP growth, short-term interest rate, category and season. I have excluded the variable pace of collecting from this second hypothesis due to a high positive correlation with the dependent variable (excess funding) as can be seen in the correlation matrix (B) in appendix A.

The results of robust regression in the model (3) show 1 % significant influence of the comment popularity and the number of rewards on the excess funding. It can be seen in the model (3) that a positive unit change in comment popularity brings on average 1,282 US dollars higher excess funding. That can be interpreted in a way that the comment popularity is an important determinant of the amount of excess funding in crowdfunding campaigns. Also, the 1 % significant level of the positive impact of the number of rewards suggest that higher the number of rewards, the larger the difference between the amount pledged and the funding goal (excess funding) of campaigns. When controlling for the category, the campaigner should take into account the fact that campaigning in the “right” category can bring on average 6,913 more US dollars for the excess funding.

Nevertheless, the correlation matrix (B) does not show any high correlation among the variables applied in the regression higher except for the update and comment popularity due to the fact that the ratios of comment popularity and update popularity include the average funding per backer in their denominators. However, it is hard not to notice the correlation of pace of collecting and excess funding to be higher than 0.8, that is why the variable pace of collecting has been removed from the regression.

4.3 The determinants of the pledged/goal ratio

For the third hypothesis, I test the influence of all variables on the pledged/goal ratio. This model includes all independent variables because the correlation matrix (C) does not suggest any multicollinearity problem in the sample. The results of robust regression in the model (4) show 1 % significant influence of the update popularity and the pace of collecting on the pledged/goal ratio. The model shows that updating brings on average 2.56 times more pledges than the funding goal is. Also, the pace of collecting positively impacts the pledged/goal ratio. However, considering the number of rewards, it seems that on average the number of rewards influences the pledged/goal ratio negatively. So, it is better from the pledged/goal ratio's point of view to have a lower number of rewards at the 10% level of statistical significance.

Table III – Determinants of successful campaign, excess funding and pledged/goal ratio

	(1) Successful Logit	(2) excess funding multivariate OLS	(3) excess funding robust regression	(4) pledged/goal robust regression
funding period	-0.042** (-2.69)	322.3 (0.30)	-168.3 (-1.45)	-0.001 (-0.23)
funding per backer	0.00031 (0.31)	-18.33 (-0.51)	-5.414 (-0.73)	-0.0005 (-1.66)
update popularity	12.14*** (3.54)	-65765.6 (-0.80)	7987.5 (1.08)	2.560*** (9.12)
comment popularity	0.558 (1.96)	8097.8 (1.35)	1282.4*** (4.11)	0.0093 (1.15)
pace of collecting	0.000295* (2.11)			0.000251*** (23.59)
number of rewards	-0.053 (-1.52)	5617.6 (1.82)	834.9*** (3.63)	-0.0196* (-2.17)
<i>N</i>	391	391	390	391
adj. R ²		0.157	0.156	0.705
pseudo R ²	0.296			

This table presents the results from logit regressions (1) of the dependent dummy variable successful completion onto independent variables (funding period, funding per backer, update popularity, comment popularity, pace of collecting, number of rewards and control variables as GDP growth, short-term rate, category and season), the results of multivariate OLS (2) and robust regression (3) of the dependent variable excess project funding onto independent variables (except for the pace of collecting). Last but not least, the table presents the robust regression (4) of the dependent variable pledged-to-goal ratio onto predictor variables. T-statistics are reported in parentheses and *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Table III – Determinants of successful campaign, excess funding and pledged/goal ratio (cont'd)

	(1) Successful Logit	(2) excess funding multivariate OLS	(3) excess funding robust regression	(4) pledged/goal robust regression
Control variables:				
GDP growth	1.703 (1.55)	-38249.3 (-0.86)	-8406.7 (-1.05)	0.169 (0.54)
short-term rate	6.842* (2.31)	340276.5* (2.48)	24672.4 (1.10)	1.271 (1.47)
Category	0.321 (1.01)	34465.0* (2.08)	6913.0** (2.69)	0.0067 (0.07)
Season	-0.0315 (-0.26)	4016.7 (0.65)	129.3 (0.13)	-0.0045 (-0.12)
_cons	-4.284 (-1.50)	-53645.1 (-0.41)	9437.5 (0.45)	0.222 (0.28)
<i>N</i>	391	391	390	391
adj. R ²		0.157	0.156	0.705
pseudo R ²	0.296			

This table presents the results from logit regressions (1) of the dependent dummy variable successful completion onto independent variables (funding period, funding per backer, update popularity, comment popularity, pace of collecting, number of rewards and control variables as GDP growth, short-term rate, category and season), the results of multivariate OLS (2) and robust regression (3) of the dependent variable excess project funding onto independent variables (funding period, funding per backer, update popularity, comment popularity, number of rewards and control variables as GDP growth, short-term rate, category and season). Last but not least, the table presents the robust regression (4) of the dependent variable pledged-to-goal ratio onto predictor variables as (funding period, funding per backer, update popularity, comment popularity, the pace of collecting, the number of rewards and control variables as GDP growth, short-term rate, category and season). T-statistics are reported in parentheses and *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

4.4 Results of the robustness check

Robustness check is done in the same way as tests of my hypotheses, but a new dataset of campaigns is used. For the robustness check, I included 201 campaigns (100 campaigns in “Dance” category and 101 campaigns in “Journalism” category) taking into account the most-funded campaigns in the subsection of workshops (“Dance”) and the subsection of photos (“Journalism”). The results of the robustness check are slightly different from the main models, but this can be explained by a fact that categories as “Dance” and “Journalism” do not grab so much attention as “Technology” and “Design” and therefore, the average amount of campaigns is smaller in the first two categories.

The results of robustness check show that the successful completion of crowdfunding campaigns is determined by the pace of collecting at the 5 % level of statistical significance and this variable positively affects the successful completion of campaigns. Also, the category, in which the

campaigns are made, is relevant, because some categories of products are considered to be more interesting from the perspective of potential backers than others. The results excess funding model show that the excess funding is determined by the comment popularity at the level 10% of statistical significance and one more comment brings on average more than 5,300 US dollars of excess funding. Also, the pace of collecting, which is not excluded from the regression in this case, because taking into account this new dataset, there is no high correlation between the pace of collecting and the excess funding, is positively related to the excess funding at the level of 5%.

When considering the pledged/goal ratio, the significant effect can be found in the funding per backer variable, the pace of collecting variable, GDP growth variable and the category variable. The funding per backer variable and the collecting pace variable positively affect the pledged/goal ratio, so the higher the funding per backer and the collecting pace, the higher the pledged/goal ratio. Nevertheless, it is interesting that the GDP growth has a negative impact on the pledged/goal ratio. It seems that the higher the growth of GDP, the smaller the pledged/goal ratio is. This is a very good opportunity to start a further research by examining this fact.

Table IV – Robustness check

	(1) successful robust logit	(2) excess funding robust multivariate regression	(3) pledged/goal robust multivariate regression
funding period	0.0292 (1.54)	8.750 (0.44)	0.00053 (0.33)
funding per backer	0.000965 (0.20)	3.391 (0.60)	0.0017*** (3.67)
update popularity	0.138 (0.17)	1601.5 (1.06)	-0.0255 (-0.20)
comment popularity	-0.174 (-0.13)	5338.4* (2.07)	0.103 (0.48)
pace of collecting	0.0325** (3.22)	11.34*** (7.80)	0.00234*** (19.56)
number of rewards	0.00682 (0.09)	-21.73 (-0.29)	0.00738 (1.19)
N	184	194	194
adj. R ²		0.377	0.796
pseudo R ²	0.439		

Table IV – Robustness check (cont'd)

	(1)	(2)	(3)
	successful robust logit	excess funding robust multivariate regression	pledged/goal robust multivariate regression
Control variables:			
GDP growth	0 (.)	-877.9 (-1.12)	-0.235*** (-3.63)
short-term rate	0.145 (0.03)	-1020.4 (-0.20)	-0.605 (-1.43)
category	0.983* (2.01)	737.5 (1.41)	0.151*** (3.50)
Season	0.0549 (0.26)	-112.7 (-0.48)	-0.0614** (-3.16)
_cons	-4.314** (-2.83)	-1258.4 (-0.43)	0.759** (3.16)
<i>N</i>	184	194	194
adj. R ²		0.377	0.796
pseudo R ²	0.439		

This table presents the robustness check of my research by using a new set of data taken from the Kickstarter (categories used are dance (workshops) and journalism (photo)). The table shows the results from logit regressions (1) of the dependent dummy variable successful completion onto independent variables (funding period, funding per backer, update popularity, comment popularity, pace of collecting, number of rewards and control variables as GDP growth, short-term rate, category and season), the results of multivariate robust regression (2) of the dependent variable excess project funding onto independent variables. The table also presents the robust regression (3) of the dependent variable pledged-to-goal ratio onto predictor variables as (funding period, funding per backer, update popularity, comment popularity, the pace of collecting, the number of rewards and control variables as GDP growth, short-term rate, category and season). T-statistics are reported in parentheses and *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

CHAPTER 5 Conclusion

In this master's thesis, I have decided to examine the impact of updating, commenting, the category of product, the number of rewards offered (eagerness), the pace of collecting, the funding period, the average funding per backer, the season, the GDP growth and the short-term interest rate on the successfulness of crowdfunding campaigns, the excess funding and the pledged/goal ratio. By testing my first hypothesis and implementing a robust logit model that the probability of success of crowdfunding campaign is negatively influenced by an amplitude of funding period on the successfulness of the campaign at the 5 % level of significance. That means that there is a higher probability of successful completion of the crowdfunding campaign when a shorter period of funding is determined. Also, I find that the update popularity brings on average higher probability of successful completion of the campaign. Furthermore, I assume that it also decreases the information asymmetry between campaigners and backers, because when the campaigner provides more information about the campaign by updating, backers are more likely to fund the campaign. The pace of collecting has also a positive effect on the successful completion of the crowdfunding campaign, so the faster the pace of collecting, the higher the probability of successful completion of the campaign.

Considering the excess funding during the crowdfunding campaigns, I may conclude that the comment popularity and the number of rewards have an impact on the excess funding. Results show that an increase in comment popularity by 1 comment brings on average 1,282 US dollar higher excess funding. The Same conclusion is related to rewarding because I find that the higher the number of rewards, the larger the excess funding of campaigns. Moreover, I have also gained significantly by testing the determinants of the pledged/goal ratio. These results are mainly significant for the update popularity and the pace of collecting on the pledged/goal ratio. I find that update popularity brings on average 2.56 times more funding in comparison with the funding goal.

To conclude, I may say that a reward-based crowdfunding is a very important part of the financing of SMEs, which might bring necessary funding in order to start a business with already gained experiences with potential customers (backers) thanks to crowdfunding. Crowdfunding platforms like the Kickstarter provide an excellent opportunity for potential entrepreneurs and projects creators to find out if there is a market for their products and also decrease information asymmetry between projects creators (campaigners) and potential backers (customers, funders).

5.1 Limitations of the thesis

The limitations of my research may be the methodology of collecting data due to the fact that I manually gathered data from the Kickstarter and it is not possible to download data automatically from these platforms. The other limitation might be the usage of only two categories of products (technology, especially wearables, and design, especially interactive design), but I have chosen these two categories (category) of products and campaigns because in my survey related to crowdfunding

the respondents were mainly active in these two categories. Also, for my research, I have used the data from the Kickstarter, although I do not think it would mislead the results of the thesis because the Kickstarter is the most widely known crowdfunding platform around the globe. Moreover, I see limitations in the robustness check, because the results are slightly different from the main models. However, this may be explained by the fact that for the robustness check I chose a new dataset consisted of categories that do not grab so much attention by potential backers than categories like Technology and Design.

5.2 Future research

For further research, I assume to collect more data from every category in order to have a deeper knowledge about determinants of successfulness of crowdfunding campaigns. The best possibility to achieve this would be if the crowdfunding platforms like the Kickstarter or Indiegogo did provide the overall statistics about every campaign ever made on these platforms. Crowdfunding is a very interesting topic, so for further research, I would also assume more research about the appropriateness and the quality of rewards received by the backers from campaigners on crowdfunding platforms. However, I understand that it will be hard to gather these data, but as I have already written before, it would have a real impact on research about crowdfunding, if the crowdfunding platforms were more opened to scientists and provide more data about their business. Moreover, it would be interesting to make a deeper research about the relation of the economic growth and interest rates and the crowdfunding campaigns. It seems to be an interesting topic for future.

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APPENDIX A

Table V – Variable definitions

Variable	Definition
amount pledged	The total amount of money reached during the crowdfunding campaign.
number of backers	The total number of funders of the campaign.
funding goal	The amount of money founders/creators of the campaign want to achieve during the campaign.
updates	The total amount of updates about the project during the campaign on the website of the campaign.
comments	The total amount of comments about the project during the campaign on the website of the campaign.
funding period	The period in which the campaign will be running.
excess funding	The difference between the total amount pledged (reached) during the campaign and the funding goal of the campaign.
funding per backer	The ratio of total amount pledged to the number of backers during the campaign.
pledged-goal ratio	The ratio of total amount pledged to the funding goal.
comment popularity	The ratio of the average funding per backer divided by the total amount of comments during the campaign.
update popularity	The ratio of the average funding per backer divided by the total amount of updates made to the campaign.
pace of collecting	The ratio of total amount of money reached/pledged during the campaign to the funding period.
number of rewards	The total number of rewards provided during the campaign by the campaigner.
Successful	A dummy variable, which tends to be equal to 1, if the campaign is successful (the funding goal was reached) or equal to 0 if the campaign is not successful.

This table displays the variables that are included in this research and provides a detailed description of each variable.

Table V – Variable definitions (cont'd)

Control variable	Definition
category	A dummy control variable, which is equal to 1 for the category of “technology”, and equal to 0 for the category of “design”
season	A control variable for the effect of periods during the year, by this variable I try to figure out if there is an effect of periods of year on the model.
GDP growth (USA)	A control variable showing the effect of the annual percentage change in the GDP of the USA. There is a high positive correlation between the GDP growth of the world and the GDP growth of the USA in my sample.
short-term interest rate (USA)	A control variable showing the effect of the short-term interest rates taking into account cyclicity of the economy

This table displays the control variables that are included in this research and provides a detailed description of each variable.

Table VI - Correlation matrix (A)

	success	funding period	funding per backer	update popularity	comment popularity	pace of collecting	number of rewards	GDP growth (USA)	short-term rate (USA)	category	season
success	1.0000										
funding period	-0.1416	1.0000									
funding per backer	-0.1530	0.1773	1.0000								
update popularity	0.3119	-0.0708	-0.3419	1.0000							
comment popularity	0.1687	-0.0108	-0.1233	0.5761	1.0000						
pace of collecting	0.2080	0.0664	0.1125	0.0732	0.3569	1.0000					
number of rewards	0.0583	0.1364	0.0848	0.1132	0.2481	0.2924	1.0000				

This table presents correlations of a dependent dummy variable (successful) and independent variables used in the logit regression (model1). Table V provides a detailed description of each variable.

Table VI - Correlation matrix (A) (cont'd)

	success	funding period	funding/backer	update popularity	comment popularity	pace of collecting	number of rewards	GDP growth (USA)	short-term rate (USA)	category	season
GDP growth	-0.0044	-0.0705	0.0087	-0.0665	-0.0193	-0.0477	-0.0160	1.0000			
short-term rate	0.1104	-0.0536	0.0063	-0.0506	0.0069	0.0750	0.0775	0.0808	1.0000		
category	0.1684	0.1531	0.1806	0.0370	0.1569	0.2515	0.1697	0.0395	0.0172	1.0000	
season	-0.0230	0.0583	0.0924	-0.0488	-0.0219	0.0539	0.0564	-0.1371	-0.0984	0.0598	1.0000

This table presents correlations of a dependent dummy variable (successful) and independent variables used in the logit regression (model1). Table V provides a detailed description of each variable.

Table VII – Correlation Matrix (B)

	excess funding	funding period	funding per backer	update popularity	comment popularity	pace of collecting	number of rewards	GDP growth (USA)	short-term rate (USA)	category	season
excess funding	1.0000										
funding period	0.0518	1.0000									
funding per backer	0.0041	0.1773	1.0000								
update popularity	0.1375	-0.0708	-0.3419	1.0000							
comment popularity	0.3454	-0.0108	-0.1233	0.5761	1.0000						
pace of collecting	0.8688	0.0664	0.1125	0.0732	0.3569	1.0000					
number of rewards	0.2643	0.1364	0.0848	0.1132	0.2481	0.2924	1.0000				

This table presents correlations of dependent variable (excess funding) and independent variables used in the robust linear regression (model2), except for the variable named “pace of collecting, which was not used in regression due to a high positive correlation with the dependent variable. Table V provides a detailed description of each variable.

Table VII – Correlation Matrix (B) (cont’d)

	excess funding	funding period	funding per backer	update popularity	comment popularity	pace of collecting	number of rewards	GDP growth (USA)	short-term rate (USA)	category	season
GDP growth	-0.0284	-0.0705	0.0087	-0.0665	-0.0193	-0.0477	-0.0160	1.0000			
short-term rate	0.1123	-0.0536	0.0063	-0.0506	0.0069	0.0750	0.0775	0.0808	1.0000		
category	0.1698	0.1531	0.1806	0.0370	0.1569	0.2515	0.1697	0.0395	0.0172	1.0000	
season	0.0320	0.0583	0.0924	-0.0488	-0.0219	0.0539	0.0564	-0.1371	-0.0984	0.0598	1.0000

This table presents correlations of dependent variable (excess funding) and independent variables used in the robust linear regression (model2), except for the variable named “pace of collecting, which was not used in regression due to a high positive correlation with the dependent variable. Table V provides a detailed description of each variable.

Table VIII – Correlation Matrix (C)

	pledged/goal	funding period	funding per backer	update popularity	comment popularity	pace of collecting	number of rewards	GDP growth (USA)	short-term rate (USA)	category	season
pledged/goal	1.0000										
funding period	-0.0312	1.0000									
funding per backer	-0.0567	0.1773	1.0000								
update popularity	0.0782	-0.0708	-0.3419	1.0000							
comment popularity	0.0079	-0.0108	-0.1233	0.5761	1.0000						
pace of collecting	0.0114	0.0664	0.1125	0.0732	0.3569	1.0000					
number of rewards	-0.0381	0.1364	0.0848	0.1132	0.2481	0.2924	1.0000				
GDP growth	0.0102	-0.0705	0.0087	-0.0665	-0.0193	-0.0477	-0.0160	1.0000			
short-term rate	0.0274	-0.0536	0.0063	-0.0506	0.0069	0.0750	0.0775	0.0808	1.0000		
category	-0.0754	0.1531	0.1806	0.0370	0.1569	0.2515	0.1697	0.0395	0.0172	1.0000	
season	-0.0737	0.0583	0.0924	-0.0488	-0.0219	0.0539	0.0564	-0.1371	-0.0984	0.0598	1.0000

This table presents correlations of dependent variable (pledged/goal ratio) and independent variables used in the linear regression (model3). Table V provides a detailed description of each variable.

